TARC INTERNATIONAL CONFERENCE ON LEARNING AND TEACHING
18 - 19 October 2010
One World Hotel, Petaling Jaya, Malaysia

EMERGING TRENDS
In Higher Education Learning And Teaching

PROCEEDINGS

Conference Partners:
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**INTERNATIONAL PANEL OF PEER REVIEWERS**

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<th>Name</th>
<th>Position and Affiliation</th>
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<tr>
<td>Dr Angeliki Polyzou</td>
<td>Adjunct Lecturer, Department of Primary Education, University of Crete, United Kingdom</td>
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<tr>
<td>Dr Ann Thorne</td>
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<td>Dr Balakrishnan Muniandy</td>
<td>Senior Lecturer, Universiti Sains Malaysia, Malaysia</td>
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<td>Mr Balamuralithara a/l Balakrishnan</td>
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<tr>
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<td>Dr Cheah Phaik Kin</td>
<td>Assistant Professor, Faculty of Arts and Social Sciences, Department of Public Relations, University Tunku Abdul Rahman, Malaysia</td>
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<td>Prof Dr Chenicheri Sid Nair</td>
<td>Professor, Higher Education Development Centre for the Advancement of Teaching and Learning (CATL), University of Western Australia, Australia</td>
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<td>Dr Choy Siew Chee</td>
<td>Head of Perak Branch Campus, Tunku Abdul Rahman College, Malaysia</td>
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<td>Assoc Prof Dr Chung Han Tek</td>
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<td>Ms Clare Guthrie</td>
<td>Senior Lecturer in Accounting and Finance, Manchester Metropolitan University, United Kingdom</td>
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<td>Prof Dr Ewe Hong Tat</td>
<td>Professor/Dean, Faculty of Information &amp; Communication Technology, Universiti Tunku Abdul Rahman, Malaysia</td>
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<td>Prof Dr George Stonehouse</td>
<td>Dean, Edinburgh Napier University Business School, United Kingdom</td>
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<tr>
<td>Dr Ian J Bradshaw</td>
<td>Subject Leader in Pharmaceutical and Chemical Sciences, Liverpool John Moores University, United Kingdom</td>
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<td>Assoc Prof Dr Irfan Naufal Umar</td>
<td>Lecturer, Universiti Sains Malaysia, Malaysia</td>
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<td>Ms Jennifer Naeem</td>
<td>Senior Lecturer, Auckland University of Technology, Australia</td>
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Dr Narendra Kumar Gupta  
Senior Lecturer, Teaching Fellow, and Director of Quality, Edinburgh Napier University, United Kingdom

Dr Neil Mitchell  
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Dr Ng Soo Boon  
Head of Preschool Unit, Curriculum Development Division, Ministry of Education Malaysia, Malaysia
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<tr>
<td>Ms Nicolene Murdoch</td>
<td>Director, Institutional Planning and Quality Assurance, Monash University, South Africa</td>
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<td>Assoc Prof Dr Ong Seng Fook</td>
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<tr>
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<td>Senior Lecturer in Teaching and Learning, University of Melbourne, Australia</td>
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<td>Assist Prof Philip Wai Hong Chan</td>
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<td>Prof Dr Raja Maznah Raja Hussain</td>
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<tr>
<td>Assoc Prof Dr Rozinah Jamaludin</td>
<td>Associate Research Fellow for IPPTN (National Higher Education Institute), Universiti Sains Malaysia, Malaysia</td>
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<td>Prof Dr Sam Allwinkle</td>
<td>Associate Director Academic Development, Edinburgh Napier University, United Kingdom</td>
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<td>Prof Dr Shaari Abdul Hamid</td>
<td>Professor, Open University Malaysia, Malaysia</td>
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<td>Assist Prof Dr Siew Pei Hwa</td>
<td>Assistant Professor &amp; Head of Programme, Master of Information Systems, Faculty of Information &amp; Communication Technology, Universiti Tunku Abdul Rahman, Malaysia</td>
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<td>Dr Simon Stobart</td>
<td>Assistant Dean, Teesside University, United Kingdom</td>
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<td>Name</td>
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<td>Dr Wah Hoon Siew</td>
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<td>Director, Institute of Quality, Research &amp; Innovation, Open University Malaysia, Malaysia</td>
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TARC INTERNATIONAL CONFERENCE ON LEARNING & TEACHING 2010 (TIC2010) is the second bi-annual conference organised by Tunku Abdul Rahman College, Kuala Lumpur, Malaysia from 18-19 Oct 2010. The theme of this year’s conference is “Emerging Trends in Higher Education Learning and Teaching”. This conference focuses on issues pertaining to methodologies and strategies in learning, teaching and assessment; the use of technology and its impact on learning, teaching and assessment environments; and international policies and professional development. A conference of such theme and focus is certainly timely as educators are facing a “new generation” of learners, who are better known as the “Gen-Y”, “net generation” and “millennial” learners, who possess “new” learning characteristics that are yet to be explored. It will be interesting to see the effectiveness of applying new learning and teaching methodology and strategies on these new learners. In addition, we will also be able to see how the current practices have been modified or adapted to meet the challenges and requirement of the “Gen Y” in learning and teaching.

The papers published in this Proceedings are mostly based on theoretical and empirical research findings of the authors on studies that match the conference theme and sub-themes. Most of the papers have concentrated on issues pertaining to methodologies and strategies in learning, teaching and assessment, the use of technology and its impact on learning, teaching and assessment environments. Some of the papers discussed international policies and professional development in the area of learning and teaching adopted in various institutions. All these papers were selected through a double-blind peer review process. The reviewers’ comments and recommendations were conveyed to the authors for further improvement. The Editorial committee finalised the papers by doing only the minor corrections and formatting as the editors had endeavored to maintain the focus and original meaning of the paper as how it was intended by the authors.

On behalf of the editorial committee, I would like to extend my sincere appreciation to Emeritus Professor Robert Burden and Associate Professor Keith Postlethwaite for their advice and commentary, the panel of reviewers for their reviews and constructive comments, the authors for their quality papers and everyone who has contributed to make this Proceedings possible.

Dr Ng Swee Chin
Chair, Editorial Committee
TARC International Conference on Learning and Teaching 2010
Tunku Abdul Rahman College
Malaysia
COMMENTARY BY EDITORIAL ADVISORS

Robert Burden PhD, MA, DipEdPsych, FBPsS
Emeritus Professor of Applied Educational Psychology
University of Exeter, UK

Robert Burden PhD, MA, DipEdPsych, FBPsS is Emeritus Professor of Applied Educational Psychology at the University of Exeter, where he was formally Head of the School of Education and Lifelong Learning. He is a former President of the International School Psychology Association and the recipient of numerous national and international awards for his lifelong contributions to applied educational psychology. He is the editor of the journal ‘School Psychology International’ and the author of over 100 published articles and several well known books, including ‘Dyslexia and Self Concept’ and ‘Psychology for Language Teachers’ (with Marion Williams). He has also supervised over 100 successful Masters and Doctorate theses. Professor Burden is currently the Director of Exeter’s Cognitive Education Centre, a Vice President of the British Association of Counselling and Psychotherapy, and a Trustee of the British Dyslexia Association, of which he is also the Chair of the Accreditation Board.

SUB-THEME A

The range of approaches on offer in the papers devoted to these themes is both exciting and very promising. Whilst a few papers are devoted to what are now standard approaches to learning, such as problem based learning, field trips, integrated portfolios and raising cultural awareness, there are others that begin to explore the benefits of fostering learner autonomy, the examination of drawing on research on learning styles and developing emotional intelligence as a way of embedding ‘soft skills’. I am particularly impressed by the growing emphasis upon listening to the voice of the students and drawing upon their feedback in reshaping teaching input. Thus, we have a survey of student engagement, a paper on students’ preferred teaching strategies, one on student mentoring and one on students’ reflections on their own learning. At the same time, teachers themselves are being asked to consider their own approaches to teaching by reflecting on their practice in critical thinking and carrying out collaborative action research on study skills training. I am impressed also by the innovative approaches that appear to have been taken to assessment. Here, the papers explore such new and exciting topics as authentic assessment, outcomes based assessment, the use of Bloom’s taxonomy to evaluate exam questions, data envelopment analysis and generative learning spirals of assessment. I must state at this point that few of the papers as yet are in a position to provide us with substantial evidence to support their cases, but this, after all, is one of the great benefits of a conference of this nature - to explore new ideas without necessarily feeling that all of the research bases are covered. I feel sure that further, more substantial research will follow from the stimulus that these papers will provide.

Keith Postlethwaite MA, Dphil, PGCE
Associate Professor of Education and
Deputy Head of School at the Graduate School of Education
University of Exeter, UK

Keith Postlethwaite MA, Dphil, PGCE is Associate Professor of Education and Deputy Head at the Graduate School of Education at the University of Exeter. He taught physics in a large secondary school in England for 8 years, before beginning his research career by studying the effects of mixed ability grouping in secondary education. This led to a post at the University of Oxford where he ran a series of research projects on more able pupils and pupils with special educational needs, and began to draw this range of research together into a concern for the differentiation of teaching to meet the individual needs of all the pupils in a class. While at Oxford, he contributed to the development of the Oxford Internship Scheme – an innovatory approach to teacher education which pioneered new ways in which schools and universities could work together to better educate beginning teachers. This sparked a strong interest in professional learning which was the focus of his teaching, management and research at the University of Reading and University of the West of England and
His research interests are shaped by a strong commitment to action research as a methodology for the empowerment of teachers, the development of educational theory and the improvement of classroom practice. He has a long-standing interest in reflective practice as a theoretical model of teacher learning and has recently been involved in expanding this view by drawing on socio-cultural theories of learning including activity theory. From this theoretical base, he explored teacher learning by using qualitative and quantitative data within a framework of mixed methodologies and methods. A particularly rewarding aspect of his work at Exeter is his work with doctoral students. He has supervised some 20 (mainly international) students to successful completion of their PhDs, and he teaches statistical methods to doctoral students on the Exeter PhD and EdD programmes.

Recent research projects include a study of teacher learning in induction (funded by The Leverhulme Trust), a socio-cultural study of learning in further education (funded by ESRC) and, building on his interest in differentiation, a study of Science Education for Diversity (funded by the European Union).

**SUB-THEME B**

The papers in Theme B provide a wide-ranging set of insights into the use of ICT in education.

These papers explore widely varying uses of ICT: multimedia learning materials to support face-to-face and independent learning; podcasting; simulations that provide students with virtual field courses and virtual business operations; Web2.0 communication tools such as blogs and Facebook; interactive assessment tools that support students’ future learning as they engage with the feedback they receive; integrated use of mobile technologies, CAD and the Web. Some papers begin to address the notion that ICT is not simply a new tool to use within traditional learning environments, but a tool which makes it possible for teachers to design radically new learning environments – perhaps it even requires such radical re-design. Simply as an overview of what ICT offers to teachers and learners, the papers are inspirational.

The papers draw attention to some of the factors which lead to the incorporation of ICT into education. Some of these are directly related to learning: a desire to enhance student learning, to improve the student experience, to aid retention of what is learnt, to increase student motivation for learning. However, we are also reminded that ICT can be introduced as a response to increased student numbers in higher education, to greater diversity in the student body, and to the pressures on study time that students themselves face as a result of the financial demands upon them. In evaluating the impact of ICT, it is important to keep these drivers in mind. In some situations, where non-academic pressures are increasing, simple maintenance of learning standards through the use of ICT could be seen as a significant achievement.

Perhaps the most important single issue which emerges from reading this collection of papers is the importance of attending to theory when planning learning environments that involve ICT. Almost all of the contributions address this in detail and some of the papers are concerned with developing theory from their own empirical work. Some of the theories that are used relate directly to ICT e.g. Richard Mayer’s Seven Design Principles, but the papers also draw on a range of broader theories including cognitive load theory, constructivist theories of learning, theories of professional learning, including reflective practice and experiential learning, dynamic theories of motivation, and the rather more contested notion of learning styles. This theoretical richness is to be welcomed. However, it suggests that the field may need to consider how to synthesise this range of ideas. Perhaps one tool that would help is Mishra & Koehler’s notion of TPACK\(^1\) – technological, pedagogical and content knowledge. Although still in development, this notion promises to support discussion about how teachers use technology in education, in the way that Shulman’s earlier notion

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\(^1\) Mishra P & Koehler, M (2006) Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge
Teachers College Record Volume 108, Number 6, June 2006, pp. 1017–1054
of PCK (pedagogical content knowledge) led to a more sophisticated understanding of how teachers use pedagogical theories to support their teaching.

Finally a methodological point. Most of the papers are based on quasi-experimental designs or survey designs, relying on quantitative data and statistical analysis. Although some describe their research as case study, the methodologies used were still essentially quasi-experimental, and the data reported were predominantly quantitative. Given the complexity and relative novelty of the field it could be useful to expand the research approach, perhaps giving more detailed attention to qualitative data in research designs that use interpretive or mixed methodologies. This would lead to greater understanding of how students and teachers think and feel about the impact of ICT on their learning, which, together with the quantitative information about the impact of ICT on outcome variables, could lead to richer theoretical understanding of the place of ICT in education.

SUB-THEME C

A wide range of issues are addressed by the set of papers in Theme C, for example: the notion of quality in further and higher education, the employability of graduates, the impact of technology on educational opportunities, the empowerment of disadvantaged groups, provision for disabled and non-disabled students, the internationalisation of higher education and the nature of the relationship between education and culture. These issues illustrate the complexity of the demands faced by further and higher education, and also suggest that similar issues are of concern in many different countries.

Concern with issues of culture is a common feature of many of the papers. One issue is the cross-cultural applicability of ideas, but there is a more general interest in the ways in which culture defines, enables and limits learning. The relevant papers conceptualise culture in different ways: in terms of the broad cultural expectations of society, the management culture of organisations, or the specific local circumstances of a particular course. One paper specifically mentioned the difficulties that students faced in transferring ideas from one culture (the workplace) to another (the university). Together the points made suggest that it might be profitable to look, more explicitly, at higher education from the perspective of cultural theories of learning, including perhaps Engeström’s\(^2\) third generation Activity Theory.

Although there are notable exceptions, some papers say little about their methodology, or seem to confuse methodology with methods. In such cases, more specific reference to the literature on the chosen methodology could have influenced the design of the overall research strategy and consequently increased the rigour of the research.

Nevertheless there were some interesting findings. One that struck me was that professional staff in further education, “operating as first-line or middle managers, make sense of a role which is far from certain and often requires the capacity to live on the edge, while maintaining a commitment to professional values”. Indeed, in a context where many countries face a rapidly changing policy environment and significant economic challenges to education, the importance of adherence to a strong set of professional values would seem to be something which leaders and front line educators should continue to keep at the front of their minds.

# PROGRAMME

## MONDAY, 18 OCTOBER 2010

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<td>Registration</td>
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<td>9.00 – 9.30am</td>
<td><strong>Welcome Address</strong>&lt;br&gt;by Dr Tan Chik Heok&lt;br&gt;Principal, Tunku Abdul Rahman College, Malaysia</td>
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<td><strong>Official Opening &amp; Address</strong>&lt;br&gt;by YB Dato’ Seri Mohamed Khaled bin Nordin&lt;br&gt;Minister of Higher Education, Malaysia</td>
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<td>9.30 – 10.15am</td>
<td><strong>Keynote Address 1</strong>&lt;br&gt;Globalisation of Higher Education: The Malaysian Perspective&lt;br&gt;by YBhg Datin Prof Dr Siti Hamisah binti Tapsir&lt;br&gt;Deputy Director General, Private Higher Education Management Sector&lt;br&gt;Ministry of Higher Education, Malaysia</td>
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<td>10.15 – 10.45am</td>
<td>TEA BREAK &amp; POSTER PRESENTATION</td>
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<td>10.45 – 11.30am</td>
<td><strong>Plenary 1</strong>&lt;br&gt;A Framework for Higher Education 2.0:&lt;br&gt;21st Century Education for 21st Century Learners&lt;br&gt;by Professor Zoraini Wati Abas&lt;br&gt;Faculty of Education and Languages&lt;br&gt;Director of the Institute of Quality, Research, and Innovation (CQMRI)&lt;br&gt;Director of the Centre for Instructional Design and Technology&lt;br&gt;Open University Malaysia, Malaysia</td>
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<td>11.30 – 11.55am</td>
<td><strong>Parallel Sessions</strong>&lt;br&gt;<strong>Room: Ruby</strong>&lt;br&gt;A1-1&lt;br&gt;Collaborative Action Research for Developing Effective Instructional Strategies Aimed at Improving Study Skills Among Higher Education Students&lt;br&gt;Pongchawee Vaiyavuthjamai, Sriwilai Ponnmaee, Ampha Danpakdee, Souwanit Charoenchai, Natcha Kamol &amp; Boonrawd Chotiwaschatra&lt;br&gt;Chiang Mai University, Thailand&lt;br&gt;<strong>Room: Maple</strong>&lt;br&gt;A1-2&lt;br&gt;Developing Generative Learning: Spirals of Action and Assessment&lt;br&gt;Sue Bodman &amp; Susan Taylor&lt;br&gt;University of London, UK&lt;br&gt;<strong>Room: Cypress</strong>&lt;br&gt;B1-1&lt;br&gt;The Effects of Integrating Mobile and CAD Technology in Teaching Architectural Design Process for Malaysian Polytechnics Architectural Students in Producing Creative Product&lt;br&gt;Isham Shah Bin Hassan&lt;br&gt;Mohd Arif Ismail &amp; Ramlee Mustapha&lt;br&gt;Port Dickson Polytechnic&lt;br&gt;<strong>Room: Tulip</strong>&lt;br&gt;C1-1&lt;br&gt;Quality is What Quality Does!&lt;br&gt;Chenicheri Sid. Nair&lt;br&gt;University of Western Australia, Australia</td>
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<td>A1-5 Strategies to Embed Intercultural Competence as a Soft Skill</td>
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<td>12.45 –</td>
<td>LUNCH &amp; POSTER PRESENTATION</td>
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<td>1.45 – 2.30pm</td>
<td>Keynote Address 2</td>
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<td>Emerging Trends in Higher Education Learning and Teaching: An Overview</td>
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<td></td>
<td>by Professor Philip Jones</td>
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<td>Vice-Chancellor, Sheffield Hallam University, UK</td>
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<td>A2-1 Reflection in Learning and Management Training</td>
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| 2.55 – 3.20pm| A2-3
Effects of Teaching Paraphrasing Skills to Students Learning Summary Writing in ESL
Lee Mun Yee & Choy Siew Chee
Tunku Abdul Rahman College, Malaysia |
|              | A2-4
Giving Students the Edge: The Impact of a Student Mentoring Service on a Student Mentor’s Personal and Professional Development
Frances E Colbron & Martyn Stewart
Liverpool John Moores University, UK |
|              | B2-2
Student Perceptions and Explanations of Cognitve Strategy Use in an Unrestricted Blog
Craig Deed & Anthony Edwards
La Trobe University, Australia & Liverpool Hope University, UK |
|              | C2-2
Mission Possible: Widening Access to Quality Distance Teacher Education Through a Win-Win Collaboration Between Open University Malaysia and the Teacher Education Division of Malaysia
Tina Lim, Woo Tai Kwan, Zoraini Wati Abas & Nagarajah Lee
Open University Malaysia |
| 3.20 – 3.45pm| A2-5
Incorporating Authentic Assessment into Different University Learning Scenarios
Lenore Adie, Lisa Hee & Lee Wharton
Queensland University of Technology, Australia |
|              | A2-6
Learning & Teaching Through Youth-Led Initiative Programme in Character Development
Lee Mah Ngee
Universiti Tunku Abdul Rahman, Malaysia |
|              | B2-3
Distance Learning by Webcam: Creating a Flatter World or Just a Bumpier Ride?
Victoria Randall & David Rose
Roehampton University, UK |
|              | C2-3
Involvement in Academic Quality Applications as a Means of Faculty Development
Abdullah Bin Ahmad Al-Dahsh, Al-Sadig Yahya Abdulah & Al-Mutwali Isamil Bidair
Al-Majma’ah University, Kingdom of Saudi Arabia |
| 3.45 – 4.00pm| TEA BREAK & POSTER PRESENTATION |
| 4.00 – 4.45pm| Plenary 2
The Internationalisation of Higher Education – A Business School Case Study
by Professor George Stonehouse
Dean of Business School
Edinburgh Napier University, UK |
| 4.45 – 5.10pm| **Parallel Sessions** |
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**Vocationalisation of Higher Education: Issues and Challenges**  
by Professor Rupert Maclean  
Chair Professor of International Education  
Director of the Centre for Lifelong Research and Development  
The Hong Kong Institute of Education  
New Territories, HK

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| Stephen Kane & Lourdes Ferrer  
University of Guam, USA | Noraaiskin Sabani & Savitri Kurnia  
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A Framework for Higher Education 2.0: 21st Century Education for 21st Century Learners

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Higher education institutions today appear to be somewhat slow in responding to the needs of the 21st century workplace. Fortunately, there is a growing trend among higher education providers who believe in providing meaningful and relevant education to benefit students and to prepare them for an increasingly globalised world. Making use of emerging technologies, they make education exciting, stimulating, fun and enjoyable. The challenge that many educational institutions continue to face today is how to make this paradigm shift. How do we move from the way we know education has been to how education should be? How do we break the mould to becoming something flexible, creative and challenging? An education system that responds to societal needs is a system that will contribute to the future growth of the nation and in view of the various technological developments, the incorporation of technology to support the provision of a learner-centric environment is needed more today than ever before. How does one move from 19th century paradigm of education to 21st century paradigm? This paper seeks to provide a framework for 21st century education and examples of how emerging technologies have been used.

Keywords: Emerging technologies, 21st century education, framework

Introduction

Anyone will agree that the Internet and other ICT developments have resulted in social, economic and political changes. These developments have in turn influenced the education scene. The education landscape is changing as well. There are more than 1.8 billion users on the Internet today and personal ICT devices are becoming more powerful yet increasingly affordable. Between 2000 and 2009, the Internet population grew by 399.3 percent (Internet World Stats, 2010). It is, simply stated, a phenomenal growth that has impacted our daily lives, including the way students socialises with one another and how they are learning.

As Palfrey & Gasser (2008) and Tapscott (1996, 2008) described in their books, the millennials, born after 1980, are a different breed of people, compared with those born earlier: the Xers, baby boomers and silent generation. They have access to networked digital technologies and are very adept in using them. The Millennials are also good in multitasking, are goal orientated, have positive attitudes and enjoy collaborating (Oblinger, 2003). They have an information age mindset where computers are not technology but are assumed part of life, where the Internet is better than television and where doing is more important than knowing, and typing is preferred to handwriting. Furthermore, staying connected is essential and they have a zero tolerance for delays.

Hence, it can only be expected that today’s students are expecting a different set of learning experience thus making it essential for educators to understand the “new” student’s expectation so as to be able to produce the desired learning. Based on the findings by Pew Research Centre (2009) when comparing the generational experience; three-quarters of Millennials have a profile on a social networking site such as Facebook, compared with half of Xers, 30 percent of Boomers and six percent of Silents. Millennials are also regarded as a confident group of individuals, connected and open to change. The millennials (born between 1980 and 2000) make up the campus population today and will continue do so for more than another decade.

As Friedman (2005) pointed out in his book, “The World is Flat,” the world has become flatter as a result of collaborative technologies and the convergence of mobile, wireless, personal or virtual technologies. He listed ten flatteners that have contributed to a flat world (see Figure 1).
Figure 1. Friedman’s ten flatteners (adapted from Bonk, 2009)

However, Florida (2005) contends that as the world becomes flatter, it is also becoming spikier. He observed that these are places in the world that are more economically developed and have skilled workers to help further the economic growth. This implies that as we become more and more globalised, it is possible to leverage on the Internet for one’s economic growth but it is also imperative that we have the required skills to take advantage of other economic opportunities. Interestingly, Bonk (2009) recently explored ten key trends in educational technology that will make education more open and how these are expected to change the education landscape whether we like it or not (see Figure 2).

Figure 2. Bonk’s WE-ALL-LEARN openers

Indeed, as Bonk indicated, web technology is revolutionising education in many ways and it is possible that when Web 3.0 comes around, students will have even more choices in how they seek learning opportunities. Recent developments such Peer-to-Peer University (http://p2pu.org/) and University of the People (http://www.uopeople.org/) are just two examples of new educational “institutions” that may change the education landscape.

Learning in the 21st Century

In many institutions, it can be observed that many educators are slow in adjusting to the daily habits of learners of the 21st century. Today’s learners or the millennials tend to use social networks or new media for communication and information. They also tend to practise a culture of sharing (Wheeler, 2009) and collaboration. Downes (2005) observed that “learning is characterized not only by greater autonomy for the
learner, but also a greater emphasis on active learning, with creation, communication and participation playing key roles, and on changing roles for the teacher, indeed, even a collapse of the distinction between teacher and student altogether.”

According to Oblinger (2003) and Oblinger & Oblinger (2005), it is essential to understand learners such as their learning styles, attitudes and approaches before facilitating learning. She doubts that college and university faculty, administrators and staff understand this well enough when designing programs or courses. The millennial students gravitate toward group activity and are fascinated by new technologies. They have distinct learning styles and lean toward teamwork, experiential activities, structure and use of technology.

![Figure 3. Descriptors of 21st century learning](image)

While some educators today consider the growth of e-learning explosive, others seem to feel that changes made in higher education institutions have been somewhat slow. As a result, learners in higher education institutions today may be ill-prepared for an increasingly interconnected world especially with the transformation of the Internet from Web 1.0 to Web 2.0 (Bonk, 2009; Downes, 2005) and soon, Web 3.0.

Table 1 describes what 21st century learning should be like (see Education 2.0 and Education 3.0) and how 21st Century Learning can be described is illustrated in Figure 3. The latter incorporates use of Web 2.0 tools and where learning consists of going beyond consumption of knowledge or information provided online but also involves communities and connections. Imagine a class of students going online to discuss their thoughts, issues and opinions on selected topics with their course mates as well as their professor. Learning is purposeful and meaningful, suitable for the millennial generation or the “nextgen” group of students.

Connectivist learning as proposed by Siemens (2005) is the new “theory” that best describes learning that is connected, interactive and where learners communicate with each other synchronously and asynchronously anywhere and where ever they are and probably through mobile devices such as smart phones, iPods, iPhones, iPads and other latest inventions. It makes learning fun and the fact is that learners contribute to each other’s learning experiences. It becomes personal in nature, informal and where learners appreciate the transformative approach for millennials.

Learning is on-demand enabling learners to “pull” information, resources or activities into their daily lives. They could be doing this any time using mobile devices. As such, this makes learning ubiquitous. The situation will be such that the learner will find learning a series of engaging activities. Imagine learners being able to watch a YouTube video and post their comments or download a podcast and add their own opinions about the topic in an online forum. It could be a lively debate during which they involve themselves in for a few days perhaps. They could also be playing the role of an infotective, to locate other relevant information before they contribute to forums in a platform such as Facebook or Ning. Learning could be media-driven as exemplified by YouTube videos, slideshare slides or Scribd resources on the Internet. It would be blended learning where a variety of
media, modes or approaches are used. It is more or less like creating a Personal Learning Environment (PLE) for students where learning is better sustained.

Table 1: Educational generations in higher education

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Education 1.0</th>
<th>Education 2.0</th>
<th>Education 3.0</th>
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<tbody>
<tr>
<td>Primary role of professor</td>
<td>Source of knowledge</td>
<td>Guide and source of knowledge</td>
<td>Orchestrator of collaborative knowledge creation</td>
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<tr>
<td>Content arrangements</td>
<td>Traditional copyright materials</td>
<td>Copyright and free/open educational resources for students within discipline, sometimes across institutions</td>
<td>Free/open educational resources created and reused by students across multiple institutions, disciplines, nations, supplemented by original materials created for them</td>
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<tr>
<td>Learning activities</td>
<td>Traditional, essays, assignments, tests, some groupwork within classroom</td>
<td>Traditional assignment approaches transferred to more open technologies; increasing collaboration in learning activities; still largely confined to institutional and classroom boundaries</td>
<td>Open, flexible learning activities that focus on creating room for student creativity; social networking outside traditional boundaries of discipline, institution, nation</td>
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<tr>
<td>Institutional arrangements</td>
<td>Campus-based with fixed boundaries between institutions; teaching, assessment, and accreditation provided by one institution</td>
<td>Increasing (also international) collaboration between universities; still one-to-one affiliation between students and universities</td>
<td>Loose institutional affiliations and relations; entry of new institutions that provide higher education services; regional and institutional boundaries breakdown</td>
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<tr>
<td>Student behaviour</td>
<td>Largely passive absorptive</td>
<td>Passive to active, emerging sense of ownership of the education process</td>
<td>Active, strong sense of ownership of own education, co-creation of resources and opportunities, active choice</td>
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<tr>
<td>Technology</td>
<td>E-learning enabled through an electronic learning management system and limited to participation within one institution</td>
<td>E-learning collaborations involving other universities, largely within the confines of learning management systems but integrating other applications</td>
<td>E-learning driven from the perspective of personal distributed learning environments; consisting of a portfolio of applications</td>
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Learning is never dull for it never stays the same. It is fun, dynamic and participatory where every learner is involved in some way without feeling any form of threat. They feel safe and welcomed in voicing their opinions or in creating and sharing resources. Their lecturers or tutors are true facilitators of learning knowing when to guide, correct, encourage, motivate and promote learning. It may require learners to multitask such as reading or writing, presenting or listening and doing different things at different times to enrich the learning. This in turn optimises the preferred learning styles of students. There are plenty of opportunities for experiential learning.
largely based on a social-constructivist mode where peer-to-peer learning takes on a larger role. It is e-learning at its best. There is authentic learning, possibly using mobile and portable technologies and where learning can be sustained throughout the entire course. There is never a dull moment and, at times, learners would have opportunities to reflect on their learning experience or the new knowledge gained. Students will be appreciative of how learning can be enjoyable and fun at the same time.

Based on how web technologies have evolved and how they will impact on how education has and will progress, Keats and Schmidt’s (2007) comparison between Education 1.0, Education 2.0 and Education 3.0 is interesting. Just looking at the role of the professor alone, Education 1.0 is characterised by a one-way process with the professor is the source of knowledge. Going into Education 2.0, the professor is both facilitator and a source of knowledge. In Education 3.0, the professor orchestrates the creation of collaborative knowledge. In contrast, the student is largely passive and is mainly an absorber of knowledge (Education 1.0). In Education 2.0, the student is provided with a learning management system through which learning resources are provided and some of the learning activities take place. In Education 3.0, the student’s learning is driven by a perspective of personal distributed learning environments with a portfolio of applications. Table 1 shows a comparison of the three generations of education based on Web 1.0, Web 2.0 and Web 3.0, respectively.

Framework for Higher Education 2.0

21st Century Curriculum

Clearly, a 21st century Curriculum needs to be introduced. It is the first set of Cs in the framework. As highlighted earlier, Friedman’s ten flatteners have had a large influence in how the world has changed and functions. During the 21st Century Summit, a meeting of leading authors, researchers, policy makers, educators and artists from around the world, recognised that the world is not only changing but becoming smaller and that it is similarly experienced in countries across the globe (New Media Consortium, 2005). It was noted that there was a need for 21st century literacy, a new language that needs to be put in place in many aspects of society, including education. In particular, 21st century skills and methods must be in schools and universities to use the natural talents of the millennials to help them become better and more effective communicators.

Figure 4. 3 C’s Framework for Higher Education 2.0

Succeeding in the 21st century is a must and all those in higher education who are concerned with preparing students to succeed in today’s world must develop ICT proficiency among their students. And given the developments of ICT technologies in general and Web technologies (Bonk, 2009) in particular, the demands of employers as a result of and social, economic and political developments, and especially on how well these have impacted on the daily habits of the millennials, education must change. It was also noted (New Media Consortium, 2005) that 21st century literacy has the potential to transform the way we learn, and if properly applied, learning is pleasurable and happens more rapidly.

Connected learning approaches

To remain relevant, institutions of higher learning must change or become phased out. Is this why some of the older elitist institutions have moved from traditional ways of teaching to the provision of podcast lectures (see Academic Earth at http://www.academicearth.com/), OpenCourseWare (see MIT OpenCourseWare at http://ocw.mit.edu/index.htm) with more than 2,000 of its courses online, and Carnegie Mellon University through its Universal Digital Library project (see http://www.ulib.org)? They not only have strong Web learning presence but are well-acknowledged by the education communities who believe in keeping up with the needs
and requirements of the 21st century. It appears that soon, learning means having access to such a wealth of resources. Or, in the words of Elliot Massie (in Bonk, 2009), fingertip knowledge, that is, knowing how to access information will be more important than memorising information.

The iPods, iPhones and iPads have and will continue to revolutionise education and learning. It is “learning on the go” or having a “teacher in the pocket.” Universities such as Drexel, Duke and Oklahoma Christian University have given away such mobile devices to their freshmen. Connecting their students to learning resources, podcasted lectures appear to be the right thing to do. It is about having a second “C” in the form of “Connected learning approaches” for 21st century learning.

Competent teachers and students

The primary facilitators of learning are the professors who will no doubt need to be competent in the preparation of learners for the 21st century and using new media appropriately. They need to be able to engage their students in the learning process and activity, and they need to instil joy and fun in learning. Learning must be collaborative and participatory and learners need to be provided the opportunities to create and be active in the learning community. The strengths and personal preferences in terms of media and learning style of the Millennials should be appropriately met. The various modes of learning must be well-supported by professors. Losing one’s authority as the “sage on the stage” may be uncomfortable as he or she moves towards adopting the role of being a “guide on the side.” Competency is the third “C.”

Summary and Conclusion

The paper has proposed and highlighted the need for the 3Cs framework for higher education 2.0. It is expected that institutions will be able to cater to the millennial generation and ensure relevance in today’s world. The primary responsibility of higher education institutions is to prepare students to succeed in the real world and being able to connect and engage in an increasingly globalised and networked world is key. In view of devices that are increasingly mobile, portable and inexpensive; and where connection to the world is one huge wireless environment, seamless, quick and easy, it is timely for institutions today to also consider the adoption of digital learning resources or platforms for personalised learning. Learners will benefit. Professors will find it challenging at first but more meaningful and rewarding later. Ubiquitous learning or u-learning will soon result from this approach to learning. It is “learning on the go” taking place at any time and at any place, yet purposeful and meaningful for the 21st century.

References


PLENARY 2

The Internationalisation of Higher Education – A Business School Case Study

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The internationalisation of higher education is widely stated as being the single most dominant trend in the sector at this point in time (Altbach P and Knight J, 2007). Yet, what do we mean by internationalisation? How would we know it if we saw it? What is good practice in internationalising higher education and how do we set about internationalising our institutions. This paper, which draws upon 20 years of experience of working to internationalise business schools, clarifies the definition of internationalisation of higher education, identifies its key dimensions and examines how the barriers to internationalisation can be overcome. Evidence is drawn from the literature and from a case study of a UK business school in order to identify, analyse and understand the key issues involved in internationalisation.

(Full paper is not available at the time of printing)
Historically, vocational education (TVET) and higher education emerged from opposing traditions, with the university producing systematic scientific knowledge and vocational education focusing mainly on providing training for specific occupations. That relationship developed over time with socio-economic considerations influencing the process.

There has been a shifting landscape of higher education and vocationalisation in the post-industrial era. This presentation will examine trends over the past two decades towards massification and vocationalisation in higher education, with particular reference to how knowledge is generated, organized, and disseminated, a major influence being the move from the industrial age to the information age, and an increasing emphasis on the education of knowledge workers.

A key consideration is the so-called triple helix: that is, the changing relationship between the higher education sector, industry and government.

(Full paper is not available at the time of printing)
PLenary 4

A Global Language for Global Universities? Language in Higher Education

Professor Janina Brutt-Griffler
Director of Polish Studies
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Although higher education today takes place in increasingly multilingual societies, academic life has experienced the tendency to become more dominated by a handful of languages, principally English. In an age of globalization buffeted by strong nationalist cross-currents, the designation of a language of instruction in higher education constitutes a contested political decision fraught with very practical results. In this plenary, I examine the factors providing the impetus behind the use of English or another international language as opposed to national or regionally dominant languages. Does that choice represent a function of pragmatic considerations, ideological forces, the preservation of elite privilege, or a combination of all of these factors? Drawing on data from two major language policy projects—a study of language policy in the European Union, with a specific focus on Poland, and one on the rise of national languages in postcolonial states—I will consider the emerging trends and conflicting imperatives in operation in higher education across different societies. I will also discuss the potential impact of language policy on academia globally and within individual nations.

(Full paper is not available at the time of printing)
Collaborative Action Research for Developing Effective Instructional Strategies Aimed at Improving Study Skills Among Higher Education Students

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Six instructors and 84 undergraduate and graduate students participated in a project that had three aims: to develop the instructors’ ability to conduct collaborative research; to develop and implement activities that promoted effective study skills among students; and, to investigate effects of project activities on instructors and students. During an initial planning phase, instructors developed a plan for enhancing students’ study skills; rubric criteria for evaluating students’ study skills were developed. During the next phase, each instructor played the role of reflective practitioner within her own class. In a third phase each instructor made notes on events in her own classes, and in other team members’ classes. Students also reflected on the classes by making handwritten entries in personal journals. Artifacts, in the form of student-generated works during classes, and student journal entries, were also examined. After teaching sessions, students met and reflected on teaching and learning activities, especially on the extent in which these had improved their study skills. Instructors increasingly became willing to share their changing views on what constituted best practice in classrooms. Peer observation and post-action reviews were especially powerful in improving instructors’ abilities to upgrade tacit knowledge to explicit knowledge. The instructors created a synthesis of their developing knowledge on which methods were most effective for enhancing study skills. Eight instructional strategies that contributed to effective study skills were identified: modeling, searching for answers to specific questions, tasks and assignments, learning by doing, practice, reflecting, evaluating from shared criteria, and exchanging ideas and knowledge.

Keywords: Collaborative Action Research, Study Skills, Higher Education, Community of Practice

Introduction

Chiang Mai University (CMU) is a large regional university in Northern Thailand. In addition to standard academic courses, it offers interdisciplinary study programs aimed at encouraging students in different faculties to integrate knowledge. The University encourages lecturers to adopt an across-the-curriculum way of thinking which would be likely to prepare students to become independent and analytical thinkers. By this approach, CMU hopes to generate reflective and productive graduates who will lead Thailand into the future.

This paper describes an episode in which collaborative action research approaches were developed and applied by a team of CMU instructors who participated, on a voluntary basis, in an action research project. Members of the action research team (ART), who were from various disciplines, pooled their efforts and resources with the aim of solving relevant problems through developing and sharing rich instructional materials, and using collaborative teaching strategies. A key aim was to enhance students’ study skills so that students would be better able to achieve academic goals in individual courses.

At initial meetings of the ART, the scope of the research to be conducted was discussed. Through discussion, research team members realized that they shared a common problem: many of their students lacked effective study skills, particularly in relation to searching for information and locating resources that would help them extend their knowledge base in required ways.
Often:
- Information that the students acquired through their own efforts was minimal, irrelevant, or out-of-date.
- When reading, students found it difficult to identify and focus on key ideas.
- Notes that students took while reading were typically not well organized and did not include valid and complete references. As a result, when students came to the stage of writing up findings, they experienced difficulty because what they tried to write was not based on a well-organized outline.
- Word choices and terminology were inadequate.
- Sentences lacked precision and were not well connected with the content.
- Paragraphs lacked internal coherence.
- Citations and reference lists were incomplete.

More seriously, the students’ written presentations often lacked focus, and did not address the main ideas that they had been asked to consider. Statements were long-winded, and therefore did not communicate effectively.

If media other than written statements were incorporated, then often these were not well designed and did not communicate the main messages. When making verbal presentations to others, many students were not articulate and did not answer the questions that they were expected to answer. In many cases, their voices were too soft and they failed to make eye contact with the audience. From the perspective of content, it was often the case that verbal presentations were neither elaborated nor linked with key issues, and did not answer questions that they had, specifically, been asked to consider. Moreover, references to relevant theories or principles were not given in appropriate form.

Members of the ART decided to develop a collaborative action research approach that had three aims: to develop the instructors’ ability to conduct collaborative research; to develop and implement activities that promoted effective study skills among students; and, to investigate effects of project activities on instructors and students. An early ART decision was that team members should begin to research their own teaching. We decided that we should begin to do this by consciously teaching topics from documented theories rather than purely from our own experiences – we believed that this would be more likely to generate research-based instruction, so that not only would our instruction be more effective, but also students would become more aware of implications of research for teaching. In particular, we wanted to produce graduates who had acquired desirable knowledge, understandings, attitudes, and values, from their participation in CMU classes.

**Brief review of literature**

There is a long history of attempts to assist students, especially higher education students, to develop approaches to the learning process that would enable them to study more efficiently and effectively. One of the most influential methods was put forward by Elshout-Mohr (1983) who, working within the Center of Research into Higher Education (COWO – initials based on the title of group of the Center in the Dutch language) at the University of Amsterdam, used a bottleneck metaphor to account for difficulties that students experience when studying. Elshout-Mohr claimed that COWO training assisted students to anticipate and deal systematically with difficulties that would hold them back from performing academically at their highest possible levels.

Cottrell (2008) has consistently argued that study skills should maximally enhance personal, academic and professional development, and that this development should continue throughout someone’s working life. Many universities across the world have implemented programs intended to assist students to monitor their growth as lifelong learners. These schemes have been developed in response to academic, business and political pressures to make sure that education courses equip students with skills that will transfer to contexts outside of formal education structures.

Despite the fact that some writers have claimed that attempts to improve study skills have not been well designed, scientifically carried out, or well documented (Wingate, 2006). In the study summarized in this report, the approach to defining and developing study skills put forward by Cottrell was adopted.

**Conceptual framework**

**Action research**

There are many definitions of the term “action research” in the literature. Thus, for example, Wiratchai (2005) defined action research in terms of an individual’s efforts to increase his or her efforts to improve performance
on a particular type of task. Kember and Gow (1992) argued that action research was an attempt on the part of the researcher to improve his/her own teaching according to the “Plan, Act, Observe, and Reflect” (PAOR) operational cycle, suggested by Kemmis (1988). This cycle has been widely accepted by school teachers, but not so much at the university level – although it has been universally accepted as an effective mechanism for personnel development (Kember & Gow, 1992). Sebatane (1994, cited in Wongwanich, 2009) proposed an approach to classroom action research based on a teacher’s experience. Some teachers who wanted to “pool their efforts” might choose a collaborative approach using the PAOR cycle. Action research jointly conducted by members of a team of researchers has been called collaborative action research (Bennet, Forman-Peek, & Higgins, 1996, cited in Wiratchai, 2005).

In collaborative action research, a team of researchers follows the cyclical PAOR processes with the aim of improving each component through teaching. This cyclical process, which can assist learners to achieve cognitive, affective, or psychomotor improvement, is illustrated in Figure 1, which was constructed by the ART.

In the present study the conceptual framework shown in Figure 1 was applied to a study involving six researchers. All six were based in CMU’s Faculty of Education, and each taught one course in which the students became participants in the project. Altogether, 84 students were enrolled in these courses. At the first team meeting the six lecturers talked about their teaching problems and shared an interest in improving and developing their students’ study skills, especially in relation to four sub-skills: (a) presentation, (b) academic discussion engagement, (c) knowledge search, and (d) academic writing. After the goals had been set, the team determined to follow a collaborative action research approach, based on procedures outlined by Kemmis (1988), for the purpose of reaching project goals. The research was spread over one semester, and the process of collaboration was applied to allow the six participating lecturers to combine their efforts in designing a study that, above all else, sought to develop their students’ study skills.

Figure 1: Research conceptual framework.

The six ART participants did not agree to teach in exactly the same way. Indeed subsequent data collection would reveal that a variety of teaching and learning approaches, activities and methods were used during classes. It was nevertheless an object of the study that it would generate a general model for teaching and learning that would be useful for developing students’ study skills. It was intended, from the outset, that the action research process would not only enhance the participating lecturers’ ability to involve students actively and positively in the learning process, but would also result in the improvement of students’ academic achievement.

Research procedures

Action research participants

As stated previously, the participants in the study were six CMU lecturers who taught within the Faculty of Education, and a total 84 students enrolled in six classes. Four of these were undergraduate classes, namely, 052306, “Teaching the Thai Language” (25 students), 065433, “Teaching and Learning School Geometry” (7 students), 073414, “Teaching and Learning French Grammar” (10 students), and 076415, “Instructional Development in Business Education” (23 students). Two of the classes were at the postgraduate level, namely 065772, “Development of Curriculum and Instruction Materials Regarding School Algebra and Calculus” (12 students) and 067720, “Teaching Thai as a Second Language” (7 students).
Forms of data

The research artifacts and instruments included lecturers’ post-teaching written reflections, notes made by students during classes, other student written work, comments on “Teaching Observation” forms, and student focus-group discussion notes.

Research design

The planned research design was based on the three procedural stages:

1. **Planning stage:** At this stage, participating lecturers collectively discussed and made decisions regarding the scope, sequence and content of study skills relating to presentation, academic discussion engagement, knowledge search, and academic writing. They also developed an instructional model and criteria for assessing students’ study skills.

2. **Teaching stage:** At this stage, each participating lecturer taught her own classes, and ART members activated the four plan-act-observe-reflect (PAOR) steps. A cycle was repeated if this was needed. Data were in the form of post-teaching reflections, notes made during observations, students’ written work, and students’ learning notes. As planned, during teaching classes, other lecturers took turns in observing and making comments. Each lecturer observed two classes other than her own. It was followed by four ART meetings for reflection on the teaching and learning that had been observed, and for sharing teaching and learning activities. At the conclusion of each course, a student focus group discussed the classes in which they had participated and made recommendations for enhancing student study skill development.

3. **Synthesizing stage:** The participating lecturers reflected on their performance and jointly synthesized the strengths and weaknesses of the learning and teaching activities so far as they had enhanced student study skills.

Developing and Using Rubrics for Assessing Student Development of Study Skills

In order to be in a position to decide whether improvement in key aspects of study skills had been achieved it was necessary not only to identify what those key aspects were, but also to develop a rubric which would enable a student’s situation with respect to those aspects to be measured. The ART identified four key aspects of study skills: searching, presentation, discussion, and writing. Components of these key aspects were elaborated by the ART, and then appropriate rubrics were developed.

Four components skills associated with searching were choosing and using resources, searching for information, making conclusions and rewriting, and referencing. Five key aspects of PowerPoint presentation skill were defining content for each frame, choosing and using key words to assist explanations, creating interest in the presentation, sequencing, and the personality projected by the presenter. Four key aspects of discussion were sharing, deciding upon the main theme and argument, questioning, and rationale and reasoning. Four key aspects of writing were information, use of language, focus and relationships, and choosing resources and references.

For each component skill four-level rubric descriptions were created. For example, the rubrics for the four key aspects of writing are shown in Table 1 (which was developed at ART meetings).

| Table 1 Rubrics for Key Aspects of Study Skills for Writing |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Level                      | 1                           | 2                           | 3                           | 4                           |
| **Key Aspect of Writing**  | **Writing**                 | **Information**             | **Use of Language**         |                              |
| 1. Information             | Neither the key concepts nor relevant information are well defined. | A key concept is partly defined. Information relating to concepts is not given. | A key concept is reasonably well defined, and some information relating to concepts is given. | Key concepts are well defined. All important information for key concepts is given. |
| 2. Use of Language         | Language (e.g., academic terminology), is not correctly used. Sentences are not well expressed. | Some language and terminology are correctly used, and sentences make some (but not complete) sense. | Language and terminology are well used. Sentences are well formed and meaningful. | Mastery of language and terminology is evident, and sentence construction is of a high standard. |
Sub-theme A: Methodologies and Strategies in Learning, Teaching and Assessment

3. Focus and Relationships

| Format chosen did not suit the content and did not help develop focus and relationships. | Format was sometimes suited to content and helped develop focus and relationships. | Format was mostly suitable for content, and usually helped develop focus and relationships. | Format was well suited to the content, and helped develop focus and relationships. |

4. Resources and References

| No easily accessible resources were mentioned, and useful references were not cited. | Resources were only vaguely described, and only one reliable reference was cited. | Resources were useful and two to three reliable references were cited. | Useful resources were mentioned and four or more reliable references were well cited. |

Research findings

The findings revealed that:

1. The lecturers developed their capacity to engage profitably in collaborative action research. They shared their learning experiences freely in an atmosphere of trust and teamwork, and became a supportive community of practice. By employing three main strategies – peer assistance, learning through practice, and post-action review – they were able to transform their tacit knowledge into explicit knowledge.

2. The following instructional model for promoting student study skills in presentation, knowledge searching, discussion, and academic writing (see Figure 2) was developed by the ART:

![Figure 2: The instructional model developed for promoting student study skills.](image)

The model, which arose through reflections on the process of carrying out the research and through ART discussions of findings, synthesized findings with respect to developing students’ study skills in four aspects: (a) Knowledge searching, (b) Academic writing, (c) Presentation, and (d) Discussion.

The processes used to develop the student’s study skills covered the following eight components:

1. Models of scholarly behaviour were to be illustrated by the teachers, through preparation of scholarly content, challenging and motivational teaching styles, and by facilitating teacher-student peer learning;
2. Knowledge search, was to be encouraged through the use by ART members of various sources such as lectures, class activities, learning media, consideration of special cases, handouts, information provided by knowledgeable persons, and internet searches;
3. Assignments were prepared that paid due attention to duration, the learning processes, expected learning outcomes, and quality control;
4. Learning-by-doing was built into all activities. This enabled students to develop themselves through self-directed learning, self-monitoring, and self-care;
5. Practice was provided along a planned sequence with regularity, continuity, and improvement;
6. *Reflection* on the principles of two-way communication, regularity, continuity and motivation, was built into the instructional processes;
7. *Assessment/rubric development* was aimed at achieving authentic assessment, and feedback; and
8. *Sharing and exchanging* learning through experience and documented knowledge as well as resources on the bases of participation and group work in supportive, positive learning atmospheres, was to be a normal part of learning processes.

Analyses revealed that students showed development in study skills related to each of Presentation, Discussion, Searching, and Writing. Figure 3 shows mean scores for the four study skills at the times of the first and last assessments. For each study skill, scoring was based on the 1 to 4 scale illustrated in Table 1, with a mean score of 2.5 being regarded as “average.”

![Students’ study skills mean score in 6 courses](image)

*Figure 3*: Summary showing (first- and last-) mean scores of student study skills – aggregated for the six courses.

Figure 3 points to the Project generating student growth for each of the four study skills. The improvement was largest in Knowledge Searching (34.5%), followed by Academic Writing (28.5%), Academic Discussion (27.3%), and Presentation (20.4%). Although “Presentation” had the lowest percentage gain, the student’s presentation skills for the first and last assessments had the highest mean score increase of the four aspects.

**Discussion**

The research findings could be summarized as follows:

1. Engagement in the research process developed the participating lecturers’ capacity to conduct collaborative research and upgraded their tacit knowledge about action research to explicit knowledge. The collaborative action process opened the participants’ minds to the point that they were able to recognize and conceptualize classroom problems in systematic ways, and were able to conjecture and apply solutions to those problems. In particular, the process on after-action review forums, focus group discussions, sharing, and critical reflection contributed to the success of the program. The results were consistent with findings of Cardelle-Elawar (1993), Clift, Veal, Johnson and Holland (1990), and Miller and Pine (1990).

2. Before the research started, the researchers had found that their students lacked skills in reading and writing academic works. This was attributed to their unwillingness to engage in knowledge searching, which affected their ability to share the results of their learning effectively, particularly through class discussion. Although this unwillingness was not something that the teachers had been greatly concerned about, it nevertheless adversely affected the quality and extent of their students’ learning. The students did not know how to search for knowledge by themselves. After much discussion, research team members defined “needed study skills” which took into account four dimensions: (a) presentation, (b) academic discussion, (c) knowledge searching, and (d) academic writing. After defining four key study skills, the research team members then set goals relating to each of these study skills and developed criteria for assessing each skill through four-level
rubric scales, which measured students’ behaviors from minimal to maximal levels. The researchers then designed learning and teaching activities on the basis of the mutually-upon goals. Each lecturer designed her own instructional activities to fit the specific context of her course. Proceeding from this goal-oriented principle, the research participants worked inductively toward desired outcomes, integrating and synthesizing them in the eight-facet model. This model incorporated real-life classroom emphases, and student focus group discussions occurred in all six courses. That the lecturers tried to teach in ways consistent with theories and principles that they themselves espoused was evident in discussions when they referred to the writings of John Dewey, and to self-directed learning, observational or modeling learning, learning styles, reinforcement provision, and assessment based on the development of clear rubrics. Application of these theories, regular feedback, and collaborative discussion of data and findings, led to the personal development of each lecturer involved in the project.

3. Collectively, the students’ study skills improved in each of the four main aspects. The fact that the Knowledge searching skill gained the highest increase could be attributed to three factors. Firstly, direction provided by rubrics, the positive feedback, and the reinforcement provision in the assessment processes. This satisfied the students’ need to know how well they had learned, and to encourage them to attempt to improve themselves. Secondly, the students’ willingness to monitor their improvement increased their self-awareness and helped them create realistic goals for capacity development. And, thirdly, the students’ learning which occurred as a result of their observing their peer’s performance equipped them with information that could be used in their own self-improvement. They avoided repeating mistakes made by their peers and noted suggestions made by lecturers.

References

Developing Generative Learning: Spirals of Action and Assessment

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This paper reports on two qualitative case studies which explored the relationship between curriculum design and assessment of and for learning. It considers the distinctiveness of the design of a curriculum that develops generative learning where the role of assessment for learning is seminal to perspective transformation (Mezirow, 1991). A longitudinal case study approach was adopted where the case was an advanced professional development programme. Data were collected from multiple sources for triangulation and included semi-structured interviews, participant observations and documentary evidence. Data were analysed by grounded theory (Charmaz, 2003) and used to tell the participants’ ‘story’ through presentation of vignettes. A social constructivist conceptual framework was used to explore the learning goals for a professional development programme and how these might be achieved through curriculum design. Within this conceptual framework the role of feedback in developing generative learning for expert professional learners was also explored. Spiral-like structures of course-based assessment activity are presented as a powerful way to gather, analyze, disseminate, and use course data to improve student learning, and to support the goals for higher level complex professional learning.

Keywords: Formative assessment, spiral curriculum, generative learning, professional development

Introduction

von Glasersfeld (1989) suggests individuals must construct their own view of the world to understand, predict and control their environment. Knowledge cannot be entirely derived through copying and replicating, but rather is dependent on individual structuring of experiences through active interaction with the environment. As Bruner observes ‘it is a grave error to locate intelligence in a single head. It exists...in the heads and habits of the friends with whom you interact’ (1996, p.154). However, a professional development programme must also empower individuals to achieve the necessary goals that relate to its purpose, possibly generating tension between programme learning goals and learner’s needs. Careful and sensitive organisation of learning might minimise these tensions over the duration of an advanced professional development programme.

One might assume that providing high quality formative assessment leads to raising the standard of the academic activity for each individual (Black & Wiliam, 1998) and is in some way representative of both learner cognition and insights from a more skilled tutor (Brown & Knight, 1995, p.112). Higher education strategies for sharing learning goals and dialogue leading to expectations of self-assessment may not ensure that the range of opportunities afforded by formative assessment processes are realised. There may be more complex interactions and reactions occurring when the learning context involves both higher cognition and situated professional learning (Lave & Wenger, 1991).

Formative assessment leading to evaluation in professional learning contexts will need to provide not only an assessment product as information, but also maintain (and possibly increase) sources of motivation, inspiration and promote further critical reflection. In this paper the assessment product as information for the student is
referred to as ‘feedback’. Unless feedback is accessible to the recipient in language, meaning and intent it may not achieve its potential and some learning goals may remain unrealised. This paper considers how the design of a curriculum and the organisation of pedagogy, particularly the role of formative assessment, on an advanced professional development programme at a UK university, empower learners’ attitudes, values and beliefs to foster generative learning.

Conceptual framework

The research was located within a constructivist, interpretivist approach to human inquiry (Schwandt, 1998) allowing study of a group of professional educators, who had their own perceptions of who they are and how they see themselves professionally. Answers therefore lay in our interpretations of participants’ responses, given according to personal constructions of the world. Holding this position determined the nature of data collection methods and analysis, putting less emphasis on empiricist social science frameworks, which omit ‘intersubjective, common meanings’ (ibid, p.225).

Brookfield identifies six principles of facilitation for adult learning: ‘voluntary participation, mutual respect, collaborative spirit, praxis, critical reflection, and self-direction’ (1986, p.ix). These six principles, close to our views on learning, were noted following early observations of the professional development context. We believed that theory and practice should be integrated (Williams, 2001). Transformative learning and reflection (Cranton, 1996) provided a theoretical model against which to contrast and affirm the views of participants.

Learning goals for a professional development curriculum

Advanced professional development might aim for learning to become transformative (Mezirow, 1991) and generative (Bruner, 1996). Transformative learning assumes learners interpret experiences in their own way based on perceptions grounded in their own culture. Mezirow (1991) defines these interpretations as meaning perspectives. Learners prefer to remain within their meaning perspectives to avoid anxiety and loss of self-confidence, but this inhibits generative learning (Williams, 2001), so professional development curricula must provide opportunities to challenge learners. Knowledge construction is a generative learning process involving active integration of new ideas or a hypothesis where more elaborate structures are built on the learner’s existing experiential knowledge. Generative learning is accomplished through engagement in real-life problem-based learning (ibid) and so learning needs to occur across a range of environments.

Feedback: a different perspective

Assessment design and resulting feedback processes reveal the concepts of learner and learning, and therefore will differ from discipline to discipline, and across learning designations, levels of cognitive complexity or purposes of learning. Aspirations for advanced professional learning as described above imply a feedback system which has generative possibilities for learners. Simplistic interpretations of feedback suggest components that verify and elaborate or a habituated relationship between actions and reinforcement. These conceptualisations neglect the idea that feedback may contain information about performance as an element to shape future behaviour, changing cognitive as well as social behaviour.

Constructivist approaches to teaching and learning suggest that learning and teaching experiences provide psychological tools with which learners formulate and test hypotheses, draw conclusions and inferences, and pool and convey their knowledge in a collaborative learning environment. This interpretation transforms feedback from passive receiving of information to negotiation as part of the learning process, with the potential to motivate, inspire and promote further critical reflection. Feedback is a means by which the learner judges their academic attainment (‘how am I doing?’) and themselves as an identity (‘do I fit in here?’).
should cultivate new, or increasingly critically reflective or theoretically based understandings of old knowledge (Sadler, 1998).

Can feedback have generative possibilities when conceptualised not as an isolated component but as a social and cultural practice? A design for generative learning should give information about past performance linked to future effort, be actively used to refine future activity, give experiences which develop capacity for learning, by learning about learning rather than attainment.

**Design and methods**

The context of these studies is a fulltime Masters programme for literacy teacher educators at a UK university where academic activity and fieldwork are juxtaposed. Case studies of an advanced professional development programme were undertaken where both researchers had shifting and evolving responsibilities in facilitating participants’ learning, moving between and from the complete to participant-observer. Having insider status aligned well with our constructivist-interpretivist (Schwandt, 1998) stances as researchers, providing opportunities for validation that may not otherwise be possible from a single perspective. Cases primarily explored how the curriculum achieved its goals of developing generative learning, established in an earlier study (Taylor, 2003), and what was distinctive about curriculum design. Design of assessment systems and assessment practices for elements that strive for higher cognition and transform the way in which course participants learn were also explored.

**Participants**

All course participants over three years in the case study setting were selected through naturalistic sampling (Ball, 1993). Sixteen course participants and three course leaders formed the sample. Course leaders’ views alongside course participants were considered important as their responsibilities implied a long-term picture of the professional roles participants were being prepared for and therefore they had an awareness of what the professional development curriculum needed to achieve.

**Data collection**

Naturalistic observations were conducted to gain understanding of how generative learning was facilitated through pedagogy and curriculum design. The programme continually linked theory and practice, reflected in the learning environments which included seminars and workshops at a university, and fieldwork in education authorities at both school and authority level. At the university a one-way viewing screen was used regularly for teachers and group members to teach for colleagues. This assisted learning by enabling analytical observation followed by group discussion in which participants were helped to critically examine both pupil behaviour and teacher responses with respect to theory being studied. Observations were conducted across all learning environments during the programme and afterwards once participants had moved into their new professional roles. Field notes were written as theoretical notes in-situ and included verbatim dialogue relevant to understanding curriculum design and course participants’ learning. Notes were reviewed regularly to develop foci for interviews, analysis and interpretation, and subsequent observations and interviews.

Observations were complemented by semi-structured interviews to aid ‘confirmability’. A plan for each interview was prepared using general ideas taken from previous data collection. Interviews were timed to align with points of formative assessment across the year. Previous course participants were also interviewed to investigate how the experience of giving and receiving feedback during the programme impacted their learning and development of professional skills in their new professional roles. Participants were also interviewed as they moved into their new professional roles at the end of the data collection period to take into account perspectives at the end of the professional preparation year before compiling this interview schedule. A focus group interview with course leaders gained perceptions of how feedback was used for learning and its impact on course participants. All interviews were audio recorded and transcribed.

Documentary evidence included the course handbook detailing the curriculum, pedagogy and assessment requirements; schedules of content and conceptual learning goals; written participant evaluations, and extracts from reflective portfolio items written by course participants as part of their course work. Written and oral feedback was generated by both written and practical learning activity during the programme.
Data analysis, interpretation and presentation

Pidgeon (1996) explicitly links case study design and grounded theory approaches to data analysis and this combination was adopted to explore the curriculum and the role of feedback. A constructivist approach to grounded theory that ‘reaffirms studying people in their natural settings and redirects qualitative research away from positivism’ (Charmaz, 2003, p.251) was used to analyse data in cycles, searching for common themes and emergent theory, reflecting constant comparative methods so that as new themes emerged, these informed the foci for subsequent interviews, observations and documentary analysis.

Vignettes from observations and interviews were selected as a reporting device. Initial analysis identified emergent general categories, coding categories and their sub-categories. New concepts and categories emerged within each cycle of data collection and analysis, and relationships between these concepts and categories developed as an iterative process. Category analysis helped identify commonality across data. Triangulation was achieved by comparing data across multiple data sources and participants. Data collection was completed once theoretical saturation (Strauss & Corbin, 1998) had been achieved. All participants were given pseudonyms.

Curriculum design

Developing critical reflection in learners and aiding appropriation of learning (Ash & Levitt, 2003) are important goals for planning advanced professional learning. Generative learning is difficult to achieve, and much professional development does not aspire to achieve such goals (Argyris, 1991). Curricula must be carefully planned to provide opportunities and experiences that allow learning to become generative and data suggested a spiral curriculum design.

A spiral curriculum allowed themes and concepts to be integrated and revisited continually in increasing levels of complexity, generality and abstraction. New learning is related to previous learning and learners should have increased cognition and skills that are generative in nature (Figure 1). Whether learners have developed generative learning enabling them to problem-solve and make decisions in novel situations, might be judged at the end of a programme by the increased cognition; further developed skills, and changes in learner attitudes, values and beliefs. In a spiral curriculum ‘content is so presented that its utility becomes as obvious to the student as it is to the teacher’ (Kabara, 1972, p.315). Learning through a spiral curriculum is not ‘an easy journey…and they [course participants] have to travel on faith a bit…they have to suspend their irritation of not having it all until you get them to a point, and they do…where they start to feel how this relates to this and this relates to this’ (Eileen, Course Leader Interview). Perhaps the justification of this discomfort is that initially ‘we have a bigger perspective of where we have to get them to and where they go from here’ (Helen, Course Leader Interview).

![Figure 1: Spiral Curriculum (Taylor, 2006)](image-url)
Revisiting themes and concepts

Revisiting themes was achieved through a diverse range of planned curriculum experiences. Course participants came to recognise how themes were revisited and valued opportunities to do so. Frances explained how: ‘we covered a lot of ground in a shallow way this term, which is nice’ and Pat confirmed: ‘spiral learning again…I felt I needed it’. For generative learning to occur it is insufficient to revisit themes in a spiral fashion per se, but rather themes and concepts in a spiral must be revisited with increasing levels of generality, complexity and abstractness.

Linking new and previous learning

A key feature of a spiral curriculum is that within each learning cycle, new learning builds on previous learning so that ‘as new knowledge and skills are introduced in subsequent lessons, they reinforce what is already known and become intertwined with previously learned information’ (Dowding, 1993, p.20). Frances valued how new learning was linked to previous learning and observed ‘…everything pulling together as the year’s gone on…you start making the links for yourself’. Course leaders Sharon and Eileen began some of their sessions by explicitly asking course participants to reflect back on previous experiences and understandings: ‘I want you all to reactivate your thoughts on…Brainstorm your experiences of…’, and: ‘Refer to your notes from previous observations of…’. In both instances, course participants were asked to consider their experiences so that Sharon and Eileen could use these experiences and understandings as a reference point for course participants’ new learning. Later, Sharon checked course participants’ previous learning and understanding and following a response from Frances, proceeded to develop and build on this previous knowledge.

Increased generative cognition

Frances acknowledged what is achieved by the end of the fulltime year is: ‘like a minimum proficiency really’ acknowledging that his learning would continue to develop beyond the professional development programme and thereby demonstrating an understanding of the generative nature of learning on the programme. Equally, Michelle, another course participant explained how their: ‘understanding…was challenged and stretched’ acknowledging how these challenges aided their learning to reach deeper levels of complexity with their ‘knowledge base increasing apace’.

Assessment cycles

Distinct feedback tools emerged from the data. Complexity was increased through the six categories of Directing, Acknowledging, Mirroring, Visioning, Probing, and Feeding Forward in terms of learner action and cultural embeddedness. Directing is low-level information, which clearly and specifically indicates a practical action. Acknowledging does not refer to effort alone, but specific academic and professional skills. For example, as an assessment task goes through successive formative assessment points, clear examples that will resource writing at a later stage are acknowledged. Mirroring has the function of demonstrating to the learner an external interpretation of their activity. For example, feedback could reflect back to the learner the current communication or status of their work. Its role is to make clear that there is a gap but entrusts the individual to identify and take the action needed to fill that gap. Visioning builds independence by elaborating on the goals and practical utility of the task and shaping the way that course participants approach the task in future. Probing focuses on challenging thinking and is intended to promote further thinking about how a particular aspect of the learning goal might be achieved. Probing is a more complex tool than Directing since it demands the learner to make links from many sources, not just the current assessment activity. It also requires inference to guide future action. Feeding forward impacts two key aspects of learning: (1) it engenders a concept of continually refining knowledge and how we reflect upon that knowledge; and (2) it helps scaffold future attempts at the task so increasing the power of the feedback by adding to the report back on what has been done, acknowledging key learning as the curriculum progresses.

Feedback emerged as a key process of formative assessment in generative learning, using some key strategies, some with local and immediate action, some deepening conceptual knowledge and guiding decision-making. It aimed to involve learners in their own learning, so they could remain self-motivated and self-endorsing. This it did by unique learner patterns of feedback with the feedback tools showing a progressive complexity. The way the tools are used developmentally exemplifies how spirals of feedback are instrumental in moving the learner forward. Data from feedback examples demonstrate this developmental use in each formative assessment context.
Feedback dialogue acted as mediation between the learners and the substantive body of knowledge and cultural practice by acculturating the learners in both the language and practices of feedback. Knowledge of the vocabulary, knowledge and concepts available to each learner at each given feedback point is crucial to the effective use of the feedback process. When feedback is used as a referent, the referent may not be concrete such as task objectives, but may be based on analysis of the current learner (Sadler, 1998). This analysis included within-learner factors and a knowledge of contributing learning experiences indicating the assessment process itself can be communicated through feedback, in addition to information about the task and actions necessary to complete that task. The move from simple to complex would suggest that the feedback processes respond to an observed change in the quality of learner and learning.

![Feedback spirals](image)

**Figure 2: Feedback spirals**

Feedback is characterised as spirals around assessment activity. Some spirals are completed immediately; some have a far longer time frame. Problem-based learning tasks offer immediate short-term practical goals with short distance between feedback opportunities, and more long-term goals of writing critically and reflectively, therefore spirals leading to both present and future activity. This suggests a far more complex picture of interaction than is currently suggested by the literature and may indicate the importance of specific course demands and how they are timed when considering how best to plan for effective formative assessment and feedback opportunities.

### Adding Power

Assessment cycles add power to learning potential. Power, when applied to a social practice like feedback, may add several useful aspects to its meaning: first, it refers to its capacity to act effectively where effectiveness might be partly viewed as its ability to produce action or reflection. Efficacy is an individual construct – what works for one learner, does not work as well for another. This relates to its usefulness or accessibility for the learner. Feedback would lack power if it were communicated in language that was too culturally bound or too complex for the learner at that point in his/her learning. Feedback would also lack power if it delivered information about the gap between actual and desired performance by telling the learner the surface features to attend to, rather than involving the learner in the process of comparing learning goals to actual performance. Feedback, as part of assessment for learning should communicate with future action, sharing learning goals. Individualising may involve communication that is more than information about cognition alone. We therefore consider this as part of feedback potential – the degree to which it provides personalised information and inspiration that is acted upon in future learning. Power also speaks to the degree, or amount, or permanence with which feedback stimulates action or reflection. A piece of feedback may produce some low level reflection on a learning task but not sufficient to engage the learner in reflection which will in some way change future action. The term may also refer to the speed or force with which action and future learning are stimulated. Feedback may be so compelling as to create a fast rate of progress, or it may produce a small learning effect. Therefore, the term ‘power’ is used to communicate the strength the speed and the permanence of effect on learning and reflection on learning.
Conclusion

Curricula organised as spirals help participants to become generative learners. A spiral curriculum allows core themes and concepts to be revisited in increasing levels of complexity, abstractedness and generality with new learning cyclically linked to previous learning. This is turn creates a curriculum structure that allows formative assessment and associated feedback information to take a spiralling structure. Feedback in professional learning environments is a seminal aspect of learning experience that stimulates perspective and learning transformations. This is particularly important for complex professional learning. Potential power is created through assessment cycles around activity, giving opportunity to ‘hold off’ summative evaluation. These further iterations give opportunity to move towards more culturally coded and embedded language, responding to current cognition as reflected in the task and knowledge of the learner in broader contexts. Within our current culture that demands highly complex learning to be applied autonomously in intensely fluid situations, a spiral curriculum with associated spirals of action leading to formative assessment enables learners to develop generative learning and the ability to apply rapid and robust decisions to novel situations. ‘If pedagogy is to empower human beings to go beyond their “native” predispositions, it must transmit the “toolkit” the culture has developed for doing so’ (Bruner, 1996, p.17).

References

Silent Witness: Student Voice and Creative Approaches to Learning

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This paper focuses attention on the differential experience of creative learning for undergraduates and postgraduates and their experience of teaching, learning and assessment in higher education. It explores the distinctive nature of learning for mature and sometimes non-traditional learners who are often working in professional roles in education, and the particular challenge this presents to teachers in higher education. This paper details the findings of a small scale research informed teaching project that endeavours to listen to the ‘student voice’ on creative learning and to reflect upon how opportunities to adapt and invigorate creative approaches to teaching, learning and assessment have been explored. This paper reflects critically upon how colleagues in the Centre for Postgraduate and Professional Development at LJMU have endeavoured to respond to, and initiate innovations in teaching and assessment. The findings of the research raise questions of a deeper order; a discussion about personal epistemology, and its bearing on one’s sense of agency, how this relates to a sense of professional development and the ability to be empowered and empowering. The initial findings of the research suggest that there is a useful connection to be explored between ‘voice’ and learning, and that arguably creativity is key to both supporting the exposition of this process, and to stimulating meaningful connections between teaching, learning and assessment.

Keywords: Creativity, student voice, learning, professional development

The Emergent Voice

Can you remember your student voice? That’s not a question about what kind of student you were, it’s a question that asks is there within your lived memory a ‘voice’ that you recognise now of being from then, a ‘voice’ that emerged from you being a student. Too distant, too singular, too undefined? Another way in is to notice if you have a ‘voice’ now – your voice may be blended and depend upon whether you occupy the role of teacher, manager, researcher or student. But what qualities can you discern; how is it shaped, supported, quietened or indeed silenced? What we raise here is of a deeper order, a discussion about personal epistemology, and its bearing on one’s sense of agency, how this relates to a sense of professional development and the ability to be empowered and empowering. The initial findings of the research suggest that there is a useful connection to be explored between ‘voice’ and learning, and that arguably creativity is key to both supporting the exposition of this process, and to stimulating meaningful connections between teaching, learning and assessment.

There has been an incremental shift across education in recent years to pay heed to student ‘voice’. The context however is significant. Government policy has increasingly adopted a more market driven, consumer led education agenda. The backdrop has been a culture of audit and ‘performativity’ indicators which are significant, arguably exclusively significant, as measures of quality across education (Avis 2007). Pupil and student ‘voice’ has acquired some status as a quality assurance indicator, though frequently framed within the discourse of ‘value for money’. The experience of being listened to, nurtured, encouraged to take risks, supported in managing uncertainty, learning from failure, and exploring a learning process is arguably not quite
as high up the ‘value’ agenda as some working in higher education would like, this ‘student voice’ is neither revered nor indeed heard. If learning is to develop and flourish, it is possible that there needs to be receptivity to the processes that learners find engaging and allow them to develop their own passions. Student voice is emerging as an important element that informs universities and how they respond to and augment the student experience; and its significance is relevant to another challenge facing higher education - how universities address the demand for more creative and innovative graduates for a fast changing and complex world of work.

**The Context of Voice**

There has been a growing awareness in the last decade of the value and benefit of adopting a more creative approach to teaching and learning in education (NACCCCE 1999). These policy documents provide the backdrop that suggests that Britain needs an education system that encourages ‘widespread development of generic skills of creativity.’ (NACCCCE, 1999)

There is plenty of literature that suggests creativity is important to students. Jackson (2004) discusses education through a discourse of enablement, one of the fulfilment of potential and supporting students to develop their uniqueness through creativity. He posits that creativity enables one to adapt to the changing world and is therefore wholly and highly appropriate for higher education. This theme is an echo of Barnett (2000) who states that one of the purposes of higher education should be to prepare students for the ever-changing world. McWilliam (2008) draws useful connections between the pace and demands of the 21st century world of work and the relevance and appropriateness of graduate skills in the light of such uncertainty, risk, and complexity. The demands of such fluid working environments require skills of students that are sourced from a creative font – these should be nurtured throughout our education system, and not least in higher education. McWilliam responds in part to Barnett and Coat (2005) who have questioned whether the emphasis on skills in higher education is preparing students to engage with the world. They argue that government should place more emphasis on creativity within higher education to achieve this goal.

Yet higher education appears to be remarkably resistant to embrace fully research that evidences a more expansive approach to teaching and learning. The institutional recalcitrance can be sourced from a more linear, objective and rational perspective that privileges particular approaches to accruing knowledge and understanding. It is limited, it pays little regard to the subjective, sentient and emotive aspects of learning, and it is bound by frameworks that predefine the required learning (Creme 2003, Simmons and Thompson 2008). More specifically, creativity is often inhibited by predictive, outcome based course designs. These set out what students will be expected to have learnt, and offer little possibility for the unanticipated or student determined outcomes. Assessment tasks and assessment criteria which limit the possibilities of students’ responses are also significant inhibitors of their creativity. So there is no institutional risk taking here.

It is ironic therefore that at the critical early stages of learning, creativity is at the fore in terms of teaching creatively, teaching for creativity and learning through creativity. The curriculum for the under fives adopts a much more holistic approach, one that draws on body, mind and spirit, an approach that values emotion alongside reason – no hierarchy there. Why has higher education historically quelled self expression, reified intellect, and silenced dissent. What is the impact of being ‘forged’ as a student, or indeed as a teacher in this context? And what is needed to redress this in order to teach for creativity, engage in creative teaching and creative learning.

Qualitative research by Donnelly, (2004) that explores how creativity is fostered within an imaginative curriculum in higher education finds that students perceive that there is an impact on their learning. We argue, along with Jackson (2004) that there is a ‘voice’ that can be encouraged to emerge, a voice that values creative approaches to learning and benefits from leaving behind curricula that have been wrung dry and lost their buoyancy in making learning meaningful. Research undertaken by Jackson (2004) that examined personal accounts of teachers promoting student creativity found that students who engage with the creative process changed their perceptions of creativity, and began to re-define themselves. Most students began warily; however their ways of thinking changed during the process. As creativity challenges one to think unconventionally students showed enthusiasm when they finally solved problems and when they were pressured to think ‘creatively’. Jackson contends that creativity in the classroom allows the teacher to become more of a facilitator, enabling students to be self-directing, self-regulating and resourceful learners. So evidence seems to show that creative teaching and creative learning are good. The question arises as to how to generate environments that would allow this learning, creativity and ‘voice’ to flourish more widely across higher education, and specifically at a local level.
The Local Voice

At this point we depart for a more usual academic writing style, we present to you, the reader, an opportunity to visit again a different way of making meaning from words on paper. We ask that you suspend judgement as to the value and outcome of such scripting, we ask you to play with words - seriously. Here we introduce some narratives; a different, more expressive style of writing that foregrounds the politics of the personal, a meta-communication that re-visions knowledge through the process of knowing. This we argue is a stable place to write of life’s temporality, stable enough to make provisional readings of knowing, the precursor to knowledge. We use a creative approach to illuminate tangential ideas. Not objective, linear, and rational, but infused with subjective experience, poised for engagement and the reclamtion of ‘voice’.

Voice of Ideas
I was taken with the notion that each of our senses gives us a primary source of insight into ourselves and the world in which we live. Whilst we can identify these senses as being separate sources, they are indisputably interconnected by our bodies, each sense then only shaping part of a whole - whole body, self and Self. Our senses are sources of knowingness, an inclusive knowledge which engages the process of knowing as much as the knowledge that is generated. I like the idea that we coexist as both knowers and generators of knowledge, I like the idea that in any one sensory moment there is the potential for an unfolding, an insight into life’s possibilities, meaning and purpose. As embodied human beings we are bounded by time and space but we negotiate and learn for ourselves what realities these parameters mean. So my commitment is to the creative connections that give us all more; more of our senses, more meaning, more purpose, more life. We are indeed greater than the sum of our parts, our singularly unique realities are simultaneously shared and so whilst we dance our own dance, we are all moved.

Voice of Sense
The story of the physical is also about how we listen to the body, the breath, the tension, the vibration, the aches and strains, the emptiness, the rawness, the heart beat, the shakes and dizziness, the numbness, the physical proximity, the lightness and heaviness, the openness and ‘closedness’, the burn, the sweat, the exhaustion, the length, the breath, the expansiveness, the ‘constrictedness’ - an ever more aware sensory list, the body boundary that sees and hears and touches and smells. Perceptual information from which I make meaning, accumulated meaning over time; my body remembers the smell of, the embrace of, the hit of...yesterday. Our physical self is a sensing self, it reacts to and generates its own knowledge.

Voice of ‘Her/Story’
Moments move from one to another, change and transition provide the contours and the texture to our lives as we negotiate relationships with ourselves and one another. We are both young and old for we carry with us the stories and memories that colour and fashion our lives. The story of my Nana’s hands, her/story, not his/tory, my Nana and her heritage, her experiences and how they impacted on my mother and so on and so forth. The maternal ancestral experiences of embodiment that we inherit;

Nana’s hands
Nana’s big strong lively arthritic hands
the ones that used to knit in turquoise,
the hands that shuffled in rummy,
intent and committed to the game, always a proper game
the hands that knifed the slab of butter onto the hot toast,
unlike the scarcity of the war years,
the hands that took hold of mine
striding me up the Anfield roads on a wet Sunday morning after mass,
collecting for the Missions, with zeal,
the hands that gripped and pulled on the handrail
as we stepped to the top deck of the bus
on our way to Southport,
the hands that tied bows under my chin too tight,
those dreaded plastic rainhoods,
the hands that endured the shears
as they cut and cut and cut again the privet
the hands that stained yellow at their tips
of duty free smokes from the cruise
the hands that meant something lost
as they clutched and crushed my body
in their hellos and goodbyes
the hands that in strength and recognition
toasted me in Drambuie as they began their farewell
and the hands that took my head between them
and in silence rested me with their parting grace

Three pieces of writing, a trajectory of writing styles that shifts from words as ideas, to words that alert the senses, to words that invoke emotion. They read and impact so very differently. What part does a sensory and emotional engagement have in the learning process? What does writing creatively, that gives permission for embodied engagement, invoke in you and how does your imagination impact upon your learning?

What we question here is the priority we afford to the sensory, emotional and creative elements of learning that have been historically relegated as irrelevant or indeed denied. Are there grounds to embrace a more complete appreciation of how we ‘learn at our best’, and if so maybe there is need to revisit what is included as credible learning outcomes within the curriculum. The issue of measurement and assessment is worthy of another paper, suffice to say at this juncture that Elton’s (2006) critique usefully circumscribes the current status quo in regard to assessing creativity in higher education and suggests a way forward that is built upon the guiding principle of interpretivist assessment.

The Learned Voice

It’s not easy, the art of teaching and learning never has been. The demand is never ending, to teach on the cusp of certainty and chaos, to support students in their reach and grasp of that which is just beyond them in the present, just outside their comfort zone – this is difficult work. Does bringing an embodied presence as either teacher or learner support more active learning – deep learning? Sparkes (2008) suggests just this. He argues that by acknowledging and drawing attention to our corporeality and our senses in particular, we create the opportunity to expand our consciousness, and to integrate, whole heartedly, knowledge and understanding. Additionally Smears (2009) argues that the senses have value added to any learning experience, and our job as teachers is to invite students to have an intention to pay attention to this level of our being. Developing this theme is research by Newton and Plummer (2009) who investigate the effects that creativity has on reflective practice. Their findings suggest that using a variety of experiential and creative approaches to learning enables students to ‘associate personal meaning to their learning’ (2009:75) The authors conclude that ‘the use of creative arts as a pedagogical (pedagogical?) strategy enables individuals to better understand themselves to stimulate thinking and enables learning to be shared’ (2009:75).

However, there is a caveat. Even if we do subscribe ‘in theory’ to include a more comprehensive approach to learning, how can this be practised within the confines of a university teaching and learning strategy? Does the curriculum, framework for learning, environment and culture allow for such innovation (Strathern, 1997)? Alltree et al. (2004) identified several conditions that appear to facilitate students’ creativity which include the following dimensions: having sufficient time and space in the curriculum to allow students to develop their own creativity, having sufficiently varied and diverse working situations to enable all students to be creative. She goes on to suggest that allowing students the freedom to work in new and interesting ways, and challenging students with real, demanding and exciting work is also significant. Finally she acknowledges the issue of assessment; designing assessment which allows for outcomes which are not narrowly predetermined, fostering a climate within a module, programme or department which encourages experimentation, risk taking, observation/awareness, evaluation and personal development for both staff and students.

Documenting the generic variables is important, and worthy of attention, but what really matters is what the local student ‘voice’ has to say about their understanding of creativity and how it impacts upon their learning within their current experiences of higher education. Local needs to be vocal and we are in the process of conducting a Research Informed Teaching (RIT) project that endeavours to get to the heart of this question. It is innovative in method, using creative approaches to ascertain perception and experience of creative approaches
to learning for undergraduate and postgraduate students. Focus groups and semi-structured interviews using a variety of creative media provide the structure for generating the data. Analysis of the findings is underway. A preliminary reading suggests that the discourse of personalization permeates the narratives of student experience, and that undergraduates and postgraduates engage differentially in their perceived sense of autonomy and the meaning ascribed to independence in learning. This is particularly evident in those who are focussed on their emergent professional role. Issues of critical thinking and empowerment to think ‘outside the box’ are further themes that are raised across both undergraduate and postgraduate domains, though it is those working at Masters level who scrutinize creative learning more specifically in the light of their relationship to professional practice. This raises the second significant theme that emerges from the data, that of creative learning as an approach that is both foundational, upon which competencies can be developed, and concurrently excavates the emphasis on skill acquisition that percolates the government policy agenda for higher education.

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Application of DEA on Teaching Resource Inputs and Learning Performance

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This paper aims at exploring the quantitative learning performance of English conversation for freshmen in a university of Taiwan by applying data envelopment analysis (DEA). The students following a certain language learning program are chosen as the research object. This paper designs a learning performance mechanism to identify the main input indicators (the richness of course content, the diversity of accessed multiple learning channels) having a significant impact on the students’ learning performance. We focus firstly, under the same input resources, on the gap between the actual output performance and the target output performance in order to clarify the amount of improvement necessary to reach the optimal performance of outputs. We identify the decision making units (DMUs) with the best performance and those needing some adjustments. This study provides suggestions to teachers and students about how to make a better use of limited teaching and learning resources. The research result acquired by applying DEA can further indicate whether existing teaching scale is in optimal size, and whether students’ learning efforts and teachers’ teaching efforts will reach the expected performance.

Keywords: Data enveloped analysis (DEA), learning performance, teaching resources

Introduction

Over the last decade, the number of colleges and universities in Taiwan has increased by 69, from 78 in 1997 to 147 in 2006. However, the ratio of spending by the government in education has decreased from 5.37% 1996 to 4.39% in 2005 (Hsu, 2008). According to the Ministry of Interior (2010), Taiwan has the lowest birth rate in the world: 0.83. As a result, the number of students is decreasing dramatically, even though the acceptance rate for colleges and universities has reached 90.93% in 2006 (Hsu, 2008). This situation will inevitably pose the question of the survival of many educational institutions which are already facing financial plight. Higher education has become increasingly competitive and universities must enhance their reputation to ensure their future. In recent years, the Ministry of Education, in order to allocate more efficiently limited education resources and to control the quality of schools, is undertaking a performance evaluation for every college and university in Taiwan. Primary, elementary, junior and high school are not concerned by this performance evaluation for the time being. Higher Education institutions, especially the private ones, hope to obtain an
excellent evaluation and to receive more financial support from the Ministry of Education in order to avoid low student enrollment, high graduate unemployment, credential inflation, and even university closure.

The Ministry of Education promotes an Excellent Teaching Project. This program aims at encouraging Higher Education institutions to improve teaching effectiveness. Universities which obtain this project generally set up an Excellent Teaching Center and define some indicators of teaching performance for teachers to follow. The indicators selected for this study satisfy not only teaching effectiveness at the level of English conversation courses or any other specific subject, but at the level of the Excellent Teaching Centers of Higher Education institutions as well as at the level of the Ministry of Education. The design of teaching performance indicators follows this bottom-up program in order to enforce the competitiveness of the country. The results of the performance evaluation via the selected indicators can serve as a reference for the Ministry of Education to formulate educational policies.

Among the many evaluated items by the Ministry, one of the most fundamental is students’ learning performance. The quality of students learning not only has an influence on the long-term relationship to a country’s future growth and competitiveness, but also on the short-term impact, on the employment rate of graduate students, or even whether the school can or cannot attract enough freshmen. The evaluation of learning performance is also used for the organizations possessing human resources as their major assets. In a fierce competitive market, employees’ working performance and learning performance can be as fatal as in other industries and fields.

This paper aims at exploring the quantitative learning performance of English conversation for freshmen in a university of Taiwan by applying data envelopment analysis (DEA). Compared to other popular methods for performance evaluation such as stochastic frontier analysis (SFA) or structural equation modeling (SEM), data envelopment analysis (DEA) is appealing to scholars since it can assess the technical efficiency of decision making units (DMUs) with multiple inputs and multiple outputs using only information on input and output quantities (Fu & Huang, 2009).

As mentioned in the literature review, the DEA evaluation method has been widely applied in various industries and is proved to be quite reliable. It has also been applied to assess the efficiency of higher education institutions, but there is little application of DEA on language learning performance, notably concerning non-native students of English. This evaluation approach of learning performance can be employed to other branches of learning, even to corporate employee training.

The remainder of the paper is organized as follows: the literature review presents a few academic researches in relation with our paper. The methodology and chosen key items explain the DEA method and the important dimensions discussed in the paper. The following section presents the obtained primary numerical results based on the empirical data. The final paragraph draws the conclusions and implications.

**Literature review**

Many scholars have conducted research on what makes an excellent teacher (Bain, 2004; Fink, 2003). Wolf, Bender, Beitz, Wieland, & Vito (2004) described the strengths (being a knowledgeable and strategic teacher, creating a positive learning environment, demonstrating professionalism, demonstrating positive personal traits, and displaying scholarly traits) and weaknesses (providing poor delivery of course content, acting disorganized, being inaccessible, and displaying weak teaching skill) in faculty teaching performance as reported by undergraduate and graduate nursing students. McGowan and Graham (2009) studied the factors contributing to improved teaching at Brigham Young University (BYU), a private church-sponsored university. They determined that the top four factors leading to improvement were active/practical learning (providing real-world experiences and in-class discussions), teacher/student interactions (knowing each student personally), clear expectations/learning outcomes (having high and clear expectations for the students), and faculty preparation.

Horwitz (1990), Kern (1995), and Schulz (1996) have argued that mismatches between foreign language students’ and teachers’ expectations can negatively affect the students’ satisfaction and lead to the discontinuation of study. Kern (1995) compared individual teacher’s perceptions of effective teaching practices with those of the students. Barcelos and Kalaja (2003) demonstrated that teachers’ and students’ beliefs about second language acquisition are experiential, dynamic, socially constructed, and changeable.
Data envelopment analysis (DEA) has been applied in various industries, such as: electricity sector (Cherchye & Post, 2003), healthcare services (Worthington, 2004), high-tech industry (Lai, 2007), transport (Yang, 2005), and accounting industry (Lee, 2009). In addition, DEA has also been used to assess the efficiency of higher education institutions: Ahn, Arnold, Charnes, and Cooper (1989) on US universities in 1981-1985, and Glass, Mckillop, and O’Roruke (1998) on UK universities in 1989–1992. An assortment of methodological approaches have been employed in an effort to resolve the problem of efficiency measurement, from early studies which use ordinary least-squares (OLS) regression methods (Johnes & Taylor, 1990), to more recent studies which use frontier methods such as data envelopment analysis (DEA) (Abbott & Doucouliagos, 2003; Johnes, 2005). However, few studies measured efficiency at the departmental level (Madden, Savage, & Kemp, 1997 on economics departments in Australian universities; Johnes & Johnes, 1993 on economics departments in the UK in 1984–1988; Colbert, Levary, & Shaner, 2000, on MBA programs in the US).

Fu and Huang (2009) conducted a survey of recent college graduates in 2003 and collected different dimensions of performance indicators, including college graduate performance in the job market after graduation and student satisfaction with regard to the school environment and curriculum, as the student’s devotion to the school and its related activities. They used an output-oriented BCC type of DEA model to provide useful information to prospective students in terms of their choices regarding which college to join and to evaluate of the relative resource use efficiency of schools for school administrators. As far as we know, scholars who do research in the field of DEA tend to work on colleges or departments of management and business performance. It would be interesting to focus on language learning performance and notably to study the performance of non-native students of English (English as a Second Language or ESL).

**Methodology and chosen key items**

DEA is an attractive tool because it can measure relative efficiency of higher education institutions from commonly available performance indicators. Concerning the students’ learning performance, the input and output indicators become the important attributes for the periodical evaluation undertaken by the department, the university, and the Ministry of Education. This paper aims at designing a learning performance mechanism (the three circles in color) as illustrated in figure 1. Each year, students who enter university have different background and characteristics. Even though the freshmen follow the same training, they meet different teachers providing different teaching efforts. As students have different learning efforts, the learning results will be unpredictable. The 4 following categories, teachers, students, input dimensions, and output dimensions, vary directly each semester. They can be classified as major dynamic items in the learning performance mechanism. The objective of this mechanism is to identify the main input indicators (the richness of course content, the diversity of accessed multiple learning channels…) having a significant impact on the students’ learning performance (the students’ final grades, the knowledge level at the end of academic training, learning skills, employment rate…) generally classified as the main output indicators. The input and output indicators describing this type of learning performance should better be quantitative, so as to be compared to different evaluated units.

![Figure 1. Evaluation diagram of learning performance mechanism](image-url)
In figure 1, the mechanism is composed by the DEA model, the results treating, and the results interpreting. It can tell us whether the selected indicators have a significant impact on the learning results or not. If not, the input or the output indicators should be replaced. Then, the procedure should be repeated until we find the most influential indicators. This evaluating process is presented by the sign with a double sided arrow.

**DEA Model**

The domain of inquiry of DEA is a set of entities, commonly called decision making units (DMUs), that is the evaluated units, which receive multiple inputs and produce multiple outputs (Lee, 2009; Lin et al., 2009). The purpose of the DEA is to establish the relative efficiency of each DMU within a sample (Samoilenko & Osei-Bryson, 2008).

**Charnes-Cooper-Rhodes (CCR) model**

Charnes, Cooper, and Rhodes (1978) expanded Farrell’s (1957) efficiency measurement concept of multiple inputs and single output to the concept of multiple inputs and multiple outputs converted to single virtual input and output by linear combination. They estimated efficiency frontier by the ratio of two linear combinations and measured the relative efficiency of each DMU in constant returns to scale (CRS). The constant returns to scale represents the fact that the DMU’s inputs and outputs reach a state of optimal configuration, without the need of any adjustment from the inputs and outputs. This method is now so called “Charnes-Cooper-Rhodes (CCR) model or CCR model”. The efficiency value of CCR model is the overall technical efficiency of the DMU.

This research adopts the evaluating method—DEA to build up the learning performance mechanism and to perform the efficiency evaluations of a specific course. We investigate the operation performance of DMUs by analyzing these input items and by interpreting the output items according to different domain knowledge. Thus, the DMUs will be the classes that have this course; the input items could be the background or the learning effort of students, etc.; the output items could be the results of learning, such as: score, satisfaction, and so on.

Through the analysis of a specific evaluating method, we can better understand the operational efficiency of DMUs and provide references of concrete and practical strategies for those units with lower operating efficiency. That is, we can focus on the learning performance of each class through the quantitative analysis and provide some concrete and practical learning or teaching strategies for the classes with lower average scores. This notion can be explained by the efficient frontier curve which analyzes, under certain circumstances, how much effort is necessary for the output performance to come close to the efficient frontier. In our study, we focus firstly, under the same input resources, on the gap between the actual output performance and the target output performance. That is, we would like to clarify how much improvement is necessary to reach the optimal performance of outputs. It is also possible to realize the minimum input resources necessary by fixing the output resources.

**Data selecting—Input and output dimensions**

The characteristics of the research object are as follows:
2. They follow the same training program of English conversation for one semester to meet the homogeneity of the evaluated object.
3. A total of 18 students’ classes taught by full-time teachers (part-time teachers are not included in this research in order for teachers’ characteristics to be more consistent) are selected as the decision making units (DMUs), that is the evaluated units. They are named from D1 to D18.
4. There are 3 classes per semester. Each class contains around 50 students.

The specification of the outputs and inputs is a crucial first step in DEA. The input and output data is based on the average score of the student survey of teachers at the end of each semester for each class. Four dimensions are chosen as follows to represent the input and output items for the evaluation model.

**Input dimensions:**

I1. The richness of course content: it refers to the degree of teachers’ professional knowledge for the preparation of teaching materials.

I2. The diversity of accessed multiple learning channels: it indicates whether teachers can increase students’ learning interest and learning motivation.
Output dimensions:

O1. The positive degree of teaching attitude: it signifies whether teachers can positively respond to students’ questions and the maturity of teachers’ teaching skill and communication skill.

O2. The students’ learning performance: it indicates students’ learning performance after receiving a period of language training.

All the data acquired are fed into the learning performance mechanism designed for this research. The numerical results are treated and then interpreted in the following sections.

**Correlation analysis of input and output items**

Generally speaking, the correlation of the input items and output items in the evaluated units of DEA is commonly verified by statistics method, such as: regression analysis, factor analysis and correlation coefficient test, in order to understand whether the principle of Isotonicity is satisfied and the degree of the correlation between output items and input items. The correlation analysis used in this study is the Pearson correlation coefficient test. The higher the Pearson correlation coefficient is, the more closely the relationship between two variables will be; on the contrary, the lower the correlation coefficient is, the lower the correlation between two variables will be. In general, the Pearson correlation coefficient of 0.8 or above represents a very high correlation; the value of 0.6 to 0.8 represents a high correlation; the value of 0.2 to 0.4 represents a low correlation; the value inferior to 0.2 represents the extremel low correlation or not correlated. The input and output items listed in the Table 1 are abbreviated by I1, I2, and O1, O2, respectively. The correlation coefficients among these 4 items are all above 0.8 with significant levels at 1%. This shows a very high degree of correlation. The principle of Isotonicity is satisfied.

<table>
<thead>
<tr>
<th>Outputs</th>
<th>I1 (Richness of teaching material)</th>
<th>I2 (Diversity of learning channels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O1 (Positive degree of teaching attitude)</td>
<td>0.974***</td>
<td>0.802***</td>
</tr>
<tr>
<td>O2 (Students’ learning performance)</td>
<td>0.903***</td>
<td>0.878***</td>
</tr>
</tbody>
</table>

Note: *** denotes significant levels at 1%.

**Empirical results and Suggestions**

The results of numerical analysis are used to clarify whether the existing teaching methods can achieve the desired results and what are the improved methods. This study can provide suggestions to teachers and students about how to make a better use of limited teaching and learning resources. The research results acquired by applying DEA are expected to indicate whether existing teaching scale is in optimal size, and whether students’ learning efforts and teachers’ teaching efforts will reach the expected performance. The learning performance mechanism can also be applied to other fields or other languages in future studies.

**Efficiency analysis of learning performance**

The efficiency value of CCR model is the overall technical efficiency of the evaluated unit. If the efficiency value equals to 1, the evaluated unit is efficient; if the efficiency value is less than 1, the evaluated unit is inefficient (Lee, 2009; Lin et al., 2009). This study analyzes the learning performance by using Frontier Analyst. The CCR score listed in Table 2 refers to the overall technical efficiency in the CCR model for 18 DMUs, named from D1 to D18. The average efficiency is 0.986. The overall technical efficiency of the DMUs D1, D4, D6, D10 and D13 show the best performance with value of 1. That is, their CCR Score are all on the Frontier curve without the need of further improvement in the inputs and outputs.

Taiwanese students are quite shy and do not like to express their opinion and speak a foreign language in public, especially in front of their classmates. Teachers are suggested to encourage them to practice during the class. They should find a balance between correcting students’ mistakes and motivating them so that they are not afraid to participate. As to students, they have to show their efforts during the training and accept criticism. However, if they are over criticized by their teachers, they will probably lose their motivation. It is always preferable to tell students in private what their problems are (pronunciation, speak louder, articulate, grammatical mistakes, content and vocabulary too poor, etc…). It is important they do not feel humiliated in public.
In Table 2, the column “Improvement degree” reveals how much improvement is necessary for the DMU and in what dimension. Since this empirical result is output oriented, we emphasize firstly on how much the insufficiency of output performance is under the current input resources; that is without additional input effort. That explains why the values of input dimensions, I1 and I2, are always 0 or negative. For example, the class D3’s overall technical efficiency is the lowest. There is still 4.6% of effort to do in the positive degree of teaching attitude and the students’ learning performance. That is, the teacher is suggested to respond to students’ questions more positively with more detailed explanation and to improve the teaching skill and communication skill so as to meet students' needs. As for the case of class D9, the improvement value of I2 is -0.5%. That is, the teacher is suggested to slightly reduce the quantity of teaching materials. So the students could better assimilate the basic and important information of the course, and enhance their learning performance.

The column “Refs” indicates the number of times the other DMUs are referring to it. For example, there are 12 DMUs referring to the class D4. No DMUs will refer to the inefficient DMUs; this explains why their Refs values are all equal to 0. The column “Peers” indicates the number of times the inefficient DMUs refer to other efficient DMUs. 14 DMUs are referring to efficient DMUs. For example, the class D3 refers 3 times to other DMUs. It is suggested that experienced teachers help their colleagues and give them advices and ideas on how to make their class more attractive.

<table>
<thead>
<tr>
<th>DMU name</th>
<th>CCR Score</th>
<th>Improvement degree (%)</th>
<th>Refs</th>
<th>Peers</th>
<th>DMU name</th>
<th>CCR Score</th>
<th>Improvement degree (%)</th>
<th>Refs</th>
<th>Peers</th>
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</thead>
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<td>0.0</td>
<td>0</td>
<td>0</td>
<td>D10</td>
<td>1.0</td>
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</tr>
<tr>
<td>D2</td>
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<td>0.0</td>
<td>0</td>
<td>0</td>
<td>D11</td>
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<td>0.0</td>
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</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>D12</td>
<td>0.972</td>
<td>0.0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>D4</td>
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<td>0.0</td>
<td>0</td>
<td>0</td>
<td>D13</td>
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</tr>
<tr>
<td>D5</td>
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<td>0</td>
<td>0</td>
<td>D14</td>
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<td>0.0</td>
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<tr>
<td>D6</td>
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</table>

Average 0.986

Conclusion

McGowan and Graham (2009) studied the four factors contributing to improved teaching, such as active/practical learning, teacher/student interactions, clear expectations/learning outcomes, and faculty preparation. In our paper, we emphasized on four different dimensions: two inputs (the richness of course content, the diversity of accessed multiple learning channels) and two outputs (the positive degree of teaching attitude and the students’ learning performance). We use DEA to analyze the learning performance so as to obtain the numerical results and to give concrete suggestions.

We observe that the average overall technical efficiency is 0.986. Five DMUs (about 28% of all the DMUs) show the best performance with value of 1 and do not need any improvement in the inputs or in the outputs. It means that both teachers and students feel at ease and are motivated to work. The atmosphere in the class is good and students feel at ease to speak English. 13 inefficient DMUs have overall technical efficiency values (CCR score) smaller than 1. Students are more afraid to speak English during the class and are unable to assimilate the entire contents of the course. Some students think that their teacher has not enough professional knowledge and experience to teach a course of English conversation. Moreover, the teacher probably needs to improve the learning channels, such as language learning websites, learning softwares, online courses, computer-assisted language learning (CALL), etc…. D3, with the lowest overall technical efficiency, still needs to do 4.6% of effort in the positive degree of teaching attitude and the students’ learning performance. The teacher should respond to students’ questions more positively and improve the teaching and communication skills to meet students’ needs. A total of 4 DMUs have Refs values, since no improvement in input and output items is needed for them. D4 is the DMU most referred to and performs best: there are 12 inefficient DMUs referring to it due to its excellent performance in teaching material, and learning channels.
The results of this study not only give indications about teaching effectiveness of English conversation courses, but satisfy the objectives of enforcing Higher Education institutions’ competitiveness, as well as the goals of the Ministry of Education.

Acknowledgements

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References


Sub-theme A: Methodologies and Strategies in Learning, Teaching and Assessment


Strategies to Embed Intercultural Competence as a Soft Skill in University Curriculum

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Intercultural competence (IC) has become significantly important as we interact and function in the global workplace and multicultural societies. To be effective in operating within a diverse multicultural society, understanding, negotiating and managing the differences is crucial. Additionally, the rich diversity should be celebrated in order to have a safe, sustainable and harmony global community.

Specifically, internationalisation in higher education has led to a significant increase in the importance of IC for students and staff. For international students, “learning shock” and different expectations of teaching styles require them to develop IC in order to be able to interact and facilitate their learning in different cultures. For local students, the increasing numbers of international students and new immigrant students result in the necessity to develop IC. For educators, IC enables them to be responsive to the diverse multicultural student body in order to deliver quality teaching and learning.

In this paper, based on the literature review, we attempt to suggest ways to embed intercultural competence as the soft skill in the university curriculum. Two complementary strategies will be discussed. The first approach focuses on embedding IC in the university curriculum. Considering IC is an abstract skill and difficult to measure, an outcome-based approach will be proposed to map students’ development of IC. The second is through international experience program that provides cross-cultural experience for students. This strategy describes how teaching practicum in other culture appears to be compatible with the principles to develop intercultural competence.

Keywords: Intercultural competence (IC), soft skill, university curriculum, outcome-based, international experience

Introduction

Globalisation makes the world becomes closer and society becomes more diversified. As the world becomes more interconnected and globalised, people need to be able to understand and interact with each other effectively. To be effective in operating within a diverse multicultural workplace and society, understanding, negotiating and managing the differences among and across cultures and contexts have become crucial. Additionally, the changing landscape of the workplace and society implies the need for graduates to develop IC. In this regards it is important for universities to equip their graduates with IC.

Internationalisation, which is perceived as a response of university toward globalisation, has been practised in various ways. Knight. (2003, p. 2) defines internationalisation of higher education as “the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of postsecondary education”. In this context, Knight considers intercultural as an important dimension in internationalisation as an on-going developmental process, and it involves the process of infusing or embedding the dimension into programs and policies for its sustainability (Knight, 2003). This leads to internationalisation of the curriculum as the emergent core practice of internationalisation.
Moving toward internationalising the curriculum, IC has become one of the important skills in the changing demographics of student body in higher education. IC needs to be cultivated not just among students but also among teaching academics. The increasing numbers of international students in the classroom justify the need for them to develop IC so that they can interact and participate actively in the learning process. Teaching academics also need IC so that they can be responsive to the differences in learning expectations of the culturally diverse student body (2009; Haller, Fisher, & Gapp, 2007; Jiang, 2006; Kingston & Forland, 2008). Thus, for effective teaching and learning process, students and teaching academics should “develop personal and intercultural relationships through a collaborative, reciprocal dialogue, whereby all perceptions of difference are recognised, included, respected and valued” (Grey, 2002, p. 166).

IC has also been viewed as a valuable “global commodity” (Stier, 2006) and considered as commodities for employability prospect. In the globalised and digitalised world, individuals who are able to work effectively within a multicultural environment are highly sought after. Freeman et al., (2009) stress the importance of IC especially for business students and asserted IC as one of the important graduate attributes that relate to global literacy which is an essential skill to be successful in the changing modern business environment.

However, it has been argued that many graduates are still ill-prepared to face the global employment market and relatively few undergraduates gain IC in universities (Hunter, et al., 2006). Thus, there is a need for universities to equip their students with IC so that their graduates can interact and perform effectively in the global workplace as well as in a culturally diverse society. Given this context, this paper aims to provide strategies to embed IC in a curriculum in higher education. The first is about developing IC in the formal curriculum; and the second is through the provision of cross-cultural experience for students. The definition, concept and model are given as follows as the background information.

**Definitions of Intercultural Competence (IC)**

Different terms, such as global citizenship, cross-cultural communication competence, and global competence have been used to describe IC (Deardorff, 2006). In general, IC can be conceptualised based on two main categories: content competencies and processual competencies (Stier, 2006). According to Stier (2006), content competencies predominantly refer to the *knowing - what* aspect, whereas the processual competencies refer to the *knowing - how* aspect in which it involves intra and interpersonal competencies. Specifically, the intrapersonal competencies refer to one’s cognitive and emotional skills, whereas the interpersonal skills relate to interactive skills.

Due to its abstract concept, researchers have given different emphasis when conceptualising IC. Based on the various definitions cited in the literature, IC can be conceptualised as follows:

- It is a social interaction that involves achieving intra and interpersonal communication skills across culture and contexts (Deardorff, 2006; Stier, 2006) in which language plays an important tool (Crichton & Scarino, 2007; Heyward, 2002).
- It involves achieving knowledge and understanding, attitudes and skills (Deardorff, 2006; Freeman, et al., 2009; Heyward, 2002; Stier, 2006; Stone, 2006)
- It is a skill which can be learnt in developmental stages (Deardorff, 2006; Stone, 2006) through a dynamic, on-going, interactive and self-reflective process (Freeman, et al., 2009)

We found that Freeman et al (2009)’s definition is the most appropriate because firstly, it includes both the developmental process of learning and the abilities that students need to attain. Secondly, the developmental process includes the cognitive (knowledge), affective (attitude) and competencies (skills) which are considered as holistic development. Finally, it emphasises on learning as dynamic, on-going, interactive and self-reflective for sustainable development of IC.

Researchers (Deardorff, 2006; Hunter, et al., 2006; Stier, 2006; Stone, 2006) have also developed models for developing IC in relation to their respective conceptualisation. These models range from simple design involving only a single stakeholder (students) to more complex design with multiple stakeholders (students, teachers etc) and multidimensional. The development process of IC has also been described in the forms of either linear or iterative process.
Embedding IC in the University Curriculum

Intercultural communication has been historically considered as an academic discipline and taught as a content subject. However, in response to globalisation and internationalization, IC has been recognised as important skills. Although the development of IC can be attained from a particular academic subject, we believe that IC should be regarded as a soft skill and integrated in the formal curriculum. Students who are exposed to IC in a particular academic subject will achieve primarily content competencies but lack processual competencies. This implies that students have the knowledge and attitudes of intercultural communication, but they still lack the necessary skill for successful cross-cultural engagement. As such, IC needs to be embedded across the university curriculum as a soft skill.

Several universities in Australia have recognised the importance of developing IC as soft skills and have embedded IC in their university curriculum. They provide good references on embedding IC in the curriculum. Thus, the discussion in this section will be largely based on the experiences of Australian universities. Traleaven (2009, p.6) suggests four ways to start embedding IC. They are “providing good resources and tools (including staff development workshops), committing program assurance of learning, aligning IC across programs through policy and curriculum review, establishing distributed leadership commitment and encouraging networks of IC expertise”.

When embedding IC in the curriculum, it is important to have a particular model of the development of IC that will be used across the university curriculum. Existing models or framework proposed by researchers can be used and adapted according to the priority of the university. This model should also emphasise on the developmental process of learning and indicate the abilities or outcomes that students need to achieve in order to be competent in IC. This implies that the teaching and learning process is centred on students learning, whilst teaching academics function as facilitators in helping students to achieve the competencies.

One of the models that can easily be adapted is the model proposed by Stone (2006). Stone considers IC as higher-order generic skills and highlighted the need to develop a clear and coherent framework. Framed within eight essential elements of IC which appeared consistently in the literature, Stone proposes a simple reciprocal model which demonstrates an on-going developmental process (Figure 1) and emphasises on the process of learning by differentiating between knowledge (prior learning) and skills (observable behaviour) as the outcome of learning. The attributes of intercultural competence are linked to both the knowledge and skills as guidance for teachers to assess students’ achievement. Stone also asserts that a clear and coherent framework is important in order to guide the teaching, learning and assessment in development educational programs that enhance IC. Stone proposes a competency-based approach or in this context the outcomes-based approach as the appropriate approach to develop IC as a soft skill.

Another example of how IC can be embedded as a soft skill across university curriculum is using the outcomes-based approach has been documented by Leask (2002). A model on Graduate Capabilities for Australian Technology Network (Bowden et al., 2000) has been employed to develop IC at one university in Australia. Recognising that the development of IC is multidimensional and not linear, Bowden et al (2000) identify four levels of outcomes: scoping (defining the scope of capabilities), enabling (developing certain skills related to capability), training (elaborating or establishing meaning of the capability within a particular discipline) and relating (developing understanding of the relation between meaning and context). The outcomes-based approach was also employed since the focus was on “educational outcomes, on students and on what graduating students will have achieved during a program of study” (Leask, 2002, p. 2). For successful implementation, the university also ensured that there are linkages and alignment between the objectives, the graduate abilities, teaching and learning arrangements and assessment. They develop three tools to ensure the linkages. The “graduate qualities course planning grid” allows teaching academic to map the course objectives to specific

Figure 1: Stone’s model of developing IC (Stone, 2006)
outcomes of IC. The “checklist” assists them to plan and coordinate the development of IC within their curriculum and the audit tool is used for quality assurance and improvement process. This indicates the importance of aligning the different levels of IC across programs through policy and curriculum review (Treleaven, 2009).

The most recent model proposed for developing IC was drawn from a project on embedding IC in business faculties that involved four universities in Australia (Freeman, et al., 2009; Ridings, et al., 2008). Although it was developed particularly for business students, it was claimed that it can also be applicable for other groups of students. Their model emphasises the developmental learning process and outcomes-based approach.

The development to IC in this model includes three main domains which are the knowledge, attitudes and skills. It involves three main overlapping developmental stages, beginning at the raising of awareness, then developing of understanding and finally facilitating autonomy (independence). The developmental process is also considered as on-going and life-long learning process. As such, this model is not restricted for students, but it is also applicable for other stakeholders (teaching academics, support staff etc). The arrows connected the three developmental stages imply that developing IC is an iterative process (Ridings, et al., 2008). Learners can start at any stage depending on their background and level of their competency. They can also move backwards and forwards between two different levels depending on their level of achievement.

This model also provides descriptions for each levels and domains of the abilities/competencies. Based on Figure 2, there are nine descriptors applicable for each of the combinations of the domains and levels. The nine descriptors can be used to measure students’ attainment of IC. Additionally, it can be used as framework for teaching academics to set the specific learning objectives and design relevant instructional materials according to the levels of IC. Although the descriptors are mainly designed for business students, this model is flexible in a sense that it provides generic framework for designing descriptors for developing IC according to the emphasis of the university’s curriculum.

Freeman et al. (2009) also suggest that IC should be clearly identified as learning goals so that students can focus on their attainment. Since IC is an abstract concept, an outcome-based approach is considered appropriate so that students’ levels of achievement can be assessed and monitored. A model that specifically describes the behavioural outcomes or the competencies that students should achieve also allows teaching academic to focus on a particular level of IC as their learning goals and design appropriate teaching and learning towards the development of that particular level of IC.

Further, since the development of IC is an ongoing learning process and could not be achieved by attending one particular subject, it is important to map and align the outcomes of IC to different levels of subjects across the university curriculum (Treleaven, 2009). One of the ways to align the outcomes of IC is by mapping the different levels of IC outcomes to different units across the duration of the program. Treleaven (2009) illustrated
how the alignment can be achieved by mapping specific levels of IC across the university curriculum (Figure 3). It is argued that students could not achieve IC within a short period of time. As such, as illustrated in Figure 3, the mapping of specific outcomes of IC to different units, allows teaching academics to develop students’ IC progressive throughout the programme. Additionally, the development of IC can be planned within the curriculum by concentrating the development of intercultural awareness at the earlier stage (Semester I), followed by the intercultural understanding (Semester II) and finally focusing on the development of intercultural autonomy (Semester III). The development of intercultural autonomy can be further enriched by providing students the opportunities to experience different culture through field works or internships or international teaching practicum program which will be discussed in the subsequent section.

By considering IC as part of the learning outcomes that students need to achieve, it allows teaching academics to monitor and assess students’ development of IC as students progress throughout in the program. It also allows for assessment and future review of their teaching and learning approaches in relation to the development of IC.

![Figure 3: Mapping and aligning the levels of IC to different units in a program (Adapted from Treleavan, 2009)](image)

**Developing IC through field work: A Complementary Strategy**

This section provides a strategy to embed IC through another aspect of internationalising the curriculum, which is through internationalising students’ experience. Deakin’s Global Experience Program (GEP) is used to illustrate how a program aiming to internationalise students’ experience could be considered as another strategy to embed IC in university curriculum. Indeed, this type of program appears to be the favourite initiative to internationalise the curriculum (Rizvi, 2007). In the case of the GEP, students who enrol in Bachelor of Education (Primary and Physical); Bachelor of Teaching (Primary & Secondary); and double degree: Bachelor of Teaching (Secondary) and Bachelor of Arts and Bachelor of Teaching (Science) and Bachelor of Science, are provided with the opportunity to conduct their teaching practicum in other countries, such as Malaysia and Vanuatu (Deakin, 2009). In this case, curriculum is perceived as a broad context referring to not only the structure and content of a curriculum but also the dynamic and interactive process of teaching and learning (Fraser & Bosanquest, 2006). Hence, the development of students’ IC particularly in achieving the autonomy (advanced) level (Figure 3) can be embedded in the curriculum through the provision of cross cultural contact for students in an authentic environment. Similar programs to the GEP can also be developed for business students through internships in other countries to further develop students’ skills of intercultural autonomy.

Embedding IC in the curriculum through field work provides opportunity for rich cross-cultural experience for students. However, the encounter with another culture does not guarantee that they will develop their IC upon returning from the fieldwork. Literature on intercultural development suggests that to develop IC, the main requisite is to transform cultural experience into cultural learning. It is expected that the cultural learning will entail with the development of IC. Bennet (2008) provides five principles for developing IC as follows: firstly, people have knowledge about other cultures does not mean to have cultural competence; secondly, people excel in a foreign language do not guarantee to be able to learn a culture; thirdly, upsetting experience (culture shock) due to culture different may lead to new learning of culture; fourthly, cultural contact does not necessary lead to intercultural competence and fifthly, cross-cultural contact does not always reduce stereotypes. There are also other principles that have been considered as important to develop IC. Field work is considered necessary to develop skill of interaction (Byram, 1997) since students should get meaningful intercultural interaction (Deardorff, 2008) and the exposure of very different culture (Paige, 1993). Field work also allows students to practice reflective thinking (Paige, 1993; Byram, 1997; Deardorff, 2008). Additionally, comprehensive preparation for the fieldwork is required (Paige, 1993; Deardorff, 2008) and the presence of intercultural teacher during the field work is crucial (Byram, 1997; Paige, 1993).
In relation to the above principles, it appears that programs providing cross-culture experience have the potential for cultural learning entailing with the acquisition of IC. With regard to the GEP (Deakin, 2009), the typical nature of international teaching practicum seems to illuminate the possibilities for cultural learning. The specific contexts emerge as compatible with the principles on developing IC could be outlined as follows.

1. The fact that student teachers are supervised by Deakin teacher educator and local supervising teacher appears to be relevant with the principle on the importance of intercultural teacher on the field (Byram, 1997; Paige, 1993). They could play important role to support the development of IC by providing intercultural education. For example, in the case of negative or upsetting experience (culture shock as the extreme case) encountered by the students, teacher in the location could provide sensible explanation. Failure to address this problem may reaffirm the negative stereotype or develop resistance to change (Clement & Outlaw, 2002).

2. Student teachers are equipped with thorough preparation. Topics in preparation for the program include similarities and differences in regarding teaching and school; cultural related issues; and other general information of destination country. This practice could be seen as part of the support for students to develop their IC. Deardorff (2008) stated that the development of IC is a process that requires support before, during and after the fieldwork.

3. Apart from the fully prepared-compulsory teaching sessions, student teachers are required to conduct workshops or presentation to share their knowledge and skills with local teachers. Common initiatives include first-aid lessons, arts across the curriculum, IT skills to create school newsletters and establishing a sport competition. This could be regarded as an opportunity for them to get meaningful interaction. Deardorff (2008) suggested the importance of giving students meaningful interaction since the quality of an encounter does matter in order to induce cultural learning.

4. The GEP seems to promote student teachers to practice their reflective thinking since they are required to write their reflective journal about teaching and other live experiences. As mentioned by Deardorff (2008), Paige (1993) and Byram (1997), reflective thinking is crucial to trigger the cultural learning. Being immersed in another culture which is very much different seems to be the most likely result in the student teachers to be reflexive so that they are able to perform their teaching practice in different cultures.

5. The fact that the GEP is mostly conducted in Asian countries reflects the maximum opportunity for student teachers to experience cultural learning. Page (1993) mentioned that the big gap in the cultural difference promote student teachers to learn from their experiences during immersion.

This section illustrates the potential of fieldwork/internship programs such as the GEP can be integrated in the university curriculum to develop students’ IC. However, it should be noted that the provision of such avenue is insufficient to guarantee that students will fully develop their IC since there are other intrinsic factors inherent in individual students, such as their personality which may influence the development of IC. It is also suggested that the framework developed by Freeman et al (2009), as shown in Figure 2 can be used to assess the effectiveness of fieldwork/internship programs in developing students’ IC. To access the different levels of students’ achievement in IC, data collected from students’ reflective journal can be interpreted and map to the respective descriptions of the nine elements of IC (Figure 2). These descriptors can reveal the different stages of individual student’s IC. Subsequently, this information can be used to identify specific elements of IC that need to be highlighted for further development of IC among students.

**Conclusion**

In this paper, we argue that the development of IC as a soft skill could be embedded in the university curriculum particularly in the teaching and learning process in the classrooms and the field work/internships. To embed IC in the university curriculum, a framework on developing IC needs to be designed and adopted within the university and several models have been suggested in this paper. The development of IC should also be viewed as a developmental and on-going learning process, starting with aiming at raising intercultural awareness, then understanding intercultural and finally facilitating intercultural autonomy (Freeman, et al., 2009). It is also important to align the development of IC throughout the university curriculum. This can be done by mapping the different levels of outcomes of IC to the different levels of units across the university curriculum.
Since IC is an abstract concept, it is important to determine the abilities that describe students’ IC. An outcome-based approach of education that emphasises on students’ learning process towards achieving different levels of learning outcomes is considered appropriate to develop IC among students. It is also argued that students’ exposure in international contexts can facilitate the intercultural autonomy. Besides embedding IC in the teaching and learning process in the classrooms, fieldwork/internship programs such as the GEP provide students the opportunities to immerse themselves in other cultures so that they can practice and enrich their IC competency in a real context.

The assumption in this regards includes the perception that IC is considered as soft skills and curriculum is defined as not only the content but also the overarching of the teaching and learning itself including student experience. We also argue that as ‘a global’ skill, IC could be regarded as important in all academic settings, even in the context where the practice of internationalisation of higher education is not a priority.

References


Issues in Developing a Transnational Generic-Skills Business Unit for Malaysia

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The business program that is the topic of this paper provides three professional development units that deliver generic and project skills as well as business related work experiences both in Melbourne and across five Asian based campuses including Malaysia, Hong Kong and mainland China. The research question of this paper is; what are the main learning/teaching challenges in the delivery of generic-skills based units delivered for the first time into two Malaysian Institutions? Further to this, what measures can be employed to address any problematic issues? This paper will present preliminary quantitative data to analyse and identify key classroom delivery issues when the first professional development unit, focussing on generic skills, was rolled out into two overseas Malaysian partners, one in Kuala Lumpur and one in Johor Bahru. Whilst the literature pointed to cultural, pedagogical, logistical, operational and student perception issues, the main issues in the rollout included; the need to customise programs for culturally different destinations, the need to find and train facilitators who could deliver the generic-skills based activities, and, the adoption of a team-based learning pedagogy with the commensurate difficulty this type of pedagogy engendered in a teaching culture that was heavily reliant upon individualism.

Keywords: Transnational Education (TNE), on-line delivery, generic skills, issues

Introduction

Australian Universities have followed leads from England and the United States in actively pursuing business/educational partnerships with Universities from Asian regions. When programs are delivered cross-border many challenges need to be addressed. These challenges include the business relationship at the heart of the agreement, the cultural stresses inherent in delivering programs, the co-operation between the visiting and local staff members, the interests of the overseas students, the question of equivalence and quality of both Australian and overseas programs as well as a myriad of operational issues. This paper will look at the delivery of a new generic-skills based undergraduate Business Unit and then present the challenges that were encountered when this unit was delivered into two Malaysian locations.

Transnational Education (TNE)

In 2003 Australian Universities had 151000 on-shore overseas students enrolled and 210000 off-shore students enrolled (DEST-Table D.3, 2005). There are some 4485 signed agreements (up to 2003) between Australian Universities and overseas institutions (DEST-Table D10, 2005) and about 1570 signed off-shore programs (DEST-Table D.11, 2005). The five top sources for off-shore students are Singapore, Hong Kong, Malaysia, China and Indonesia (DEST- Table D.2, 2005). A 2006 OCED report, (as reported in Fahey, 2006), showed that Australia follows only the USA and the UK in the number of International students. Australian universities have been driven into this global educational market place due to a number of drivers: globalization; need for new streams of revenue; emergence of Web information access and the global desire for higher education (Cunningham et al., 2000). While there is much demand for programs the terminology describing the cross-border nature of delivery needs to be clarified. Knight (1997) coined Transnational Education (TNE) to distinguish international students studying overseas from those studying at home. Now Trans-border Education...
and Cross-border education can almost be used interchangeably and these terms cover the whole range of models, policies, practices and programs that deliver higher education across borders.

A British study in 2005 (Doorbar, 2005) detailed the drivers encouraging students to take up TNE in their home country:

- Primary motivator is career enhancement, a common global theme,
- Inability to gain entry into local universities, certainly for many undergraduates,
- Financial inability to travel overseas for education,
- Desire to continue to work while they study,
- Taking a unit in a remote location,
- Hard working, motivated, aggressive, eager to learn, and,
- Strong desire to improve English communications skills.

A further driver is the strong pull of a foreign degree program with its associated kudos. Just as there are many off-shore programs there are also many models that can be followed in developing a program. Often a program is initiated by a personal contact between two academics or university officials, this is often followed by fact finding visits then a memorandum of understanding is signed with suitable due diligence studies. Once all these steps and others are followed a binding agreement is drawn up. The final delivery model can take one of several forms (Ziguras, 1999):

- Distance - learning with interaction by fax, phone or email
- On-line - learning with heavy utilization of the Web,
- Sandwich - where students commence a degree in home locale and finish in overseas destination,
- Postgraduate - students do coursework overseas but return home to complete dissertation (Patrick, 1997),
- Off-shore - delivered all in local destination whether in local or English language, and,
- Off-shore blended - both visiting and local lecturers deliver course content often supported by Web on-line learning.

The Business Program at Victoria University is delivered into five Asian destinations: Kuala Lumpur; Johor Bahru; Hong Kong; Singapore and Liaoning. The model that is followed is based upon the affiliation model described above in Ziguras (1999), although the relationship differs between countries and even with institutions within countries. All units have different structures with the visiting lecturer delivering between 12 and 20 hours out of the total 36 hours. All unit materials are in English as are the course assessments. A major section of the assessment is graded by the visiting lecturer but internal assessment is normally split with moderation done by the visiting lecturer. A teaching visit lasts 5-7 days with the classes running on 4-5 nights finishing 10.00PM or equivalent during the day. On-line support is provided with Blackboard providing the online learning tool.

**PD Education @ VU and Sunway College**

The question of teaching generic skills at University has been at the centre of debate in Australia about the very role of universities (Kavanagh & Drennan, 2008). The growth in participation of both Australia on-shore and overseas on-shore and off-shore students in Australian Universities has shifted the role of the University (DEWR, 2006). Australian Universities have historically been very elite in their selection and participation. The opening-up of the Universities to both local and foreign students has necessitated the need to encompass vocation and internationalisation as espoused by Star & Hammer (2008). The increasing number of students attending universities also has placed an emphasis on the range of skills that students expect. These skills are described in many government and industry reports including one by the Business, Industry and Higher Education Collaboration Council (BIHECC, 2007). The BIHECC report called for critical thinking, teamwork, sustainability, ethical practice and life-long learning as expected outcomes from a university business education.

A 2009 ALTC report by Rigby (2009) presented four broad generic skills as being important in the development of the graduates at modern Australian universities; critical thinking, teamwork, ethical practice and sustainability.

“The actual set and sub-sets of skills, values, and attributes identified as central to students’ achievement by HECA, are consistently found across and within the various conceptualisations of generic skills. Although the terminology may shift from author to author, institution to institution, the content and substance of such is generally consistent and reflects contemporary concerns of a wide range of stakeholders in higher education, particularly in Australia. Of particular importance, to
The Faculty of Business at Victoria University undertook a comprehensive survey of stakeholders in 2007 (VU Business Review, 2008) and implemented a major change to the curriculum offerings rolled out from 2008. Three units were introduced, one in first, second and third year. These units were termed Professional Development 1, 2 & 3 (PD). They replaced discipline content based business units and started with the first unit focussing on generic skills, namely critical thinking, teamwork and communications. The PD units were seen as a way of bringing the incoming cohort through transition and additionally essentially improving their “job readiness” and employability skills as they graduated. The PD units also responded to the ever-expanding range of student ability that the mass University systems were bringing to Victoria University’s door (Star & Hammer, 2008).

The debate about generic skills is also going on amongst the Asian partners of Victoria University. Quek (2005) pointed to the need for Malaysian graduates to have generic skills including leadership, teamwork, innovative skills and well as problem–solving and oral and written skills. Quek further explores the difference in learning styles and the ability to transfer skills from university to the workplace;

“In the Malaysian context tertiary institutions probably need to consider the development of generic competencies in students so as to enable them when they graduate to transfer learning to the changing demands of the workplace” Quek (2005)

Hamzah & Abdullah (2009) point to the employment focus of generic skills and the need for graduates to have enhanced transferrable skills to succeed in the studies and career, further Shakir (2009), and Singh & Singh (2008) emphasise the importance of “soft” or transferrable generic skills being taught at Higher educational institutes in Malaysia.

PD1 is delivered in a vastly different format in contrast to all other undergraduate Business units at VU. The class is a three hour seminar with a facilitator rather than a lecturer. The learning model is based on collaborative teamwork with activity-based learning delivered through learning modules in Blackboard. Whilst the generic skills like problem solving, critical thinking, teamwork and communications are emphasised other skills sets including academic referencing, academic discourse and personal awareness skills are also developed. There is no exam with assessment spread throughout the semester completed in class. Critical writing analysis and reflective writing form a major assessment component with Readiness Assurance Testing (Michaelson et al., 2004) and problem solving exercises being the other main assessment tasks. There is one PowerPoint slide show in the whole unit. The PD1 unit was introduced into Sunway University College at Kuala Lumpur and Johor Bahru at the commencement of 2009. Sunway University College is the educational arm of the Sunway Corporation of Malaysia. The first intake for PD1 totalled 250 students but the decision was made to split this intake to allow further facilitators to be introduced in the second semester 2009. There was a cohort of 35 in Johor Bahru, this is a separate entity to Sunway KL.

Research Question

The research question of this paper is; what are the main learning/teaching challenges in the delivery of a generic skills-based unit for the first time into two Private Higher Education Malaysian Institutions? What measures can be employed to address any issues raised as a result of the differing location and student cohort?

Methodology

This article will derive from the literature a set of teaching/learning issues associated with TNE and then cross-match them with the unit evaluation questionnaire. The cross-matching will be guided by the experience of the visiting lecturers and supported by local staff. A more formal correlation process was not possible due to time constraints. Further analysis was completed by reviewing the e-Reflections of the student cohort. The triangulation of literature, unit evaluation and student reflection will allow for balanced research inputs answering the research question.

From the literature, teaching and learning pedagogy (Stein, 2009; Knight, 1997) was mentioned in almost all cases of TNE delivery. Team based delivery (Michaelson, 2004; Singh, 2008) was discussed as well as lecturer/student trust issues (Stein, 2009). Cultural localisation (Ziguras, 2008; Quek, 2005; Cunningham et al.,
2000) was mentioned in both Australian and Malaysian literature. Matching these issues with the unit evaluation questionnaire was completed by the visiting lecturers and is shown in Table 1.

Table 1. Unit Evaluation and Challenge Mapping

<table>
<thead>
<tr>
<th>Unit Evaluation</th>
<th>Mapped Challenge</th>
<th>Indicative Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Objectives</td>
<td>Cultural Localisation</td>
<td>Ziguras, 2008; Quek, 2005; Cunningham et al., 2000</td>
</tr>
<tr>
<td>Tasks Clear</td>
<td>Cultural Localisation</td>
<td>Ziguras, 2008; Quek, 2005; Cunningham et al., 2000</td>
</tr>
<tr>
<td>Understood Requirements</td>
<td>Cultural Localisation</td>
<td>Ziguras, 2008; Quek, 2005; Cunningham et al., 2000</td>
</tr>
<tr>
<td>Learning Activities Use</td>
<td>Team-based Pedagogy</td>
<td>Michealson, 2004; Singh, 2008</td>
</tr>
<tr>
<td>Learning Activities Well Planned</td>
<td>Team-based Pedagogy</td>
<td>Michealson, 2004; Singh, 2008</td>
</tr>
<tr>
<td>Learning Activities Well Managed</td>
<td>Student/facilitator Trust</td>
<td>Stein, 2009</td>
</tr>
<tr>
<td>Content Up to Date</td>
<td>Student/facilitator Trust</td>
<td>Stein, 2009</td>
</tr>
<tr>
<td>Assessment Well Planned</td>
<td>Student/facilitator Trust</td>
<td>Stein, 2009</td>
</tr>
<tr>
<td>Assessment Linked to Outcomes</td>
<td>Student/facilitator Trust</td>
<td>Stein, 2009</td>
</tr>
<tr>
<td>Assessment Assisted Learning</td>
<td>Student/facilitator Trust</td>
<td>Stein, 2009</td>
</tr>
<tr>
<td>Satisfied with Teaching</td>
<td>Facilitator Pedagogy</td>
<td>Stein, 2009; Knight, 1997</td>
</tr>
</tbody>
</table>

A total of 145 students enrolled into the unit in 2009. When invited to complete the unit evaluation, 135 completed the form. The qualitative data were analysed using Miles and Huberman’s (1994) method of arraying data and developing themes. The quantitative data were used to generate simple tables. The evaluation form asked questions in the areas displayed in the Review Metrics column in Table 1.

Findings

A review of the unit in July 2009 yielded quantitative data on student perceptions of the validity and effectiveness of the unit.

Table 2. Student Perception of PD1 Unit semester 1 2009 Malaysian co-hort, N=135

<table>
<thead>
<tr>
<th>Review Metrics</th>
<th>Strongly Disagree %</th>
<th>Disagree %</th>
<th>Neut %</th>
<th>Agree %</th>
<th>Strongly Agree %</th>
<th>Avg Malay Cohort S109 a</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Objectives</td>
<td>0</td>
<td>16</td>
<td>32</td>
<td>45</td>
<td>8</td>
<td>3.4</td>
<td>Cultural Localisation</td>
</tr>
<tr>
<td>Tasks Clear</td>
<td>0</td>
<td>11</td>
<td>42</td>
<td>39</td>
<td>8</td>
<td>3.4</td>
<td>Cultural Localisation</td>
</tr>
<tr>
<td>Understood Requirements</td>
<td>0</td>
<td>16</td>
<td>42</td>
<td>37</td>
<td>5</td>
<td>3.3</td>
<td>Cultural Localisation</td>
</tr>
<tr>
<td>Learning Activities Use</td>
<td>0</td>
<td>11</td>
<td>29</td>
<td>47</td>
<td>11</td>
<td>3.5</td>
<td>Team-based Pedagogy</td>
</tr>
<tr>
<td>Learning Activities Well Planned</td>
<td>0</td>
<td>13</td>
<td>45</td>
<td>29</td>
<td>13</td>
<td>3.4</td>
<td>Team-based Pedagogy</td>
</tr>
<tr>
<td>Learning Activities Well Managed</td>
<td>0</td>
<td>11</td>
<td>47</td>
<td>34</td>
<td>8</td>
<td>3.4</td>
<td>Student/facilitator Trust</td>
</tr>
<tr>
<td>Content Up to Date</td>
<td>0</td>
<td>8</td>
<td>37</td>
<td>45</td>
<td>11</td>
<td>3.6</td>
<td>Student/facilitator Trust</td>
</tr>
<tr>
<td>Assessment Well Planned</td>
<td>0</td>
<td>3</td>
<td>46</td>
<td>46</td>
<td>5</td>
<td>3.5</td>
<td>Student/facilitator Trust</td>
</tr>
</tbody>
</table>
The four broad challenges that emanated from the literature and that were cross-matched into the unit evaluation are titled; cultural localisation, team-based pedagogy, student/facilitator trust and facilitator pedagogy. Challenge one, cultural localisation, relates to the clarity of the unit material, localisation becomes important here as understanding can be governed by the degree that the material has been customised to suit to local conditions. The results in Table 1 show that student perception of cultural localisation was neutral (µ=3.4, 3.4, 3.3). Challenge two, team-based pedagogy, relates to content delivered and the degree that students perceive it as useful and relevant. Teamwork forms the major component of delivering content and as such any comment here must take team-based work and activities into account. The student perception of the team-based pedagogy was good (µ=3.5, 3.4). This showed that the team-based activities were well accepted by the student respondents. Challenge three, student/facilitator trust relates to the degree the facilitator understands and can develop a trust relationship with the students. This includes the strong emphasis that students place on assessment and the need of facilitators to elevate the importance of the learning process over the assessment regime. This challenge showed moderate acceptance by the cohort (µ=3.4, 3.6, 3.5, 3.4). The last challenge, facilitator pedagogy, relates to the facilitator being able to adapt from a lecturer-centred pedagogy to a more inclusive student centred facilitator model. This showed slightly stronger acceptance by the student respondents (µ=3.8) Taking these four challenges we can use qualitative student data to further explore the impact of the students’ TNE experience.

Discussion

Cultural Localisation Challenge (Guided by Cultural/Language issues)

The Faculty of Business programs as delivered in Asian and Australian campuses are mandated to be equivalent in rigour but not necessarily identical in content or assessment. This understanding allows for localisation of material for differing locations. The level of localisation in offshore locations is called into doubt by Davis & Olsen (1999) when they found that only 28% of some 82 offshore programs had been customised. Apart from the mandating of equivalence at both Australian and offshore locations there is some question as to the level of localisation that occurs. The dilemma facing Australian educational developers and lecturers is further displayed when we consider the AV-CC’s comments concerning a model of acculturation (Davis & Olsen 1999, p. 99),

“...international students, to maintain standards of academic excellence, need to adapt to the dominant culture, that is, promot[ing] the successful adjustment by international students to life and study at any Australian university, within Australia or overseas”. Davis and Olsen 1999 p. 99

Against this backdrop of the need to customise but maintain equivalence in educational programs the first of three Professional Development units was customised for delivery at Sunway University College in Kuala Lumpur and Johor Bahru. In the case of the two Sunway locations, exhaustive month-long reviews of material were carried out at both Sunway locations. An example of the comprehensive localisation process is given below;

“A suggested to a speech by Malaysia’s former Prime Minister The Hon Tun Dr Mahathir Mohamad on Leadership and Management Demands in the 21st century, and the other is an article by Dr Phil McGraw on ‘What Shaped You as A Person’, which will be helpful in the learning in Week 1. Kindly find these articles attached” Local Lecturer - example of content localisation, December 2008.

A further example shows how the local facilitator participated in amending the content of the PD1 unit.

Assessment 2A: A discrepancy in the duration of the activity. Since this is an initial exercise which might prove to be “Challenging” for students as it is going to move away from the way they have been taught in the past, it might require more time than less - the WebCT states ½ hour whilst the BFP outline indicates 45 minutes. May I suggest an initial 40 minutes and then a further extension of 5
The primary assessment piece centred on how a business may respond to the water shortages current in Australia, upon discussion with the Sunway staff water shortages was not appropriate and the broader climate change problem was adopted for Malaysian students. This was then adopted by the Australian cohort. This shows how the internationalisation of the curriculum can work both ways, as it should.

**Team-based Pedagogy Challenge (All of us are smarter than one of us—Japanese proverb)**

Of the four main generic skills that make up many of the activities and indeed the whole reason for the PD initiative at Victoria University, teamwork presents the most complex set of problems for the curriculum designers as well as for delivering this unit into overseas destinations. Asian international students generally do not have much experience in working in teams or groups (Wong, 2004). The complexity comes about at many levels; non-familiarity with teamwork learning educational pedagogy by overseas students, uncertainty of teamwork assessment procedures, blurring of the edges between team and individual goals and finally necessity to form multi-disciplinary-cultural teams. Teamwork has been a mainstream issue for Australian Universities for some time (Miller & Licciardi, 2003) but it is also high on the agenda of Malaysian corporations. (Quek, 2005)

**Facilitator Pedagogy Challenge (Where are the slideshows?)**

Much of this paper reflects upon learning undertaken by the students, a major consideration is the teaching pedagogy that forms the underlying theme of the PD units and the associated necessity for the facilitators to grasp and feel comfortable and more importantly effective within this paradigm. Whilst this has proven to be an issue in delivering the PD unit in the Australian campuses it is a major issue when locating PD into Asian destinations. It became necessary to insist that the local facilitator was teacher trained and was given intensive in-service both before the teaching visit and during the teaching visit. Team teaching and video-recording both in Australian classes and overseas classes were additional measures undertaken to bridge the gap (shock) at having forty 18-22 years old students for 3 hours. An underlying issue relates to the perceived role of a University lecturer. An intensive generic skill based unit like PD really requires intensive class based activities and interaction with students. Not all university lecturers are comfortable with this delivery style. This is portrayed from the following quote from an Australian lecturer when PD1 was first introduced in 2008 showing how the facilitated class can stretch an academic. When PD1 was introduced into Sunway University College selection of the facilitators was a prime consideration,

“....no, I was uncomfortable without slideshows or complete control over what is happening, I get it but I cannot facilitate what goes on…” Anonymous Academic, Victoria University, 2008

**Student/Facilitator Trust Challenge (Assessment – Assessment)**

The student/facilitator trust issue (Stein, 2009) is addressed by making certain that the normal two-way communication in the lecture/seminar reaches all students, as it is too easy and accepted for some to attend without ever engaging in the class. This becomes crucial in the PD units. These units are intensive workshops/seminars where students work together in teams. An example of the intensive skills base of PD is at the heart of this student reflection, the student is commenting on their fears of presenting in public:

“During the explanation, [I felt nervous and lacked confidence] as I have seldom [given] a speech or explanation in front of the classroom. I did not dare to look at the audience, I did not have eye contact [with] them, I [gave] all my attention to my lecturer only.” Student, PD1 Malaysia, June 2009

Assessment also seems to take an elevated importance and needs to be tailored to ensure originality and to fully test both individual and teamwork components. The perception that Asian educational culture relies heavily on individual testing was evident, further there was a need to introduce students to the concept that teamwork assessment supplanted individual assessment. Importantly there was not a great difference between Malaysian and Australian students in the teamwork versus individual dialogue.

**Conclusion**

The Victoria University Business Faculty undertook a wide ranging review of its course offerings and one of the outcomes was to introduce three new units that replaced discipline based content units and introduced a new teaching/learning pedagogy that of collaborative learning. The two crucial themes that come out of the challenges presented above are relationship and trust building and the need for rapid adaption to the facilitator
led team-based pedagogy. The styles of the Professional Development units that are the subject of this paper require an intensive facilitator-student interaction which is based on the learning process as well as the learning content. The slideshows delivering accounting or economic theories are replaced by teams working on complex business problems trying to critically analyse the issues within a tight deadline. Rolling out this pedagogy into a program that has traditionally been focussed on the lecture/tutorial model requires considerable groundwork to be completed. It is just not possible to “run and gun” a complex unit without adequate infrastructure both hardware, software and most importantly without the support and motivation of the academic staff.

Of the four challenges the team-based pedagogy and facilitator pedagogy were acknowledged by the respondents as being well handled. The cultural localisation was the challenge that was acknowledged as ripe for improvement. Whilst this was the first roll-out the need for more work in this area could lead to increased consultation with local staff as well as the “handing-over” of segments of the course to the local staff. There is little doubt that much discussion on learning activities takes place without a sharing of views, communication is important here. Another important point is the trust that exists between visiting and local staff and that this trust would build over time and would allow cultural localisation to occur seamlessly.

Further work could include more formal focus group qualitative data gathering. The challenges that were identified could be further analysed and fine-tuned. Another approach could be to analyse the generic skills namely teamwork, problem solving, communications and academic skills. Further work could also analyse teamwork problems like “free riding” and the intersection of problems created by gender balanced teams as well as cultural considerations.

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Reflection in Learning and Management Training

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This paper contributes to the faculty staff member’s understanding of the role of reflective assessment tasks in improving students’ efficacy to practice the reflection process. Sobral’s 2001 questionnaire was used to appraise how third year management students’ reflection in learning, changes from the beginning to the end of the semester. Results reveal an overall improvement in students’ efficacy at the end of the semester compared to the start of the semester for both 2008 and 2009 samples which have been impacted by the use of reflective assessment activities. Major feature of the reflective process of the samples is that the vast majority often or always “pondered over the meaning of things studying and learning in relation to their experience”. Significant difference (P< .01) was found amongst students who assessed their level of efficacy as Ample and Maximal at the start of the semester as having a higher tendency to have “carefully planned their learning” compared to Restricted and Partial level of efficacy. The above findings enhance faculty staff members’ capacity to create and manage a learning environment, which promotes student’s deep learning through structured process of self-reflection.

Keywords: Reflection process, learning, efficacy, management training, management students

Reflection as a learning pedagogy

The literature on reflection and reflective practices is prolific and dates back to Dewey (1933). Dewey understood reflective thought as “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (p. 118). Dewey had a big impact on, and set the foundation for, the work of writers such as Boud, Keogh & Walker (1985), Schon (1983 and 1987), and Moon (1999 and 2004).

Reflection, as a multifaceted cognition process, has been linked to the learning pedagogy concept from the perspective of its purpose or outcome. Hence, the concept of reflection has been used in different ways by different writers. For Boud et al. (1985), reflection is an activity in which people “recapture experience, mull it over and evaluate it” which expanded Dewey’s initial concept by adding emotion to the reflection process. Boud et al. (1985) identified key elements in the reflective process comprising the act of thinking about what one has learned as well as how one has learned it. David Kolb (1984) has viewed reflection as an essential element in his four level experiential cycles of learning. Reflection, as a second stage of the learning cycle, is used to understand the effects of the action on the situation and then brought together into a theory that determines which implications for action can be identified. On the other hand, Moon (1999 & 2004) has identified roles for reflection in initial learning, upgrading of learning, and in the process of representation of learning. Reflection has been also used as a distinct step in the process of self-directed, self-regulated learning and summarised its effects on learning improvements (Hammond & Collins (1991). In this context, reflection is conceived, from the theoretical viewpoint, as one of the metacognitive skills or cognitive regulation strategies required for the development of self-regulated learning (Sobral, 2000: 182).

Schon (1983) views reflective practice as a process that contributed to bring the notion into the centre of any understanding of what professional and educators focus on problems and experiment with situations. The notion of “reflection-in-action”, and “reflection-on-action” were central to Schon’s efforts (Schon, 1983; 68). In the same line of thinking, Whitton, Sinclair, Barker, Nanlohy & Nosworthy (2004), perceived reflection as “looking inside oneself or experiences to make sense of or improve the situation and own experiences in it” (p. 220). Whitton et al (2004) elaborated on Boud’s phases by adding beliefs, values and existing knowledge when attending to the incident using what, how, and why questions. Whitton et al (2004) also linked the evaluation phase with future learning and actions.
Teachers, as reflective practitioners, benefit greatly from the reflection process and its value in creating an environment that enhances student learning. This is widely supported in the literature (Sobral, 2001; Harris and Bretag, 2003; Thorpe, 2004; Johns, 2006; Attard & Armour, 2006; Pavlovich, Collins, & Jones, 2007; and Ghaye, 2008). However, this study focuses on the other side of the teaching equation - students and students’ learning. It is strongly believed that designing reflective assessment tasks based around increasing student self-awareness of their strengths and weaknesses, using their own situational incidents and experiences, and through keeping reflective journals and writing reflective essays, students would be assisted in their learning and this would improve their approaches to studying (Branson, 2007). The ultimate objective of the reflective assessment is to provide “reflection enabling attitudes” [(Whitton et al. (2004; 220)] that would enhance and encourage a deeper level of students’ learning. As the Chinese proverb says: “I hear, I forget; I see, I remember; I do, I understand”. It is with this understanding that reflection has been used in this study to foster students’ deep learning.

Previous attempts to measure and appraise self reflection have had a direct bearing on this project. Dejano Sobral’s study of “an appraisal of medical students’ reflection-in-learning” (2000) and Sobral’s study of linking reflection to “approaches to study and academic achievement” (2001) provided the inspiration for this study. Based on perceptions of reflection, Sobral developed a typology that consisted of six levels of reflection in his 2000 study, which was later modified in the 2001 study into four measures of individual skill or efficacy to practice the reflective process comprising: [Sobral (2001: 513)]

- **Restricted**: I actually require extensive additional preparation (orientation, support, evolvement, practice, and feedback).
- **Partial**: I just need incentives and opportunities.
- **Ample**: I have autonomy under favourable conditions.
- **Maximal**: I have full autonomy even under negative pressure (adverse context, no time).

Sobral’s 14-item self reporting questionnaire for the appraisal of self-reflection and four measures of individual efficacy to practice the reflective process (Sobral, 2001) were used in this study as described in the research methodology.

**Research methodology**

It is well recognised that managers and leaders need to reflect on the situation they are facing and its various components before making any choice or taking any action to address that situation. Enhancing decision-making by managers requires learning from their own and others successes and failures and retrieving this experience when dealing with future situations.

**Reflective assessment**

Creating and managing a learning environment, which promotes student’s deep learning through active engagement, provides opportunities for students to learn in a way that suits their preferred style of learning. This has been a core element of my “constructivist” teaching and learning philosophy. As the Faculty staff in charge of the Management and Leadership capstone third year business unit, I have implemented various assessment methods over the past ten years to foster student learning and experience. In the last four years, self-reflection has been utilised as the foundation of the three assessment tasks in the unit. Students are required to complete six self-assessment exercises and write a reflective journal, for each exercise. Completion of two “Management & Leadership Cases” to be chosen from a range of significant situations that a student has experienced in their employment, is the subject of the second assessment task. Students are asked to give a 25 minute presentation, during tutorial time, to the class for each case and this is followed by a written report. A reflective essay is a third assessment task that contains three components including: an introductory “autobiographical” section, content section summarising ongoing reflection on journal writing, management and leadership cases, and topics covered. The final section of the reflective essay is a closing synthesis.
Data gathering

To achieve the study aims, the research design incorporates the 2001 Dejano Sobral’s reflection in learning to assess differences in student’s opinion at the start and the end of the semester. Sobral’s 14-item questionnaire has been used in this study to appraise business students’ self reflection in learning, with minor changes to the scale. A 5-point scale was used instead of a 7-point scale, but the extremes of responses remained the same “never = 1 and “always” = 5. The survey instrument was administered twice; at the start of the semester and at the end of the semester to appraise changes in student’s efficacy to practice the reflective process.

Following ethics approval from the Human Research Ethics Committee in February 2008, data was collected from third year business students during semester one in 2008 and 2009. Participation in the project was voluntary and not part of any assessment task in any unit. Students were recruited during lecture time in both 2008 and 2009. Data collected have been entered into SPSS for Windows version 17.0 and appropriate analysis has been conducted to achieve the project aims and objectives.

Sample characteristics

A total of 24 responses out of 32 students, representing 75% response rate were collected during the first two weeks of semester 1 2008 and another 27 responses were collected during the last two weeks representing 84% response rate for the 2008 sample. In 2009, a total of 33 responses out of 33 students, representing 100% response rate were collected during the first two weeks of semester one and another 27 responses were collected during the last two weeks representing 82% response rate. Students were asked to code their responses in order to allow comparison of opinions at start and end of the semester. However, only 19 student responses were matched in 2008 and 26 responses in 2009 that would enable appraisal of differences in student’s opinion at the start and the end of the semester with regard to reflection in the learning process.

Male students represented 54% of the 2008 sample whereas female students accounted for 52% of the 2009 sample. Three quarters of the 2008 sample completed their secondary schooling in Queensland, Australia compared to 64% in 2009 and sample students who completed their secondary schooling overseas increased from 25% to 36% respectively. As to the age of the 2008 sample, the mature aged students (25 years and over) represented 42% of the sample and those aged less than twenty contributed to one fourth of the sample. The remaining one third was aged between 21-24 years. The 2009 sample had a reverse age composition with those aged 21-24 years representing 55% of the sample and those less than 21 years of age accounting for 30% of the sample. The remaining 15% of the sample were aged 25 years and over.

Research outcomes

This section deals with appraisal of differences in students’ opinion in relation to the learning experience at the end of the semester compared to what they were at the start of the semester. The impact of using reflective assessment in the unit and its relationship with student learning was explored. Research outcomes related to the study objectives were analysed in the following sections:

Overall Reflection in Learning

Sobral’s (2001) 14-item questionnaire has been used to appraise business students’ self reflection in learning on a five-point scale where 1 = never and 5 = always. The major feature of the reflective process of the 2008 and 2009 sample is that around two-thirds often or always “pondered over the meaning of things studying and learning in relation to their experience” (67% and 63% respectively) that was also associated with the highest mean of 3.7 and 3.8 respectively on a five-point scale. Equally, more than half of the 2008 and 2009 sample often or always had “been aware of what they were learning and for what purpose” (63% and 56% respectively) and scoring the second highest mean of 3.6 for the 2008 sample and the highest mean of 3.9 for the 2009 sample. When considering the least used feature of the reflective process of the 2008 and 2009 sample, figures show around half of the sample never or seldom “reviewed previously studied subjects” (58% and 41% respectively), This was also associated with the least mean of 2.5 and 2.8 respectively on a five-point scale.

Figures show a positive increase in student responses to all the fourteen questions, apart from one, when comparing student reflection features at the start of the semester with those at the end of the semester for both 2008 and 2009 sample. The mean for “diligently removed negative feelings pertaining to my studies” received the highest increase in the 2008 sample from 2.8, as the start of the semester mean, to a 3.6 mean at the end of the semester on a five point scale. Whereas “reviewed previously studied subjects” showed the highest increase in the 2009 sample from 2.8 mean at the start of the semester, to a mean of 3.5 at the end of the semester.
Despite the improvement in students’ reflection skills at the end of the semester compared to the start of the semester, paired sample T Test revealed significant differences in only three variables in the 2008 sample and two variables in the 2009 sample (Degree of Freedom ranging between 17 & 25). Statistical differences in responses of the 2008 sample were found regarding “diligently removed negative feelings pertaining to my studies” (P< .01), “exerted my capacity to reflect during a learning experience” (P< .01), and “systematically reflected about how I was studying and learning” (P< .05). In relation to the 2009 sample, statistical differences were found regarding “talked with colleagues about learning & methods of study” (P< .01) and “reviewed previously studied subjects” (P< .05).

**Efficacy to practice reflective process**

Sobral’s 2001 typology of reflection, used in this study, consisted of four measures of individual skill or efficacy to practice the reflective process. Sobral’s Typology of Reflection consisted of Restricted, Partial, Ample, and Maximal efficacies (2001, 513).

Analysing student’s efficacy to practice reflective processes, Figure (1) shows an overall improvement in students’ efficacy at the end of the semester compared to the start of the semester for both 2008 and 2009 samples, which may have been impacted by the use of reflective assessment activities (reflective journals, cases, & reflective essay).

![Figure 1](image)

**Efficacy to practice reflective process at start and end of the semester**

Source: Third Year Business Students Survey Semester 1 2008 & 2009.

Figure (1) reveals Students’ efficacy at the end of the semester has drastically changed in 2008 where only one student (6%) reported restricted capacity, compared to 15% or 3 three students at the start of the semester. Two groups of six students each (33% each) revealed partial and ample efficacy compared to 40% for each at the start of the semester. Five students (28%) perceived themselves as having maximal reflective capacity even under negative pressure compared to 50% at the start of the semester.

As to the 2009 sample, around three quarters (18 students or 78%) appraised their level of efficacy in practicing reflection at the end of the semester as ample compared to half of the sample (or 15 students) at the start of the semester. This represents a massive improvement in the efficacy of practicing reflection. Figures also indicate a drastic improvement in the number of students who appraised their level of efficacy as restricted from four (13%) at the start of the semester to zero at the end of the semester. The number of students who assessed their level of efficacy as partial dropped from one third of the sample (or 10 students) at the start of the semester to only four students (or 17%) at the end of the semester. On the other hand, two students (7%) of the sample appraised their reflection level as maximal at the start of the semester compared to only one student (4%) at the end of the semester representing a negative progress.

**Mapping changes in student efficacy to practice reflective processes**

Although Figure (1) shows an overall improvement in student’s efficacy to practise reflective processes which could have been impacted by the use of reflective assessment activities (reflective journal, own cases, and reflective essay), a closer look and mapping of each student’s progress shows a more ambiguous picture. Unfortunately, half of the students did not answer this question (missing data) and Cross tabulation of the start
and the end of the semester responses show only thirteen students had valid responses in 2008 and twenty-one students in 2009. Figures in Table (1) indicate that out of the thirteen students in 2008, six revealed no change to their efficacy level to practice reflective processes; five had progressed to a higher level by the end of the semester and two students reported going backwards. Of the five students who appraised themselves as having partial capacity at the start of the semester, three of them remained the same whereas two of them have progressed to a higher capacity (ample) of reflective process at the end of the semester as shown in Table (2). However, the seven students who indicated ample efficacy to practice reflective processes at the start of the semester, three of them perceived themselves progressing at the end of the semester, to a maximal efficacy; two of them remained unchanged; one student reported going backwards to partial capacity; and yet another student reported a slide of two scales backwards and classified themselves as being restricted requiring extensive additional preparation. One student who reported as having maximal efficacy of reflective processes at the start of the semester remained the same at the end of the semester.

Regarding the twenty-one valid responses in 2009, figures in Table (1) illustrate that thirteen (62% of the 2009 valid sample) revealed no change to their efficacy level to practice reflective processes, seven (33%) progressed to a higher level by the end of the semester and one student reported going backwards. The three students who appraised themselves as having restricted capacity at the start of the semester, have all progressed to a higher capacity of reflective process (ample) at the end of the semester. Of the seven students who appraised themselves as having partial capacity at the start of the semester, four of them remained the same and three have progressed to an ample capacity of reflective process at the end of the semester. Figures (1) also show that of the ten students who appraised themselves as having ample capacity at the start of the semester; nine of them remained the same whereas one progressed to a maximal capacity of reflective processes at the end of the semester. However, the only student who indicated maximal efficacy to practice reflective processes at the start of the semester reported going one step backwards at the end of the semester to having an ample capacity of reflective process.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>2008 End of Semester Sample (N=13)</th>
<th>2009 End of Semester Sample (N=21)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start of Semester</td>
<td>Total</td>
</tr>
<tr>
<td>Restricted</td>
<td>0 0 0 0 0 0 0</td>
<td>3 0 3</td>
</tr>
<tr>
<td>Partial</td>
<td>0 3 2 0 5 0 4 3 0 7</td>
<td>9 1 10</td>
</tr>
<tr>
<td>Ample</td>
<td>1 1 2 3 7 0 0 9 1</td>
<td>10 1</td>
</tr>
<tr>
<td>Maximal</td>
<td>0 0 1 1 0 0 1 0 1 0 1</td>
<td>21</td>
</tr>
</tbody>
</table>

Source: Third Year Business Students Survey Semester 1 2008 & 2009.

Discussions

Research from the behaviourist paradigm suggests that reflection improves cognitive thinking abilities and is subsumed within the critical thinking construct in many disciplines such as education and nursing (Kuiper and Pesut, 2004). Business leaders also use reflection to assess the impact of their decisions and the development of authentic leadership is contingent upon the leader having explicit knowledge of their values so that they can act in accordance with these values (Branson, 2007).

Using Sobral’s 2001, 14-item questionnaire to appraise business students’ self reflection in learning, reveals an overall improvement in student’s efficacy and reflection in learning at the end of the semester compared to the start of the semester in both 2008 and 2009 samples. A major feature of the reflective process of the 2008 & 2009 samples is that two-thirds often or always “pondered over the meaning of things studying and learning in relation to their experience”. On the other hand, figures show around half of the sample never or seldom “reviewed previously studied subjects” making it the least feature of the reflective process. Student efficacy levels had also increased at the end of the semester where 61% and 82% of the 2008 & 2009 samples respectively, assessed themselves as having ample or maximal efficacy level compared to 45% and 55% respectively at the start of the semester.

The above changes in students’ efficacy to practice reflective processes at the end of the semester compared to the start of the semester in both the 2008 and the 2009 sample are similar to Sobral’s (2001) findings as outlined.
in Figure (1). There has been a decrease (improvement) in the number of students who assessed their efficacy level as restricted at the start of the semester compared with figures at the end of the semester. This also coincided with an increase (improvement) in the number of students who reported their level of efficacy as partial, ample or maximal at the start of the semester compared to the end of the semester (especially in 2008). The number of students who reported maximal was steady and showed little movement in 2009. The above findings enhance faculty staff members’ capacity to create and manage a learning environment, which promotes student’s deep learning through structured process of self-reflection. Hence, active engagement in assessment tasks does provide opportunities for students to learn in a way that suits their preferred style of learning.

There are some limitations of this research. First, this study is heavily dependent on student self-reporting of their self-reflection and their individual efficacy to practice the reflective process. It is therefore subject to the degree of accuracy in students’ assessing self efficacy. Second, although students were assured anonymity and confidentiality, some students may have provided socially correct responses. Third, maintaining anonymity meant that changes to students’ reflection efficacy at the start and the end of the semester could not be linked to their individual performance in this subject. Fourth, it is also possible that students’ understanding of the reflective processes has been enhanced as a result of learning more about and practicing of the reflective process resulting in a more accurate assessment of self efficacy at the end of the semester compared to the start of the semester. Fifth, not knowing who the students actually are makes it difficult to shed light on neither students’ attendance in the unit, completion of the assessment reflection tasks nor their progression in the unit. Finally, having a very small sample meant that limited analysis could be performed and results could not be generalised. The small sample size became more problematic when cross tabulating two variables with missing data, at the start and the end of semester, resulting in further reduction in the sample size.

In spite of similarity of these findings with Sobral 2001, more research is needed to consider any of the following. First, research with a larger sample incorporating business programs in Australian universities is needed. This research would enable drawing conclusions and generalise results regarding Australian business student’s efficacy to practice reflective process. Second, a longitudinal study comparing students’ efficacy levels to practice reflective process in semester one of their three year degree with their final semester of final year is also needed. Third, further research comparing business students efficacy levels with students in other disciplines, over a period of time, is also recommended. Fourth, linking student’s efficacy levels with student’s performance and grades in each assessment task is highly recommended.

References


Metaphors and Pair Programming as a Constructivist Strategy in Computing Education: A Literature Review

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Learning computer programming has been a struggle for the first year computing students. Programming demands complex cognitive skills and educationists in higher education faced difficulties to impart the abstract concepts of programming in the curriculum. The widespread use of metaphors in linguistics such as poems, poetries and idioms has provided an instructional platform to express the meaning of one thing in relating to another. This study gives an overview of the problems encountered during teaching, the use of metaphors in providing abstract natural phenomena explanations and how pair programming helps the students’ learning and understanding. This paper suggests that metaphors and pair programming have the potential to foster the students’ understanding and to enhance their programming comprehension at the tertiary computing education. Furthermore, metaphors and pair programming are seen as an essential methodological paradigm in the constructivist classroom delivery.

Keywords: Metaphors, pair programming, computer programming, tertiary computing education

Introduction

Computer programming, being an essential part of computer studies curriculum is the main stumbling block for most students, especially in the first year of study. Covering basic programming concept is one of the three primary pedagogical goals of teaching programming, besides programming design skills and creative thinking. Mastering the programming concept is critical as it prepares students for the next higher programming courses and vitally important in today’s business world.

The first year computing students find programming as an abstract module complicated to learn. Often, students approach program problems line by line (Winslow, 1996), and they are frustrated when fail to solve the given programming problem as a complete system (Rodrigo & Baker, 2009). Students have been struggled to comprehend the procedural programming (3rd generation language) and appear even worse when learning the object-oriented paradigm.

There are empirical studies on metaphorical approaches and pair programming for programming education (Keranen, 2005). Metaphors as visual expressions such as diagrams, free-hand sketches, icons or graphical manipulators are used in visual programming (Vob, 2009). The empirical evidence indicated the significant benefits such as understanding and learning the abstract and concepts of the field resulting from diagrams used in programming.

In software development industries, programmers have been working in pairs on the particular project. It has shown significant improvement in terms of quality codes produced and reduction of coding time spend on development. Therefore, educators need to reconsider the usage of metaphors and pair programming towards the learning of programming concepts in order to achieve better programming performance.
Problem Background

Programming demands complex cognitive skills and it has always been difficult for students. Research suggests that planning, logical reasoning, problem solving and analytical thinking which are part of the complex cognitive skills play their role in the process of learning to programme (Miliszewska & Tan, 2007). Fincher (2006) and Soloway (2003) noted that problem solving and critical thinking are both the ultimate skills required in following programming courses.

Problem solving skills which include reasoning and analytical thinking are needed to analyze a given problem. Students then need to understand the various problem presentation tools and programming languages before applying them effectively and correctly in the given programming scenario. Prior to these, practices could be a major source of obtaining cognitive skills which involved planning, critical thinking and reasoning strategies. Nevertheless doing lots of practices are the way of learning how to programme. However, this could not mean that novices could master programming in such a short duration as it takes about ten years for them to become expert programmers.

The learning and teaching sequence of computer programming concepts start from syntax, and proceed to semantics and pragmatics (Figure 1) in order to guide students effective strategies for the whole programming processes. Another type of knowledge concerns the learning meaning of the language construction and principles which govern the semantics of programming actions. Pragmatics is the most complex knowledge which students need to acquire while learning programming. This knowledge is necessary not only to recognize problems but to decompose it in order to design the phases which will subsequently be programmed. Therefore learning of the basic concepts is often emphasised as these form the basic for building more advance skills.

![Figure 1: Hierarchy of learning programming languages](image)

In this study, eight subject experts conducting programming courses were interviewed in order to gather the problems faced by them with regard to teaching programming modules and their views on the difficulties encountered by the first year computing students. These main difficulties regarding the delivery of programming courses were identified during the interviewing session as stated in Table 1.

<table>
<thead>
<tr>
<th>Difficulties encountered by lecturers:</th>
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<tbody>
<tr>
<td>(i) Programming syntax and concepts are difficult to comprehend and master</td>
</tr>
<tr>
<td>(ii) Lacking of problem-solving and analytical thinking skills</td>
</tr>
<tr>
<td>(iii) Ineffective use of programme structures for problem solving</td>
</tr>
<tr>
<td>(iv) Difficulties in understanding that each instruction is executed in the state which has been created by the previous instructions</td>
</tr>
<tr>
<td>(v) Inadequate approach on the effectiveness of the languages (pedagogical or industry standard), paradigms (procedural, functional or object oriented) and teaching methodologies (“objects first” or “object later”)</td>
</tr>
</tbody>
</table>

The outcome of the above interview survey is similar to that in the literature on computer programming (Robins, Rountree & Rountree, 2003). Lecturers are adopting numerous approaches to the teaching of programming. Through non-participant observation of lecturers and also from interviews with faculty, they conclude that teaching methods are very similar in the literature. The approaches are lectures, reading and practical exercises of each lesson explaining basic concepts which focuses on the “what” and “how” – the low level knowledge or known as the declarative and procedural knowledge (McGill & Volet, 1997).

Shih and Alessi (1994) believe that by over emphasis on the “how to” may not facilitate the transfer of what is learned to novel situation as it does not highlight the knowledge underlying such skills. However, over emphasis on the “why” could result in a mismatch between instruction and hands-on practice, although learners are providing with a wider range of knowledge base which can be applied in a variety of contexts. Students have been guided by the way of formal instruction in the classroom, in acquiring the “how to” skills of programming, but have not been assisted to understand the “why”.
Computing students who are lacking in understanding of a mental model of a computer often result in much frustration when they are expected to not only construct a programme but to make it work (Ben-Ari, 1998). This gives students the difficulty to imagine, comprehend and relate abstract terms such as variables, data types or memory addresses to the real life objects.

The importance of “self understanding” and “teaching and tutoring” have forced a revaluation of how programming is taught with new and innovative approaches being developed which are a variation on the direct instruction approach. Educators involved in the teaching of programming need to reconsider their approaches to teaching in light of current theories on cognition.

Skills in Teaching and Learning Programming

Developing a programme involves steps similar to any problem solving tasks. Defining the problem, planning the solution, coding, testing and documentation are the five main ingredients in the programming process. Computer programming is a subject which demands complex cognitive skills such as reasoning, problem-solving and planning that requires students to understand the programming process, as shown in Figure 2.

Grant and Smith (2005) described basic programming concepts as a set of rules, like expressions, functions, variables declarations, statements, sequencing and conditionals which students find them difficult and struggle to comprehend. As such, the teaching and learning process usually begin at syntax then progress to semantics and pragmatics, as shown in Figure 1. Syntactical knowledge is needed to express specific facts regarding a programming language and deals with the rules governing its use. Another type of knowledge concerns learning the meaning of the language construction and principles which govern the semantics of programming actions. Bayman and Mayer (1988) stated that by acquiring the syntactical knowledge of language features, first year programming students are able to design programmes. The most complex knowledge which learners need to acquire pertaining to programming is pragmatics. This knowledge is not only to recognise problems but also to decompose it in order to design the phases which will subsequently be programmed.

The outcome of an assessment carried out by the researcher at a local private college indicates that the critical skills needed in learning to programme are problem-solving, analytical thinking and basic communication for obtaining the fundamental requirements from users before starting to code. Because of these shortages, the students are incapable of understanding the logic flow of the software functionalities and consequently have an effect on analysing the programming problems. Samer, Alizadeh and Mohamed (2006) stated that good problem solving skills and a thoroughly organised knowledge of a programming language are needed in order for programmers to become competent. Samer et al. (2006) and Robins et al. (2003) agreed that knowledge of basic programming concepts, problem solving abilities and oral communication skills are vital in programming education.

Problem solving is a complex process. Gagne (1985) defined problem solving skills as the capability of applying various guidelines, principles or rules in solving novel problems. According to Jenkins (2002), problem solving requires a number of skills including identification of the problem, recognition of relationships,
familiarity of situations and patterns, development of an algorithm to the problem and translation of an algorithm into executable codes. Dijkstra (1989) argued that programming has an abstract nature characteristic which is not easily associated to the existing knowledge or also known as “radical novelty”. The process of problem solving is to identify the connectivity between the existing knowledge (previous experience) to the current problem and to derive for a solution (Mayer, 1992). Mourtos, DeJong Okamoto and Rhee (2004) however identified problem solving as a process to achieve the best outcome from unknown constraints.

Riley (1981) concluded that many first year computing students have “woefully inadequate” problem solving skills. Problem solving and analytical thinking are greater drawbacks of students and that the main subject to be discussed in computing courses would be to emphasize these two skills. Henderson (1987) stated that the key to effective design-oriented problem solving is learning to use abstraction. Students are to be provided with tools such as program flowchart, Pseudocode and basic programming concepts like variables declaration, selection and iteration for thinking abstractly. These are the foundations which must be established in the process of learning programming.

Masheshwari (1997) argued that programming is a study of analytical thinking and problem solving. It allows students to practice at constructing representations and operating in a methodical manner. Figure 3 shows the steps of converting human thought into programming. Converting the problems to a formal method, for example, program flowchart or Pseudocode, becomes simple when students are capable of conceptualizing the problems clearly through the use of natural representation.

Metaphors as Conceptual Model to Facilitate Learning

Metaphors involve the presentation of a new idea in terms of relating the new idea to the existing knowledge. As such, metaphors have been widely applied in linguistics, poetries, mathematics and animation programme learning. Besides, metaphors have been extensively used in areas with general concepts such as user-interfaces based on desk, scissor and trash; meta-mathematical theory (calculus for functional programming; design patterns are based on building and architecture (Williams & Wake, 2007).

Petrie and Oshlag (1993) established that metaphors as an instructional strategy used to create new concepts in a form of a triangular process (Figure 4). Students identify anomalies between the existing knowledge and new
information presented by the metaphor, and produce new knowledge by linking their model to accommodate both sources.

As it shows in the above diagram, the representation is the actual idea of the sign which the students encounter and seek to understand the general sign completely. The representation of the sign consists of the vehicle of the chosen metaphor and the vehicle represents the tenor. In this case, the pigeon hole is the representation. The referent of the sign is the concept which an idea is being referred to by those students who encounter it. In this case, memory location is the referent, as the pigeon hole represents, refers to or stand for memory location. Lastly, the interpretant of a sign is the concept or thought which arises in the mind of the student who interprets the sign. It is also known as the complete metaphor. The interpretant in this case concludes as “memory location is like a pigeon hole”.

Metaphors play a major character in literature and poetry in particular. Thus, metaphors are a figure of speech in which link relationship between the known and the supposedly unknown concepts (Cazeaux, 2007). It is a tool used deliberately in communication to achieve specific effects – most notably in education. Education is a process of conveying new knowledge to students in a way which they will be able to learn, understand and relate the new knowledge to what they have already known (Yu, 2007). As such, educators use metaphor for communicating novel concepts, where by students identify anomalies between their existing knowledge and the new information presented by the metaphor (Figure 5), and develop new knowledge by connecting their existing knowledge to accommodate both sources (target and source).

A use of metaphor in computing lies in support for problem solving. When users face computer device problems, they solve these problems by linking the known concepts (existing knowledge) to solutions which apply in the metaphor domain. Therefore, computer programming languages support complex problem solving and interaction between programmers and users. When solving computer programming problems, the programming language acts as the solution medium and the problem solving representation. Metaphors are therefore the effective tools for learning the basic programming concepts in solving programming problems, by developing clearer “mental visualisations” of the novel concepts to reason about abstract situations (Flanik, 2008).

Application of Conceptual Metaphor in Programming

Metaphor is a high level abstract concept that significantly aid the formation of interpretation and application of knowledge by linking and relating the novel concepts of basic programming to the students’ existing knowledge. Frequently, it shows the connectivity between the known and the unknown. Subsequently, a mental model of the new concept being introduced will be developed based on the existing knowledge and experiences gained (Figure 5). Two conceptual metaphors, (i) the Cash Register Machine metaphor and (ii) the Children’s Shape Toy metaphor are examples used to illustrate the meaningful variables and assignment in programming.

(i) Cash Register Machine Metaphor – Meaningful Memory Variable Name

Variables have characteristics such as (i) every variable has a name, (ii) every variable has a type and (iii) every variable holds a value that has been assigned to that variable. Variables needed in programme are to
be declared (defined) prior to the usage. The purpose of variable declaration is to inform the programme of the variable’s name and data type. A programme may use many variables, as such meaningful names must be assigned to them so that the programme can easily keep track of them.

This metaphor uses the **cash register machine** concept (Figure 6) whereby each slot in the cash register machine is placed with a designated value (object). Other values can not be placed into this slot. For example in Figure 6, RM10 is placed into the slot named “dollar10” and 20 cents is putted into the slot named “cent20”. Therefore, either cents or dollars are to be placed into the assigned slot only. These slots have been given the names which are meaningful in representing the value stored in them.

![Figure 6: Cash Register Machine as Meaningful Variables](image)

In example Figure 7, the meaningful name of one storage (memory) location is **price** that storing the value of a book. Another meaningful storage location named **quantity** which stores the numbers of book copies purchased. The end value of arithmetical operation will be captured in one storage location called **payment**. Lastly, the value stored in memory location named **payment** will be displayed on screen.

(ii) **Children's Shape Toy Metaphor – Memory Variables Assignment Statement**

A **classic children's toy** (Figure 8) is used to illustrate how assignments statements work. In Figure 9, an integer shape can be stored in an integer hole or a real hole. However a circle shape (where it is a string or a character shape) cannot fit into either a real or integer hole. On the other hand a character shape can fit into a string but not vice versa. This can be further elaborated by saying that every shape is to be placed into the hole. A direct relation to every memory variable is to be assigned to the data type.

![Figure 8: The children's shape toy](image) ![Figure 9: Shapes representing data types](image)

**Pair Programming as Cooperative Learning**

Pair programming was introduced by Ken Beck, Ron Jeffries and Ward Cunningham (2000) which is a structured form of programme cooperation. It has been applied in software industry to increase programmers’ productivity and programming skills; and in education to increase learning. Pair programming is a style in which two people work together at one computer station. They persistently cooperate on the design, algorithm, code and test. One person acts as the “driver”, writes the design or types at the computer; the other person acts as the “navigator” who observes, guides his partner and actively engages in selecting the best methods for coding the programme. The navigator is to simultaneously scan for defects in the codes of his partner. Furthermore, the driver and the navigator communicate and brainstorm at any one time. Periodically, these roles are switched between the driver and the navigator.

Research results indicated that paired students develop higher quality codes in less time when compared to those who worked individually (Abdullah Mohd Zin, Sufian Idris, Nantha Kumar Subramaniam, 2006). These results prove that pair programming positively impact students’ learning. This strategy has been adopted in some industries to increase productivity and in education to increase learning (Van, 2004). Researchers observed the educational benefits in students being paired such as (i) superior results on graded assignment, (ii) increased satisfaction, (iii) reduced frustration and (iv) increased confidence on project results. Hamer (2006) indicated that this pair programming strategy also reduced workload of the teaching staff. Instructors at the University of California-Santa Cruz have reported on the use of pair programming as a cooperative technique in an
introductory undergraduate programming course. They concluded that pair programming improved retention rates and programming performance (Meseka, Nafziger & Meseka, 2010).

Gillies (2007) noted that cooperative activities in classrooms typically offer richer social interaction, effective communication and better productivity in programme development. Furthermore, the activities provide valuable experience in cognitive apprenticeship and social enculturation in which the students have the opportunity to cultivate their social interaction skills. These skills are necessary for success in future professional life.

Instructional approach which emphasizes on both cooperative techniques and structured design concepts significantly improves the ability in designing programmes, enhances programming performance and improves students’ attitude towards programming (Romeu & Alemzadeh, 1998). Likewise, McKinney and Denton (2006) found significant improvement in achieving higher order thinking skills in programming, which included semantic programming knowledge for students in pair programming activities.

Conclusion

Learning programming is not in relation to the language syntax, it concerns the abilities and capabilities of problem solving, analytical and oral communication. The prime challenge for novice programmers is not pertaining to the understanding of the basic programming concepts but the application process. This is because very often the students know the programming syntax and semantics of individual statement; however, they do not know how to combine them into valid workable programmes. This puts students at a disadvantage as they do not know where to start. Therefore, students find programming to be too difficult and disheartening. With these in mind, they eventually developed negative attitude towards the course. As a result, educators find programming a very difficult skill to teach. The empirical study revealed that programming requires complex cognitive skills such as planning, reasoning, problem solving and analytical. Problem solving skills which include reasoning and analytical thinking are needed in analyzing the given programming problem before applying the programming languages effectively and correctly in the scenario. Thus, educators who have been involved in teaching programming concepts to the first year computing students have tried in vain to cultivate students’ understanding in the fundamental area of semantics which is the programming comprehension.

As such, the use of metaphors to teach fundamental programming concepts could increase the students’ enthusiasm and understanding for a course that first year computing students often find abstract to difficult to master. By linking the existing knowledge to the unknown, metaphors promote better understanding of the different situation and building a “mental model” of different solutions to the given programming scenarios. Pair programming on the other hand, encourages students to find solution to the given problems. They work in pairs to discuss, generate ideas and provide continuous constructive criticisms.

As teaching is entirely focusing on the learning pace of students and their capacity of learning to apply the acquired knowledge, students should be fully accountable over their learning process. Therefore, the essential instructional strategies such as metaphors and pair programming could be considered as an alternative methodology to be incorporated in programming education.

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Effects of Teaching Paraphrasing Skills to Students Learning Summary Writing in ESL

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This study examines the effects of teaching paraphrasing skills to students of tertiary level on summary writing. Twenty two students of lower intermediate level of proficiency in English were used in the study. A piece of summary writing task requires critical thinking skills to produce effective and concise writing. The nature of the task is basically constructing a general conceptual framework from the analysis of the passage and synthesis of specific information of it. This study analyses perceptions of students when handling a summary writing and the awareness of their learning and thinking. Inquiry-based learning (IBL) is used as a strategy to encourage independent thinking when doing summary writing in the classroom. The results from the study indicated that the skills did not help the students equally. Students’ perception of their confidence in their learning abilities and the task assigned may not accurately reflect the paraphrasing skills.

Keywords: ESL, Inquiry Learning, Teaching Strategy, Paraphrasing Skills

Introduction

Summary writing is an important skill for students to learn in English as Second Language (ESL). This allows them to paraphrase and summarise what they have read at the same time interpreting what they have understood from the passage. This is an important exercise to enhance their comprehension skills. Summary writing is perceived as a challenging task for most students with limited vocabulary. The process of changing in wording seems to be complex when students have to present the same meaning in some way which Hood (2008) discovered. Therefore, identifying key concepts of the materials and applying skills of paraphrasing sentence structures to make the end product precisely condensed reflecting the same emphasis is difficult for them. Studies in this area suggest that approaching the process of paraphrasing using a step wise metacognitive structure (Kirkland & Saunders, 1991) may be effective. However, when relating this to the importance of students becoming aware of how they think, the stepwise process seems prescriptive at best. Further to this Choy and Cheah (2009) noted in their research that it is important that students learn to begin evolving their thinking process using the higher levels of Blooms taxonomy, that is, analysis, synthesis and evaluation.

In the model of development in reflective thinking (Hamilton, 2002), an area that is critical for reflective thinking is awareness of how one learns. This is the process where individuals reflect on their concepts and misconceptions, knowledge construction and metacognition where the individual is able to understand their own learning process. Learners who become reflective in their learning can control the learning process and become more effective learners (Sezer, 2008).

Teaching Paraphrasing Skills in Summary Writing

It must be noted that learning involves fundamentally three components: affective, behavioural and cognitive (Sternberg & Williams, 2002). A majority of Malaysian classrooms emphasise the cognitive and behavioural components at the expense of the affective component of learning which deals with individual awareness of learning (Choy & Cheah, 2009). Inquiry based-learning (IBL) is useful in creating this awareness of what they learn and how they learn (Choy and Oo, 2009). Teachers need to encourage them to be expressive in terms of their thinking and be participative in the lesson through various strategies of IBL (Windschitl 2002). This
requires planning, implementing and evaluating the ESL lesson to take advantage of their background knowledge and gradually leading students to be participative in the classroom. Other than that, the IBL also helps in scaffolding (Vygotsky, 1978) the learning of a student so as to enable them to become proficient learners.

The initial stage of summary writing is planning, which includes goal setting, strategy selection and core idea formulation (Kirkland and Saunders, 1991). The goal of the initial stage is to guide students to see a relationship between the text and the demand of the task. IBL sets in by first guiding students using the top down approach to identify key vocabulary terms through contextual clues that are essential for evaluating a passage. Not only do students have to comprehend and make sense of the passage, they have to make interrelationships between the text and the real world simultaneously (Carrell, 1984). Subsequently, questions are used to guide students to scan for significant key points to meet the demands of the writing task. This helps to organize a condensed representation of the relevant information from the passage given. Further to this, the grammatical correctness, word substitution, phrasal substitution with single word and elimination of examples and irrelevant details are some of the paraphrasing skills in summarizing of points throughout the composing process. Furthermore, one of the deficiencies of the process maybe students’ focus on reflecting the subject matter could be far less than it is expected as students have shifted most of their attention to paraphrasing the readings (Durst, 1989). As a result, the effectiveness of paraphrasing may be strong yet it may cause students to lose sight of the requirement of the task.

The Present Study

This study hopes to highlight the perceptions students have when taught learning skills of summary writing. There is little attention that has been given to whether students perceived these strategies as effective and are able to apply them to help them in summary writing. The two research questions (RQ) that underpin this study are:

RQ1 How do students perceive the effectiveness of the paraphrasing skills that were taught to them during their summary writing classes?

RQ2 Did the results from the tests administered to the students reflect their perceptions?

The study was carried out using the qualitative approach in which a sample of 22 students who are pursuing a diploma programme in a Malaysian institution of higher learning. The students were interviewed as a group after every class to get their feedback on the strategies that were taught to them. These students were encouraged to be vocal with their thoughts on the skills.

Method, Design and Procedure

Two tests were administered to each of the students in the sample, the Myself as a Learner (MALS) (Burden, 2000) and a teacher made test on summary writing. The Myself as a Learner test contains 20 statements relating to students’ perception as learners and problem solvers. The students are required to choose one out of five possible responses ranging from (a) yes, definitely to (e) no, definitely not for each statement. Scores were allocated to each statement on a basis of 1(most negative) to 5(most positive). That is response (a) receives 5 points and response (e) receives 1 point, except on the case of negatively worded statements where the scores would be reversed. The final MALS scores are interpreted based on the ten factors. These factors were enjoyment in problem solving, confidence (about work), confidence (about learning ability), taking care with work, (lack of) anxiety, access to and use of vocabulary in problem solving, confidence in dealing with new work, confidence in problem solving ability, verbal ability and confidence in general ability. Each score obtained under each factor is calculated by adding the scores of different statements.

Meanwhile, selection of the text for the summary writing test was done keeping in mind both the external and internal constraints of the students. The external constraints were familiarity, complexity and length of a passage whereas students’ level of proficiency, background knowledge and affective domain were the internal factors that were taken into consideration. Students were required to compose a summary of 50 words based on a 288-word passage within 30 minutes. This teacher made summary test was used as the pre-test and post-test.

The first MALS was administered in Week 1 according to the academic semester calendar followed by the pre-summary writing test, which was given in Week 2. They were then taught the paraphrasing strategies and
summary writing skills for a total of 10 weeks. At the end of the week 10, they were then given the two tests again to determine their progress in acquiring the strategies and skills that were taught to them and changes in their perceptions as learners if any.

The results obtained led us to use the interpretive approach as well as the frequency analysis of the results. The statements made by students were read and re-read until common themes emerged. These themes were then analysed so that topics could be grouped under a common category according to the degree of familiarity with the themes (Radnor, 2002). They were then used to answer the research questions.

**Results**

**RQ 1: How do students perceive the effectiveness of the paraphrasing skills that were taught to them during their summary writing classes?**

a) The paraphrasing exercises are difficult

All the students perceived that the paraphrasing exercises were difficult. The exercises given were challenging for them to paraphrase although cues were given to help them. For example, student K commented:

“The key words were given but there were some of the sentences that I could not manage to change the sentence structure.”

Students found it hard to pick the main ideas. All the students felt challenged to paraphrase without altering the original meaning. For instance, Student S commented:

“I did not know which sentences I needed to pick and what was more difficult was to paraphrase the sentence without affecting its original meaning.”

**Discussion**

The effectiveness of paraphrasing skills may be affected by the level of difficulty of the exercises given to them. Essentially, the exercises were tools to guide the students to practice. Students perceived that they needed to comprehend the passage first and next, select the core ideas to paraphrase. This would seem to support the research done by Carrell (1984) who found that students have to comprehend and make sense of the task prior to scanning for significant key points to meet the demands of the writing task. Even though cues were given in helping them to meet the demands of the task, students found it difficult to paraphrase.

b) The paraphrasing skills are helpful

36% of the students found that the skills were helpful to them when paraphrasing without changing the meaning of the original sentence. According to the students, after several exercises of paraphrasing were given, they learned more on how to paraphrase. For example, Student G commented:

“It is helpful for me to handle my summary writing task although I managed to try paraphrasing only some of the sentences.”

Likewise, Student D commented:

“I had improved in paraphrasing when I was doing the exercises.”

**Discussion**

When students are paraphrasing the core ideas, paraphrasing skill was needed to help them to improve in their writing. Due to the nature of the task which requires students to analyse, synthesise and evaluate the information given, higher order thinking is needed. This would seem to support the research done by Choy and Cheah (2009) found that students begin to evolve their thinking processes when using higher order thinking skills. Instead of copying from the original passage, students practiced using the paraphrasing skill to do the exercises. Therefore, students perceived that the paraphrasing skills were useful for them.

c) Inadequate practice of the skills

All the students perceived that they needed more practice to enhance their paraphrasing skills. They perceived that with more practice, they could improve themselves in writing. For instance, Student M commented:
“I need more of such practice so that I can write a sentence in a different way.”
Similarly, Student A said:

“The paraphrasing exercises done in the class have helped me to apply it into any writing tasks but I need more to improve my vocabulary and writing skill.”

Discussion

All students perceived that with more practice of the skill, it can help them to improve in their writing. Although students felt that the exercises were difficult, they perceived that they needed more to enhance not only their writing skills but also to improve their vocabulary.

d) Confusion on how to apply the skill

38% of the students were not able to apply paraphrasing skills into the summary writing test. It was noted that the students were not sure on how to paraphrase. This confusion was noted when Student R said:

“I did not improve in my summary writing. I did not know how to use the skills to help me in the summary given. Instead, I copied most of the sentences directly. I am confused whether the sentence is correct even after I have paraphrased that sentence. I am not sure whether the words I have used would have distorted the meaning of the sentence.”

Student K also commented:

“I need some clues to guide me in choosing the correct sentences to paraphrase. It does help when the teacher guides me to highlight the core ideas and later, how to paraphrase with the key words provided. It is easier for me to paraphrase a short paragraph.”

Discussion

Students perceived that they were confused with how to apply the paraphrasing skill when no keywords were provided. They would rather lift the sentences directly from the original passage than to paraphrase them. The confusion hinders them from taking risk when using the paraphrasing skills. This finding seemed to support the research done by Hood (2008) who found that the paraphrasing exercise could be a complex process of what seems to be a straightforward task. When students considered any paraphrasing necessary to emphasise the same meaning in some way, they were confused about how to use the skills because of the complexity involved in the process of paraphrasing.

e) Students’ limited vocabulary

Students perceived that the exercises on vocabulary substitution were challenging because of their limited vocabulary. It could affect the effectiveness of the paraphrasing skills as commented by Student J:

“The vocabulary substitution part was almost unmanageable. I could not think of any words to replace a phrase as my vocabulary is limited. That is why I do not know how to replace a phrase with a word to make the sentence more concise. In fact, I couldn’t do most of the questions.”

Student H commented likewise:

“Because of my poor vocabulary, I do not know how to paraphrase a sentence. Sometimes I chose to copy a sentence directly from the original passage as I was not able to paraphrase the sentence.”

Discussion

The poor vocabulary was a constraint for all the students when paraphrasing. They perceived that the exercises on vocabulary substitution were difficult and could not do most of the questions. Students felt that they needed to identify and evaluate the core ideas using the key vocabulary terms before they could paraphrase. This seemed to support the research done by Kirkland and Saunders (1991) who found that identifying key vocabulary terms are essential for evaluating a passage. As a result, students perceived that because of their limited vocabulary, they were not able to paraphrase.
RQ 2: Did the results from the tests administered to the students reflect their perceptions?

The results of the students’ performance in the summary writing tests and MALS were grouped into three categories as follows:

Table 1 Students with improved Summary Writing and MALS scores

<table>
<thead>
<tr>
<th>Factor</th>
<th>Average Summary Writing Score</th>
<th>Average MALS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>Factor 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>Factor 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>1 14 15 12 6 6 5 6 3 3 6</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>17 17 15 7 6 6 6 3 3 7</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>16 16 14 7 5 5 6 2 4 6</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>17 18 16 8 7 6 6 3 4 7</td>
</tr>
</tbody>
</table>

Discussion

As shown on Table 1, there were 36% of the students who performed better in their post test. The results of MALS showed that there were on average few changes with the exception of Factor 1 and 3. 36% of the students perceived that the skills were helpful to them and they had improved in their paraphrasing skills. It would seem to suggest that these students perceived that they had more confidence in their learning abilities and found enjoyment in doing the paraphrasing exercises and this was reflected in the results obtained.

Table 2 Students without improvement in Summary Writing scores but improved MALS scores

<table>
<thead>
<tr>
<th></th>
<th>Average Summary Writing Test Score</th>
<th>Average MALS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>Factor 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>Factor 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>1</td>
<td>14</td>
<td>16 16 14 7 5 5 6 2 4 6</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>17 18 16 8 7 6 6 3 4 7</td>
</tr>
</tbody>
</table>

Discussion

41% of the students did not show improvement in their summary writing post test but there was improvement on average in their MALS score as shown on Table 2. The MALS scores of Factor 2 and 3 showed the most increment in comparison with others. They perceived that they had more confidence about the assigned exercises and the results also indicated that students felt they had more confidence about their learning ability.
Although they perceived that they had more confidence, these perceptions did not translate into actual performance in their post test.

### Table 3 Students without improvement in Summary Writing and MALS scores

<table>
<thead>
<tr>
<th>Factor</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>10</td>
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<tr>
<td>2</td>
<td>18</td>
<td>18</td>
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<tr>
<td>3</td>
<td>17</td>
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<td>4</td>
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<td>7</td>
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<tr>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

**Discussion**

Five students did not show improvement in either Summary Writing or MALS scores (Refer to Table 3). Students perceived that they had lesser confidence about the assigned exercises and their problem solving abilities. The results reflected in MALS where students had less confidence about the assigned exercises and their problem solving abilities could be the reasons for their poor performance in their post test.

**Conclusion**

The paraphrasing skills did not seem to help all the students equally. Only 36% had benefited from learning of the skills and 77% had improved in their MALS Score. The average Factor scores in MALS showed they had more confidence in their learning abilities, enjoyment of the tasks and the tasks assigned to them. However, this was not reflected in the post test results. Only 42% of the students showed improvement in their results. Students may not be able to translate their perception of their learning abilities into actual performance. Therefore, what students perceive of the assigned tasks and their learning abilities of the task may not be an accurate indicator of the actual performance in a task. It would seem that teaching paraphrasing skills may only be effective for some students when it comes to actual performance of the task. Further research needs to be carried out on how well students can learn the skills and retain them. In addition, a study could be carried out on the effects of different teaching methodologies that is best used for helping students. Currently in this study we only used IBL as the strategy to teach paraphrasing skills to students.

**References**


Giving Students the Edge: The Impact of a Student Mentoring Service on a Student Mentor’s Personal and Professional Development

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The introduction of student mentoring schemes is not an entirely new concept to undergraduate programmes in UK universities. In recent years the importance of this type of support has been examined and is considered a particularly significant student support strategy to mitigate attrition and improve retention. (Department of Health 2006, Moxley et al. 2001, Zepke et al. 2005, Tinto 2002, Audin et al. 2003 & Lowe et al. 2003.)

The Student Mentoring Service (SMS) was established in September 2007, in the Faculty of Health and Applied Social Sciences, at Liverpool John Moores University to facilitate the assimilation and acculturation of new student nurses. Second and third year nursing students were selected, recruited and trained as student mentors to support the first year nursing students. The LJMU approach to student mentoring is underpinned by substantial training to the student mentors.

There has been little evaluation nationally on the impact of the student mentoring services on the personal and professional development of the student mentors. The focus of this paper is to report on an evaluation development of higher level skills they student mentors perceive developed out of this experience. The primary aim was to understand the impact of the Student Mentoring Service on the student mentors personal and professional development.

The methodology is both qualitative and quantitative in nature using one to one interviews, focus groups and questionnaires. The use of the questionnaires was a two stage process. On recruitment to the Student Mentoring Service students were required to complete a single-page questionnaire. A second single page follow-up questionnaire was administered at a later date to comparisons to be made. Both questionnaires comprised short open-ended responses to elicit comparative qualitative data.

Keywords: Student mentoring, higher level skills, professional development

Background

At a National level in the UK, there is a strong emphasis on listening to the student voice in enhancing the student experience, exemplified by the emphasis placed on the National Student Survey in recent years which now forms a part of the Quality Assurance Framework for Higher education. In addition, the UK Higher Education system is currently under scrutiny in terms of the outcomes expected by Government in return for its public investment in Universities. Industry leaders have made it clear that a traditional academic degree alone is not enough; universities need to be developing high-level graduate attributes to meet the needs of employers in the contemporary global market. LJMU has made graduate employability a strategic priority and ensured that all academic programmes develop graduate skills and offer opportunities for students to develop higher-level World of Work skills.
The Student Mentoring Service (SMS) was established in September 2007, in the Faculty of Health and Applied Social Sciences, at Liverpool John Moores University responding to the needs of the student population. Historically senior students were invited to meet with new cohorts of students and relate their experiences of university life. They often reported back that many of the new students contacted them afterwards for further information. The senior students approached me and suggested that a student–led service be established as a level of peer support for the new students. They indicated often students wanted to know about student life that the senior students had experienced. The senior students said they wanted a service run by students for students to help students adjust to university life.

In the summer of 2007, prior to the new academic year commencing in September, an advertisement was posted on the student network offering second and third year students opportunity to apply to the Student Mentoring Service as student mentors to the new intake of first year students. The criteria for selection of mentors to the service were demonstration of commitment to their programme of study and evidence of being a good role model. The students were then interviewed and selected on this basis.

Following this, the student mentors were given training which is distinctive to LJMU. The SMS has incorporated robust and regular reporting mechanisms. Hence, student mentors send monthly reports on all types of student contacts (be they by telephone, email or face to face meetings) outlining the reasons for contacts and actions taken. The students receive a certificate for their personal development portfolio.

The aim of the Student Mentor Service is to develop the mentors’ higher skills which are transferable in the world of work. Following the initial training, the mentors have opportunities for further professional development, where they are introduced to a diverse array of topics including leadership and management, public speaking and presentation communication and emotional intelligence.

The student mentors offer outstanding support to all new level one health students in the Faculty of Health and Applied Social Sciences. All new students across the three intakes in February, March and September, approximately five hundred students per annum, are assigned a student mentor. The student mentors assist the new students to assimilate into university life, navigate the organizational culture and offer pastoral and learning support. The feedback from the student mentors is positive and their support to the new students is generally only required for the first six months of their programmes. An evaluation of the SMS indicates the new student cohorts were appreciative of the student mentors support and found it valuable and helpful.

Once established as a student mentor, the service outcomes are driven by the student mentors. As senior students they are cognizant of what students require from their programme of study. By listening to the mentor’s views and allowing them the autonomy to run the SMS this provides them with a sense of ownership and empowerment. The student mentors have extended their role and have been involved in organising their own events. In September 2009 they facilitated and hosted a student nurse conference for two hundred participants. They have also been involved with local charities funding raising and coordinating events which gained media interest. They are involved in Open Days and other university events, meeting with prospective students and parents. Working with the student mentors they seem self assured and confident, willing to take on new challenges, which they had set themselves, in the university and in the local community.

Research

The following research aimed to understand the impact of the Student Mentoring Service on the student mentors’ personal and professional development.

The sample 40 student mentors, 30% in the age range 18-25, 40% in the range 26-34 and 30% 35 years of age and over. In terms of gender, 80% of the mentors were female and 20% male which is consistent with the gender distribution in the Faculty of Health and Applied Social Sciences. Of the sample, 80% had no previous mentoring experience. The 20% who had some previous mentoring experience had received no training and it had been in a different work environment.

Questionnaires aimed to determine if the Student Mentoring Service had contributed to their personal development and to what extent. All of the mentors were given the questionnaires and there was 100% compliance. The interviews were conducted over a four week period and the student mentors had the opportunity to expand on the questions in the survey.
Preliminary Findings

Figure 1 Why did you initially choose to be a mentor?

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% of the students indicated they wanted to become a mentor so they could work more closely with the junior students.</td>
<td></td>
</tr>
<tr>
<td>30% of the student mentors wanted to make a difference to the students’ experience</td>
<td></td>
</tr>
<tr>
<td>50% of the respondents indicated they became mentors because of their knowledge of university life and because of their experience they could help the junior students.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2 Has the SMS assisted in your personal development?

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence 100%</td>
<td>The SMS increased their confidence which they thought was the most important quality and this enabled them to take on new challenges</td>
</tr>
<tr>
<td>Communication 80%</td>
<td>Their written, verbal and non verbal communication skills had developed during their time in the SMS</td>
</tr>
<tr>
<td>Builds and develops relationships 50%</td>
<td>Able to have the confidence to build and develop relationships with students, academic staff and clinical staff.</td>
</tr>
<tr>
<td>Self Awareness 40%</td>
<td>SMS created greater self awareness of self and others</td>
</tr>
<tr>
<td>Leadership and Management 40%</td>
<td>They gained leadership and management skills because of the personal development training days they attended whilst in the SMS. This enabled them to integrate these skills into their professional life.</td>
</tr>
</tbody>
</table>

Figure 3 What specific skills have you gained during your time in the SMS?

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of support networks</td>
<td>To provide reassurance, validity and information</td>
</tr>
<tr>
<td>Improved interaction at meetings</td>
<td>Increased confidence and been acknowledged as a mentor</td>
</tr>
<tr>
<td>Importance of a positive attitude</td>
<td>To interact appropriately with others and encourage the junior students</td>
</tr>
<tr>
<td>Problem solving</td>
<td>Finding solutions and making quality decisions and evaluating the outcomes</td>
</tr>
<tr>
<td>Continuous development</td>
<td>Seeking out new learning opportunities and challenges. Attending professional development training days</td>
</tr>
</tbody>
</table>

Figure 4 In what way do you think the skills you have gained from mentoring will assist in your chosen career?

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% of all students mentors indicated the SMS prepared them for the role as mentor when they graduate</td>
<td>As all of the mentors are health students when they qualify mentoring is an integral part of their job description</td>
</tr>
</tbody>
</table>

Figure 5 In what way do you think the skills you have gained from mentoring will assist in your chosen career?

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capable team member</td>
<td>Gaining enhanced interpersonal, communication, problem solving and motivational skills during the time in the SMS</td>
</tr>
<tr>
<td>Better prepared for interviews</td>
<td>Increased confidence and organisationalal skills. Citing achievements in conference organisation, charity work and liaising with student groups, academic staff and clinical staff.</td>
</tr>
<tr>
<td>Understanding own capabilities and competencies</td>
<td>Increased self awareness knowing when to seek help and support</td>
</tr>
<tr>
<td>Create time for self improvement</td>
<td>Seek out new learning opportunities and challenges</td>
</tr>
<tr>
<td>Respect other points of view</td>
<td>Interacting with diverse groups of students and staff emphasizes the need to value other people’s opinions and good listening skills</td>
</tr>
</tbody>
</table>
Summary

The evaluation highlights the skills that the students had attained during their time with the SMS. All the third year students’ mentors who have recently graduated have subsequently obtained employment and report that demonstration of citizenship skills and employability skills has been significant in this respect.

The role of the student mentor included presenting to large cohorts, public speaking and charitable work. From the tutor’s perspective, the students were found to have displayed strong communication skills and carried out their duties confidently. In addition to the mentoring of junior students, most of the students were also involved in other extra-curricular pursuits, for example becoming involved in student recruitment activities, or similar public events e.g. National Stroke Awareness day and teaching the general public basic life support. It is not possible to say the extent to which the mentoring scheme may have initiated such extra-curricular activity but together this variety of activity reinforces development of employability skills which are transferable to the arena of work.

The SMS in the Faculty of Health and Applied Social Sciences has been rolled out to other faculties in the university, Biological and Earth Sciences, Liverpool Screen School, Social Sciences and Pharmacology. It is hoped in the future a university network of mentors will be set up providing an exchange of ideas and collegiality.

Recently there was a meeting of directors of schools in other UK universities with the Head of Student Mentoring at LJMU to consider rolling out the LJMU model to their institutions and also set up a national student mentor network. A video has been produced showcasing the work of the student mentors, this is used to promote the SMS to potential mentors and in networking activities.

References


Incorporating Authentic Assessment into Different University Learning Scenarios

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There is a current requirement for universities to prepare graduates who are skilled in the practical as well as the theoretical knowledge of the workplace. It is argued in this paper that assessment, as integral to the teaching/learning process, should also relate to the real world context of the workplace, in that students are able to transform, use and apply the knowledge that they learn into these contexts. While assessment needs to provide valid and reliable evidence of learning outcomes, making assessment authentic for students in a university setting is often a difficult task for lecturers. This paper discusses three different learning contexts that involved different assessment experiences linked in some way to real world learning and application of theory. The results of the trial indicated that as contexts became closer to a real world experience, the sustainability of the assessment became more problematic. While acknowledging the difficulty of these practices, it is suggested that there is a need for a continuous cycle of evaluation amid some creative and innovative approaches to assessment practice.

Keywords: Authentic assessment, assessment in higher education

Introduction

A current dilemma in educational assessment internationally relates to the quality of information that different types of assessment provide and whether the knowledge and skills that are tested are indeed indicators of performance in future work contexts (Broadfoot, 2007; James, McInnis & Devlin, 2002). Authors have questioned the dominance of multiple choice and knowledge based tests that focus on a limited range of skills and knowledge, and not the range of attributes required for the workplace (Broadfoot, 2007; Rogoff, 2001). It is argued that assessment, as integral to the teaching/learning process, should also relate to the real world context of the workplace, in that students are able to transform, use and apply the knowledge that they learn into these contexts (Orrell, 2008). While assessment needs to “provide clear, relevant, valid and reliable evidence of the learning outcomes” (Queensland University of Technology, 2009, n.p.), making assessment authentic for students in a university setting is often a difficult task for lecturers (Price, O’Donovan, Rust, & Carroll, 2008).

The paper is based on a set of assumptions that are summarised below:

- Assessment is an integral part of the teaching and learning process (James et al., 2002; Price et al., 2008).
- Assessment should support student learning (James et al., 2002; Queensland University of Technology, 2009).
- Assessment tasks should align with the types of problem-solving and higher order thinking that occurs in the workplace (Dysthe, 2008; James et al., 2002; Price et al., 2008; Rogoff, 2001).
Assessment communicates to students what is valued as worthwhile knowledge or skills in a subject or topic (Havnes & McDowell, 2008).

Students focus their learning on what they will be assessed, therefore assessment tasks that are set need to be worthy of student learning (James et al., 2002; Price et al., 2008).

Students value tasks which are meaningful to them and which they perceive to be linked to the knowledge and skills that they will use in the workplace (Cumming & Maxwell, 1999; James et al., 2002).

Many authors (Billett, 1998; Stevenson, 2002) agree with the view that learning is not able to be generalised, and that students need to engage in learning about practice in the context in which it is constructed and enacted. The development of knowledge is supported through the interactions that occur in these contexts. The perception of tasks as mirroring the real life challenges and interactions that students will experience in the workplace supports a notion of assessment as contributing to the learning process. While assessment in higher education needs to report on student achievement at a point in time, assessments that are grounded in the practical application of work-related skills also contribute to feeding forward to future involvement in similar experiences. Furthermore, assessments linked to real life problems or situations of the workplace provide opportunities for students to develop the higher-order thinking skills that are necessary for the workplace while also meeting the fundamental goals of a university education.

Assessments that are related in some manner to real world or workplace performance are broadly described as ‘authentic’, though the term is used in a variety of ways by different authors. Eubanks (2009, p. 229) defines authentic assessment “to mean a subjective judgement resulting from direct observation of performance by an expert”. This definition highlights the enactment of a practice that is judged by someone who is a ‘member’ of that practice and is intimate with its performance. Cartwright (1997) offers a definition that focuses on tasks that require the employment of real world knowledge either through participation in real activities or simulations of events. Newmann and Archbald (1992 in Cumming & Maxwell, 1999, pp. 2, 3) refer to authentic achievement as “the extent to which the outcomes measured represent appropriate, meaningful, significant, and worthwhile forms of human accomplishment”. Raison and Pelliccione (2006, p. 11) describe authentic assessments as “educative, explicit, relevant, valid and comprehensive”. Authentic assessments are said to involve the performance of a task that involves the complexity of real world practice; a holistic response rather than component parts and a context-specific response that involves higher order thinking and problem-solving (Cumming & Maxwell, 1999). Cumming and Maxwell (1999) suggest that the validity of authentic assessment tasks should be focused on the situation and purpose of the assessment. This relates to notions of ecological relevance which is concerned with how the assessment meets the needs of the context of which it is a part. In this paper the relationship of the assessments to authenticity can be visualised as occurring along a continuum that progresses from simulations to involvement in real life productions.

This paper presents three different university assessment experiences that responded to different learning contexts, subject disciplines and student groups. These assessments were attached to pre-service courses offered at the Queensland University of Technology in Brisbane, Australia. Each of these assessments were planned to connect the theoretical component of the course with the real world application of the theory. First, the three different university contexts and the assessments that were implemented are described. These are the use of scenarios to contextualise and situate practical applications of the theoretical basis of a first year nursing unit; the inclusion of ‘mock’ panel interviews in a fourth year teacher education course; and the involvement of second year physical education students in organising sports activities for students at a local school. In the next section of the paper, the three learning and assessment contexts are discussed to determine the sustainability of this form of assessment, and to make suggestions for possible ways forward.

**Context 1: The use of scenarios to bring the real world into a first year Nursing unit.**

First year Nursing students usually do not possess real world nursing experience. The first year unit concerned is conducted over a 13 week semester and is offered twice a year. The unit consists of a 2 hour lecture and a 2 hour tutorial each week. The student numbers vary from 100 in one semester to 540 in the other semester. The semester discussed in this paper in which the changes were implemented had approximately 100 students enrolled. The staff in this unit consisted of the Unit coordinator who was responsible for the lectures and 2 of the tutorial groups. Three additional staff were employed as sessional tutors for each of the other 3 tutorial groups. Tutorial groups consisted of between 18 and 26 students.

The focus of the unit was on the many conceptual ideas about human development including cognition and psychosocial development in which theories by Erikson and Piaget are introduced. The purpose of the unit has been to provide students with the conceptual ideas and theoretical framework to draw from when dealing with
patients at various stages of their life. Problematic for this unit is that students do not attend any placement as part of this unit, which renders the unit as theoretical without an opportunity for practical application.

Initial analysis of this unit revealed that assessments had focussed on the recall of factual knowledge that had encouraged superficial learning. As the student focus was on the assessment requirements, the challenge has been to demonstrate the real world relevance of the coursework through the assessment for the unit. In redesigning the assessment for this unit, it has been necessary to review the learning objectives of the unit and ensure that these aligned with the content and the assessment. As a result new assessments that involved scenarios have been introduced. Using scenarios as a form of teaching and assessment practice, particularly in the medical context, is said to provide a safe context in which to practice complex, real world skills (Nestel, Kneebone, & Kidd, 2004).

In this unit students are now presented with a number of case studies based on real world clinical type situations. The incorporation of scenarios into the teaching content of the unit has enabled lecturers to work with students in applying their theoretical knowledge to solving the different dilemmas presented. Students have been provided with an opportunity to explore and experiment with different possible approaches to solving the dilemma presented in each scenario. In keeping with the real world focus of the innovation, the aim of this activity has been to generate multiple solutions to the scenarios presented and not to arrive at one answer by the end of the tutorial. In this process the lecturers are actively supporting the development of generic skills (Lublin, 2003) that the students require in their work context, that is, the employment and application of theoretical knowledge to solve issues involving patients.

In the assessment, students have been provided with a number of scenarios from a variety of nursing areas. The students choose one scenario and explain how they would respond to the situation, incorporating the conceptual and theoretical framework of the unit to justify their answers. The scenarios provide details of the person’s age and general social/family/working situation as these are critical in milestone development theories. Details regarding medical/surgical aspects are not included in the scenarios, as these are not dealt with in the unit. This is a written assignment with references required to support discussion. The focus is now on how to approach and manage the patient using the developmental theories and common issues that the students have encountered during lectures and tutorials. Students have been also provided with the criteria sheet in advance and shown how to use it as a checklist prior to submitting work. Demonstration of the application of theory to practical situations (case scenario) has been weighted heavily in the assessment criteria. Written feedback is now provided. An example of the assessment task is included in Appendix 1.

In the final week of semester students were asked to complete an anonymous written survey. One question asked “How confident do you feel about transferring the content of this unit to “real world” practical experiences?” Of the 28 completed surveys, the responses to these questions included: very confident (n=7), Confident (n=9), Unsure (n=4), Quite (n=1) and Somewhat (n=1). These responses indicate the terms the students used as there were no terms provided in the answer section. Other comments provided by the students indicated that they were able to apply the theories covered in the unit to real life experiences.

The tutors were also asked for their feedback after assessments had been marked. Comparable marking had been used to ensure consistency across the groups. Three out of four staff felt the students had demonstrated a marked increase in the ability to transfer theory to “real world” experience in the form of their responses to the scenarios encountered through the tutorials and the assessments.

While there is still space for improvement, results from the first semester of incorporating scenarios into the unit assessment illustrate the potential effectiveness of this new approach. These assessments have encouraged the students to apply the theoretical underpinnings of the course and have promoted deeper learning of the content.

**Context 2: Incorporating panel interviews as authentic assessment**

The education unit that trialled panel interviews as an authentic form of assessment involved 150 fourth year primary (elementary) students in their final year of study. The interviews involved students responding to questions regarding their teaching practice drawing on examples from their practical experiences and integrated with their theoretical knowledge and knowledge of systemic policy frameworks. The interview context has drawn together two aspects of practices in which the students have been involved. The first was the compilation of a portfolio of work. This portfolio contained evidence collected by the student of their developing competencies as a teacher as these aligned with professional standards. The portfolio is a requirement of the professional body that provides teacher registration. Second was the interview. Involvement in interviews is an
aspect of professional practice for teachers. Teachers’ work involves explaining and justifying the educational program that they provide to school personnel and to parents. Furthermore, of greater imminent importance to the students was their employment interview, which is conducted towards the end of the students’ final year. Successful performance in this interview raises the student’s opportunities of securing a permanent position with one of the education authorities. In the interviews students are required to address and apply the systemic standards for teachers with reference to their teaching experiences and related knowledge and understandings.

While the portfolio has been embedded in the university coursework, the development of interview skills has not been. Within the university courses for primary school education it was determined that there had been no instruction for students on how to conduct themselves in an interview context and no opportunities for students to practice and receive feedback on these skills.

Problematic for the inclusion of a panel interview in the assessment of this unit was the large number of students in the cohort (150 students) and only one lecturer involved in delivering the unit. This meant that a number of staff would need to be recruited to provide an authentic experience. It was proposed that the panels should consist of a member of the university academic staff, a principal or deputy principal currently employed in schools, and a student representative. The interviews involved much organisation: internal and external personnel needed to be invited to be a part of the panels; rooms for the interviews had to be organised; as well as the organisation and writing of timetables, procedures, interview questions, and assessment criteria. Briefings were conducted for all panel members. The interviews were conducted within a thirty minute timeframe. The procedure for the interviews is included in Appendix 2.

Support for the students to participate in this assessment task included a session on interview techniques that involved practicing skills. The success of the interview as a form of assessment was determined by the quality of the evidence that was able to be gathered of the students’ developing professional skills. Another indicator of the success of the interview was the value students attributed to the experience and the extent to which they viewed the experience as contributing to their future practice. Students and panel members completed a survey after their involvement in the interview process. The survey questions asked the participants to identify the benefits that they saw in the process and the difficulties and suggestions for improvements. Respondents consisted of 90 students, 7 university academic staff and 3 representatives from local schools.

Although students reported being anxious before the interview, their responses after the event have revealed an overwhelming support for this form of assessment. They have been appreciative of the opportunity to practice in an interview context, as well as having received feedback on their strengths and weaknesses. An issue identified by both the panellists and students was the time allocated for the interview. It was felt that more time was needed to allow for deeper questioning and response, and to provide for adequate feedback.

Students who volunteered as panellists have reported benefits from seeing how other students approached the questions and what they used as evidence; and in the communication skills that they developed through asking and answering questions, and giving feedback. Students have learnt the need to respond to the question being asked, and to be succinct in answering questions. The inclusion of school personnel on the interview panels has added authenticity to the assessment task through that invaluable workplace perspective. It has also generated learning and sharing between university and school personnel.

**Context 3: Organising sports events as a means of bringing the real world into a second year physical education unit**

The third context involved 30 second year Health and Physical Education (H&PE) students, who were predominately secondary education pre-service teachers. The unit covered the four components of aquatics, track and field, dance, and outdoor education. The unit assessment comprised of three tasks. The first of the three assessment tasks required students to organise a multi-event sports carnival for a local school, focussing in particular, on those schools that included a high percentage of indigenous students. This multi-event sports carnival could take the form of a traditional Track and Field Carnival, a Disabilities Carnival or a Traditional Games Carnival. Regardless of which form each group of students nominated, the entire student population received in-service tuition from community stakeholders on ‘Carnival Preparation and Planning’, ‘Convening and Judging Disciplines’, ‘Traditional Games’ and ‘Indigenous Knowledge and Cultural Expectations’.

This formative assessment task was a direct response to university wide suggestions of a knowledge deficit in the functional skills delivered by predominantly theoretical courses which remain contextually isolated. Livingston (1996) contests that the current professional decline in Physical Education practice is due to the
disassociation of undergraduate degrees in H&PE from their roots. Responding to an insatiable thirst for academic rigor, traditional Physical Education undergraduate programs have sold out for a tenuous association with Kinesiology. Tinning (1991) first notified the Health and Physical Education fraternity of his apprehension about such an alliance by raising a subsidiary issue twenty years ago. At the 1990 AIESEP conference Tinning voiced his concerns of a single and dominant pedagogy - the performance pedagogy - occupying the bulk of discourse in undergraduate Physical Education programs. Within Australia, evidence justifying Tinning’s caution of a ‘performance pedagogy’ monism can be readily identified by the didactic commitment of H&PE providers to a skills based sports education program.

Acknowledging graduate feedback from previous years, course co-ordinators recognised a pattern in graduand feedback confirming similar shortfalls in their own programs to that forecast by Tinning. Graduand feedback had identified a deficit in the functional skills provided by a largely theoretical course that was specifically designed to enhance the practical knowledge structures of undergraduate students. The feedback had indicated that Graduands (now first year H&PE Teachers) did not believe that they were not provided with the necessary skills and knowledge structures to complete fundamental practical aspects of the positions for which we were supposedly preparing them. It was decided therefore, that the coordinators of this particular undergraduate program needed to identify program areas that were too heavily focused in academic theory. Providing scope for the inclusion of real life experiences that would better prepare students for the contextually unique commitments of mainstream employment were identified.

This program review included a comparison of unit objectives and assessment tasks. The needs of major employers were considered in this review. Early investigation of the program certainly identified a performance monism and a dominant sociological discourse. As a result, real life learning ventures have been designed that have established inter-sectoral links. The new learning opportunities have been developed with the intention of providing the undergraduate students with experiences and a resource collection that will hold them in good stead for the convening and delivery of large scale carnivals, dealing with indigenous populations and nurturing cross-curricular activities. Community collaboration possibilities were identified, and initial contact made to determine infrastructural needs and co-develop real life experiences.

The program has only been trialled with a core group of students. However, early indications suggest that the students enjoyed the autonomy and responsibility associated with the leadership roles and have developed the desired functional skills. In light of the success that this initiative has generated, readily identifiable and potential difficulties threaten the maintenance of this initiative. The concerns primarily focused around the historical notions of assessment. Surprisingly, convincing the Faculty Council of the merits of this assessment task was not the largest hurdle to overcome. The greatest concern for quality of assessment were harboured by the student body who had difficulty appreciating that learning outcomes could be attained and demonstrated by a practical activity rather than a ‘written document’. It appeared that by the second year of their course the student population who had difficulty appreciating that learning outcomes could be attained and demonstrated by a practical activity rather than a ‘written document’. It appeared that by the second year of their course the student population who had already been indoctrinated into believing that university assessment must entail a practical activity rather than a ‘written document’. It appeared that by the second year of their course the student population who had already been indoctrinated into believing that university assessment must entail a practical activity rather than a ‘written document'.

Of the other readily identifiable difficulties, the most significant were infrastructural. First from a university perspective, difficulties were encountered with the administrative procedures and associated costs that must be met when relocating students from campus to various schools and sporting venues. It is anticipated that the process will become less daunting with familiarisation. Second, establishing and utilising links with local schools was viewed as an added burden for the organisation of Field Experience because of the existing difficulty with locating places for all students in practical teaching experiences. In this situation we believe that controlled and positive experiences with university students will overtime generate professional interest among the teaching community for the Faculty Pre-service Teaching program. Finally, maintaining the links that sustain the community collaboration which is integral to the success of this project remains most problematic for the continuation of this learning and assessment task.

**Discussion**

Each of the three contexts discussed in this project has attempted to bring real world learning into university course work through the use of authentic assessment experiences. For first year nursing students who do not have access to the field, real world scenarios were used in the tutorials and lectures and in the assessment task to focus students’ attention on the value of theoretical knowledge to solving complex real world problems. Fourth year education students were able to experience being in an interview context in which they talked about their professional practice. In this experience, students received feedback on the effectiveness of how they were able
to articulate their professional and theoretical understandings. Second year physical education students were provided with an opportunity to apply their course work to the practical organisation and running of an event.

Socio-cultural theories of learning highlight the importance of learning through participation in a practice, or in the ‘community of practice’ (Lave & Wenger, 1991). The learning that occurs through such forms of assessment is considered transformational in that the student’s sense of self as being able to perform in the practice (related to a work context) is changed (Stevenson, 2002). Student’s knowledge of the practice is developed as they participate in the practice.

Assessment of such a context is both formative and summative. The assessment is formative in the sense that it provides students with feedback about their performance within this practice at this point in time, and offers suggestions on how to improve the practice in future performances (which will occur as the assessment is an aspect of the workplace practice). The assessment is summative as it reports on a point-in-time performance within a pre-determined timeframe.

Difficulties with this form of assessment are often voiced as issues related to reliability or consistency of and between markers, and the related subjectivity of the assessment. Sadler (2009) contends that assessors should also pay attention to the ‘fidelity’ of the assessment. Sadler (2009, p. 2) describes fidelity as “the extent to which something actually is what it purports to be”, and is an important aspect of assessment that is often overlooked. Fidelity relates to the correspondence between the requirements of assessment task, the performance of the task, and what is actually assessed by the assessor. It involves the identification of assessed elements and degree of proficiency in carrying out the task. Furthermore it relates to the inclusion of practices in the grading of the assessment that are unrelated to the performance of the skill, such as effort leading up to the event in the case of the H&PE example, referencing conventions in the nursing example, and perhaps standard of dress in the interview context. Sadler (2009) argues that high quality evidence is required to determine proficiency but that the grade should be based on the skills inherent in the task and not other extraneous qualities. He suggests other ways to deal with these elements; for example, returning work for resubmission with references corrected, or refusing the interview until an appropriate standard of professional dress is demonstrated. The point is that while performance or authentic forms of assessment may present as problematic for making judgements due to the complexity of the task, solutions are evident when assessors focus on the performance of elements being assessed.

Further issues related to this form of assessment exist with procuring support from industry partners and acquiring financial support (if required). Such assessment tasks, particularly when they involve real enactments of practice, require close supervision by university personnel to ensure that the final product presented in the workplace is a quality product. Assessment of such a task may involve multiple dimensions in the preparation of the task and performance of the task. It may also involve industry personnel contributing to the assessment grade, as well as student self-evaluation. Successful pilot studies of how such an approach to assessment could work is needed to demonstrate if the deep involvement in the learning process that is proclaimed to occur, is evident.

The three teaching and learning contexts discussed in this paper have presented different enactments of authentic forms of assessment. The assessments presented may be considered ‘authentic’ as they address the situational requirements of the university course, through recourse to relevant application of this knowledge in a workplace context. The diagram below places the three assessment experiences along a continuum in terms of their degree of authenticity.

Visualising the authenticity of assessment tasks as a continuum which moves from discussing real world experiences to simulations to direct involvement, it is evident that as contexts become closer to a real world experience, the sustainability of the assessment becomes more problematic. This is not a signal of defeat, but rather an acknowledgement of the need for a continuous cycle of evaluation amid some creative and innovative approaches to assessment practice. Ways forward involve developing closer links between universities and industry partners, and with collecting and providing empirical data of the value of authentic assessments. Evidence that this form of assessment supports employees to be ready for the workplace would strengthen the interest of industry partners and gain credibility in the university sector.
**Conclusion**

This discussion has demonstrated the way three different university contexts used different forms of authentic assessments to support students in the application of theory to practice. Initial trials of these assessments suggest that regardless of discipline, authentic assessment is a vital component of facilitating meaningful learning. However, it was also illustrated that as the assessments approached a real world context that organisation of the assessment become more complex and more difficult to sustain. A partial solution to maintaining the integrity of this form of assessment was taken from Sadler’s (2009) concept of ‘fidelity’, to ensure that assessors only grade elements that are a part of the performance being assessed. The importance of strong links between university and industry has also been stressed. While it is easy to list the difficulties associated with this form of assessment, the possibility of developing deeper learning of concepts for students has been espoused. The view taken in this paper is that future research should focus on finding solutions to promoting the sustainability of such assessments.

**References**


Appendix 1

You are required to choose 1 of the following scenarios. From the scenario chosen you are to demonstrate how the developmental theories mentioned relate to the person/s concerned and the relevance this has on the nursing care provided for the patient.

It is expected you will use at least 6 references other than your text book for this assignment. These references are to assist you in providing evidence to support your discussion.

1. Carol and Peter bring their 4 year old daughter Jennifer to hospital. She is admitted for vomiting and dehydration. She is not allowed anything orally until further assessments are completed. Fluids are provided by an intravenous drip. Both parents work and Jennifer must be left in the care of the nurses during the day. Discuss the stages that Jennifer is at according to Erikson and Piaget and how this will impact on Jennifer, the nurse and Jennifer’s parents. Explain how the nurse can assist in caring for Jennifer in relation to the issues Jennifer is likely to experience.

2. Steven is a 42 year old plumber who is brought to the emergency department following a work accident. Following X-rays he is told he has sustained severe fractures in his right ankle and right wrist and will need to stay in hospital to have them surgically repaired. Steven tells you he would rather have them bandaged up and be sent home after a shot of pain killer as he needs to get back to work. He has only started his job 2 weeks ago and is worried about not providing for his wife and new baby at home. Explain Steven’s situation in terms of Erikson and Piaget’s theories. What are the main issues for Steven and his family? How can you, as the nurse, assist in ensuring all of Steven’s needs are met?

3. Doug, 76 years old and Joan, 74 years old, have been married for 56 years and have spent most of their life in the same locality. They have 2 daughters and a son. Both of their daughters are married with their own families. One daughter lives in the same state, while the other lives on the other side of the country. Their son, although living nearby, spends much of his time overseas with his work. Doug has gradually been getting frailer due to Parkinson’s disease. Joan continues to cook and attend to daily activities such as washing, and is keen to continue doing so. Doug and Joan have been able to remain living at home through a home and community care package which involves a carer visiting their home to assist showering Doug and to vacuum the house. However, Doug recently fell over and fractured his hip, and has had to spend the past 6 weeks in hospital. Doug now has a number of developing symptoms: he can no longer walk without assistance; he is experiencing incontinence; and some short term memory loss. Hospital staff are concerned with his increasing frailty. Although Joan is keen to have Doug at home, she is physically unable to provide the assistance that he requires. As a result a family meeting has been called and the decision has been made that Doug needs to be admitted to an aged care facility for ongoing care. You are the admitting nurse in the aged care facility when Doug comes in for admission. Explain the issues for Doug and his family. Using the theories of Erikson and Piaget how can you as the nurse assist in helping this family?
Appendix 2

Procedure

1. Student panel member collects and welcomes the interviewee, walks them into the room, and introduces them to the panel members.
2. The panel chair explains the procedure: Students will be asked one question by each of two panel members and two questions by the remaining panel member. Panel members may ask further questions to clarify and extend responses.
3. Allow around 3-4 minutes for response to each question. This amounts to approximately a 15 minute response, and 5 minutes for questions and feedback.
4. Panel members record notes on the quality of the evidence discussed, and mark on the criteria sheet the standard of the response.
5. Panel chair concludes interview after 20 minutes.
6. Panel chair thanks student for their responses. At this stage, if time permits, the panel chair may invite the student to ask any questions of the panel.
7. Student panel member takes interviewee outside to wait for their feedback/criteria sheet. Student panel member stays with interviewee to ‘debrief’ if necessary.
8. Panel (including student panel member when, and if, possible) discusses and completes criteria sheet judgements and feedback. Feedback will focus on the quality of the evidence selected for the response; and on professional communication skills. (10mins)
9. Panel chair records satisfactory (S) or unsatisfactory (U) beside student name on interview list.
Learning & Teaching Through Youth-Led Initiative Programme in Character Development

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This paper posits the possibility of applying positive youth development framework in learning and teaching in Malaysia. The author examines various literature reviews on youth-led initiative programmes. A study of a youth-led initiative programme was conducted in Singapore and the impact of their service-learning experience on their personal development was discussed. Positive outcomes in terms of civic engagement, competence skills, development of sense of self were discussed. The author concludes that it is important to make service-learning an explicit training and educational goal in order for educators to facilitate the building of capacities in youth. As such youths can appreciate the value that service-learning can bring in character development and in shaping early commitment to civic involvement.

Keywords: Positive youth development, service-learning experience, character development

Introduction

Our Malaysian culture does not offer a systematic means of establishing initiative, as it does not present a clear path from the dependence of childhood to the autonomy of adulthood. As a core element of positive development, youths must acquire the ability to demonstrate initiative. Larson (2000) supports the argument that initiative is necessary for agency and for independent actions by adults.

Schools typically have environments that elicit high levels of concentration and challenge, but low levels of initiative. Leisure activities, such as hanging out with friends and watching television, provide higher levels of intrinsic motivation and easier concentration of academic work, but offer little challenge. In other words, academic and leisure contexts in which youths spend most of their lives do not provide the opportunities youths acquire to establish initiative. However, students report that during participation in sports, arts, hobbies, and organizations they experience both high levels of intrinsic motivation and concentration.

Positive Youth Development

Research has documented that organized youth activities support the development of sophisticated cognitive and social responses. Lee’s (2007) study emphasises the strength-based model of positive youth development. Studies of positive youth development believe that every youth has the capacity for learning and healthy development (Larson, 2000). Masten and Powell (2003) highlighted the importance of tracking the effectiveness of functioning in major developmental tasks and also assessment of qualities in relationships, schools, and communities or organisations that appear to make a difference. Markstrom, Li, Blackshire, and Wilfong (2005) found that high school students who were involved in sports, student government, or volunteerism benefited developmentally in terms of ego strength.

Chong (2000) and Wentzel (1997) supported the importance of positive teacher-student relationships at school. Among consistent findings in literature was that achievement was enhanced by high expectations for students coupled with a classroom climate characterised by encouragement and support (Roeser, Midgley, & Urdan, 1996). An especially influential factor seems to be children’s perceptions of the support they receive from peers. A number of studies have demonstrated a link between children’s perception of peer support (Hauser, 1999; Wentzel, 1997) and their academic goals (Krishnan, 1999; Mau & Seng, 1997), engagement (Wentzel, 1997),
and self-concept (Furrer & Skinner, 2003). In Lee’s study (2007), interpersonal relationships with peers such as team members and adults such as team leaders, facilitators or teachers-in-charge of the teams in the overseas community service-learning expeditions are investigated.

Morrissey and Werner-Wilson (2005) found that communities that have opportunities available for youths and youths’ attitudes toward the community and family were predictive of activity involvement. Researchers such as Benard (2002), Masten (1994) and Larson (2000) have identified community resources and opportunities as factors that contribute to positive development in youth. Constantine and Benard (2002) posited that individuals can create environments that promote positive development and successful learning for young people, such as through adventure learning, service learning or community service. Particular attention has been given to the power of belief systems that facilitate meaning-making, a positive outlook, and transcendence or spirituality (Walsh, 2003).

Responsibility for providing meaningful developmental experiences for young people has increasingly been placed on organisations (Compas, Hinden & Gerhardt, 1995). Organisations have become the training ground for children and youth, and, increasingly, are being seen as intervention sites for primary and secondary prevention programs (Doll & Lyon, 1998). Larson (2000) contends that structured voluntary youth activities provide a fertile context for positive development, particularly the development of initiative and resilience.

The aim of positive youth development practice is to help youth acquire a broad range of competencies and to demonstrate a full complement of connections to self, others, and the larger community (Larson, 2000). LeBlanc, Talbot and Craig (2005) and Lerner and colleagues (2005) discuss positive youth development in the context of the six Cs of developmental outcomes: Competence, Confidence, Character, social Connection, and Caring or compassion, and Contribution to community. LeBlanc, Talbot and Craig (2005) further expounded that an effective assets-based perspective include questions that reflect the strengths youth possess, such as engagement in one’s community, degree of closeness to others, and degree of sharing and helping behaviour. Their evaluations supported the importance of interpersonal relationship and life skill development (LeBlanc et al., 2005; Lerner et al., 2005).

What are the characteristics for successful programmes? Successful programmes incorporate four characteristics. First, adult participation and guidance are essential to originate groups, but adults facilitate initiative by participants, they do not take it themselves. Second, organizational activities take place in real-world environments. Third, each group supports a variety of activities over time. Participants demonstrate changes in language use and structure that suggest marked changes in their ability to think about cause-and-effect relationships, to get clarification from others, and to adapt their language to the requirements of outside people and circumstances.

A Study of a Youth-Led Initiative Programme in Singapore

In Lee’s (2007) findings, youth participation, such as the Youth Expedition Projects in Singapore, seems to provide social nourishment and training to help youth develop not only civic attitudes but also the internal components of resilience – problem solving skills, social competence, autonomy and a sense of purpose. In the overseas community service-learning expedition, the goal is to place participants in a fun but challenging environment to help them mobilise their individual and collective resources to foster personal strength and growth.

This study employed a mixed-methods approach using both quantitative and qualitative methods. The participants selected comprised youths ($N = 347$), age 16 – 25 years, was part of the 3,979 participants of the Youth Expedition Projects (YEP) that were sent out in cohorts by the Singapore International Foundation in year 2004 to the Association of Southeast Asia Nations or ASEAN in short, China, and India.

The Civic Attitudes and Skills Questionnaire (CASQ) was used to measure the impact of the Youth Expedition Projects on the participants. The CASQ yields scores on six scales developed through factor analysis (Moely et al., 2002). The subscales measure civic action, political awareness, social justice attitudes, and diversity attitudes. These subscales make up the civic attitudes scale. Interpersonal and problem-solving skills, leadership skills, and sensitivity constitute the personal competence skills. Items are scored on a five-point Likert-type scale, ranging from one (strongly disagree) to five (strongly agree).Coefficient alpha reliability for the full measure was .87.
The structured interview schedules for the participants consisted of seven main open-ended questions that elicited their reflections and evaluations on the following: their expedition activities, their contributions to service learning, the achievement of their objectives, and their personal growth and insights in service-learning. The questions also asked about their critical evaluations of the extent to which the expedition made a difference in their lives, in the lives of the community that they served, and in their relationships with friends, families, and program leaders, as well as their plans for future community volunteerism. All interviews were guided by structured interviews, tape recorded, transcribed, and analyzed.

### Results and Discussion

#### Table 1

**Score Ranges, Mean, and Standard Deviations for Civic Attitudes and Competence Skills Measure of Participants (N = 347)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CIVIC ATTITUDES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civic Action</td>
<td>2.63</td>
<td>5.00</td>
<td>3.95</td>
<td>.51</td>
</tr>
<tr>
<td>Political Awareness</td>
<td>1.67</td>
<td>5.00</td>
<td>3.35</td>
<td>.58</td>
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<tr>
<td>Social Justice</td>
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<td>5.00</td>
<td>3.63</td>
<td>.44</td>
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<tr>
<td>Diversity Attitude</td>
<td>2.60</td>
<td>5.00</td>
<td>3.70</td>
<td>.53</td>
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<tr>
<td><strong>COMPETENCE SKILLS</strong></td>
<td></td>
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<tr>
<td>Interpersonal and Problem-Solving Skills</td>
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<td>5.00</td>
<td>4.01</td>
<td>.41</td>
</tr>
<tr>
<td>Leadership Skills</td>
<td>1.80</td>
<td>4.80</td>
<td>3.36</td>
<td>.56</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>1.83</td>
<td>4.58</td>
<td>3.37</td>
<td>.37</td>
</tr>
<tr>
<td><strong>CIVIC ATTITUDES AND SKILLS QUESTIONNAIRE (CASQ)</strong></td>
<td>2.89</td>
<td>4.55</td>
<td>3.66</td>
<td>.29</td>
</tr>
</tbody>
</table>

**Note:**
- Civic Attitudes total mean score consists of Civic Action, Political Awareness, Social Justice, and Diversity Attitude subscales.
- Competence Skills total mean score consists of Interpersonal and Problem-Solving Skills, Leadership Skills, and Sensitivity subscales.
- Civic Attitudes and Skills Questionnaire consists of subscale Civic Attitudes and Subscale Competence Skills.

* *p < .05. **p < .01. ***p < .001.

Table 1 shows the mean scores of Civic Attitudes and Competence Skills Measure of the participants (N = 347) after the expedition. Quantitative analyses indicated moderately high overall mean scores for civic attitudes and competence skills as a whole (M = 3.66, SD = .29). Among the subscales in Civic Attitudes, the mean scores of Civic Action (M=3.95, SD=.51) appeared to be slightly higher for the participants. The results suggest that generally the participants perceived that they would most likely plan to be involved in future civic participation after their overseas community service-learning expedition.

Among the subscales in Competence Skills, the participants appeared to obtain the highest mean scores for Interpersonal and Problem-Solving Skills (M = 4.01, SD = .41) as a whole. The result suggests that the participants seemed to gain more in terms of interpersonal and problem-solving skills as result of participating in the overseas community service-learning experience. Judging from the qualitative responses of what the participants had learnt about their relationships with their team members (including some of the team leaders, facilitators, and locals), the level of interpersonal skills gained appears to be encouraging.

The mean scores for Leadership Skills (M = 3.36, SD = .56) and sensitivity (M = 3.37, SD = .37) were slightly above moderate for the participants. The results appear to suggest that as a result of the expedition, some of the participants may develop leadership skills and showed moderately sensitivity for others. The finding is somewhat consistent with Thomas (1996) who indicated that group activities, such as the overseas community service-learning expedition, may be fertile ground for youth development skills. The myriad of group activities may significantly contribute to young people’s leadership and character-building.
In other words, the findings show that the Youth Expedition Project participants seem to show a moderately high level of development of civic attitudes and competence skills. Participants seem to reflect some changes in attitudes toward diversity, political and social issues, and even had plans for future civic action. Larson (2000) describes it as youths’ development of initiative, which is closely related to capacity for agency or for autonomous action. Through the overseas community service-learning experience, youths seem quite motivated from within to direct attention and effort towards personal competencies and at the same time may likely to engage in some form of civic responsibilities. While some participants seem to achieve more personal benefits, other participants seem to gain an understanding far more than just themselves, that is, to help others.

In the qualitative analysis, participants showed better understanding socio-cultural issues, social justice (poverty) awareness, and understanding strength in character of the community people. Findings show that there was an increase of 7.7% of participants who responded that their relationships were positive and very positive with their team leaders and an increase of 16.8% of participants who responded that their relationship was positive or very positive with their team members after the expedition. Participants had learnt to work with others, developed interpersonal skills, and enhanced social competencies. In terms of positive sense of self, the findings revealed that the overseas community service-learning positively impacted their confidence (66%), sensitivity to others (56.5%), appreciation (30%), resiliency (25.9%), and maturity (12.1%). The results also suggest that there seemed to be a change in the participants’ perspective towards life. The results suggest that the participants not only wanted to accomplish something meaningful for themselves but also wished to help others (n = 105 or 30.3%). In sum, the participants’ belief in future appeared to have extended from personal to matters larger than the self, that is, the desire to contribute to the community after the service-learning experience.

The overall findings seem to confirm that youths need not just knowledge but also opportunities for participation and practice. The goals of most community development programmes are consistent with building positive outcomes in youth. However the overseas community service-learning, such as the Youth Expedition Projects, may empower youths through meaningful participation in civic engagement and at the same time provide learning opportunities and gaining competencies. Learning opportunities include provision to experience positive relationships through supportive and caring interpersonal interactions, as well as provision to experience new ways of being. Opportunities for participation in the Youth Expedition Projects and contribution to the community at large may provide meaningful responsibilities, real decision-making power, a sense of belonging, and ultimately a sense of purpose and belief in future. Thus, given a nurturing environment that taps into youth strengths, all youths may have an innate capacity for change and transformation.

**Conclusion**

Youth-led initiative programmes may nurture the interests and abilities of young people by providing real opportunities for youth to demonstrate their capacity as responsible, participating members of society. The overseas community service-learning expedition may offer great opportunities for positive personal and interpersonal development, attitudes of tolerance, and civic values. The results seem to imply that given the learning opportunity to be involved in a youth-led initiative programme, youths may have the potential to increase their level of competencies. It is likely that the service-learning programme appears to enhance youth in many meaningful ways and thus, incorporation of youth would only serve to benefit Malaysia as a whole.

Public policy should therefore shift from prevention to positive youth development. In light of the current emphasis on character development, public policy should build supports for young people and create opportunities for growth, learning, and exploration that are central to preparing youth for adulthood. The goals of positive youth development focus primarily on the individual – the skills, competencies, and developmental assets each young person needs to make the successful transition to adulthood.

Therefore, organizations, health practitioners, or educators may develop more youth-led initiative programmes so as to change mindset and to build capacity, skills and competency in youth. The author contends that voluntary youth activities are an essential component of students’ learning and teaching leading to personal initiative and positive youth development. In short, it is important to make service-learning an explicit training and educational goal in order for educators to facilitate the building of capacities in youths. Through their own involvement, youths may truly appreciate the value that service-learning can bring in character development and in shaping early commitment to civic involvement.
Reference


A Case Study of Students Preferred Teaching Strategies to Support Placement Learning

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It is axiomatic that students engaging in professional education need to encounter both theory and practice during their programme of study. This assumes increasing importance during a period of increasing diversity of social care provision (Practice Learning Task Force, 2006) as students are challenged to demonstrate both the link between theory and practice and their capacity to be divergent critical thinkers (Biggs, 2003).

Within Higher Education Institutions (HEI’s)’s theory is monitored through a range of audit strategies including module specifications, programme validations and annual reviews. For example within programme validation processes, designed to ensure impartiality in judgements of ‘quality’, practice elements are usually considered alongside theoretical concerns, with academic members of staff, who frequently lack experience in professional education, usually outnumbering professional educators, who are familiar with the need to integrate theory with practice. External monitoring may also take place, for example in England Youth and Community Work programmes are validated by the National Youth Agency through a panel comprising of theoreticians and practitioners. In Social Work the English General Social Care Council and Social Care Agencies fulfil the same purpose. However, once programmes have been through this process, although subject to periodic review, much is assumed concerning the way in which students convert ‘espoused theory’ to ‘theory in use’ (Argyris and Schon, 1974).

Starting from Dewey’s principle that ‘there is nothing more practical than a good theory’ (Dewey, 1952: 169) this paper explores the link between theory and practice by examining which teaching strategies best enable students effectively to apply theory in their practice learning placements, a central aspect of professional education. It incorporates some preliminary, qualitative research with students on a level one MA Social Work programme and uses their comments to illustrate some of the teaching strategies we advocate which enable them to think through, creatively and divergently, their practice experiences and relate them to theoretical models. We acknowledge Ramsden’s (1992) view that ‘there is no single all purpose best method of teaching’, but, drawing on a range of literature, this paper explores how utilization of experiential, problem-based, reflective teaching strategies serves a crucial role in bridging the chasm between theory and practice.

Keywords: Professional education, social work, theory, practice

Introduction

There is general agreement that society has changed in important ways, yet much social policy has failed to identify these infrastructure problems as the location for intervention. The preference has been to attempt to micro-manage, at the individual or local level, as this offers a “way of representing events so they might be made governable” (Dean, 1999: 131) and “ … the promise that within an era of globalisation, people or states can still at least try to manage the multiplicity of uncertainties they now confront” (Bessant, 2002: 43).
When the change began, what point it has reached or whether the changes do or do not represent an “epochal shift” (Furlong and Cartmel, 2007:2) are all subject to debate and disagreement. We may go back, for example to Marx who characterised modernity as constantly shifting:

“Constant revolutionizing of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones. All fixed, fast-frozen relations, with their train of ancient and venerable prejudices and opinions, are swept away, all new-formed ones become antiquated before they can ossify”. (Marx, 1974b: 70-1)

Currently this sense of working within a context that is characterised by movement or ‘shift’ is expressed in Bauman’s discussion of individuals living a ‘liquid life’ in a ‘liquid modern society’ where “the conditions under which its members act change faster than it takes the ways of acting to consolidate into habits and routines” (2005:1). This sense of movement no longer seems directional, and a ‘metanarrative of progress’ (Lyotard, 1984) no longer dominates the collective consciousness as individuals focus instead on minimising harms. Furlong and Cartmel (2007: 3) summarize Beck’s ‘Risikogesellschaft’ thus:

‘… the world is perceived as a dangerous place in which we are constantly confronted with risks … previous securities are broken and people start to centre upon the prevention or elimination of the risks … ‘

Notions of progress are replaced by anxiety and ‘ontological (in)security’ (Giddens, 1991), exacerbated by the ‘choice’ discourse, which reproduces a belief in a social system predicated on neo-liberal choice for all, whilst in reality ‘choice’ remains socially patterned. Risks and opportunities are unevenly distributed, and the ability to respond to them is shaped by the individual’s social and cultural resources.

"the core ideology of neo-liberalism is basically premised on individualism rather than on social solidarity and community connection, and this is similarly reflected in (ostensibly) meritocratic institutional arrangements and the privatisation of public resources" (Young, 1990, quoted in Wyn and White, 2000: 174).

Thus, collective responses to structural inequalities are organised off the agenda in favour of individualised responsibilities. As Lukes asserts, ‘political systems prevent demands from becoming political issues or even from being made’ (Lukes, 2005: 40). In the absence of older certainties, common experiences are represented as individual troubles, and each individual becomes involved in constructing an individualised “pluralistic overall biography in transition” (Beck, 1992: 115). In Beck’s individualised risk society, individuals are not educated to develop their critical faculties, or to explore their personal and professional value-base but socialised into self-control oriented behaviours. Fergusson argues that the normalisation of discontinuous and non-linear trajectories "allows new subjectivities of being … and making choices to emerge” (Fergusson, 2002:184). This is, perhaps, an over optimistic view, as choices remain, inevitably, socially structured.

This changing context has repercussions for those engaged in professional education. Professionalism, characterised by values, which include autonomy in decision-making (Banks, 2005) has been eroded by an audit culture, which seeks to micro-manage every aspect of professional life. This micro-management emerges in surveillance through audit regimes purporting to test quality, but instead misinterpreting the audit for the actuality, implicitly challenging the values and principles underpinning liberal education. It is important that these challenges become explicit and that educators reflect on the values inherent in the various approaches to education; progressive/person centred; liberal; emancipatory and instrumental. This is especially important within professional education, specifically social work education, where, if teaching is to be effective, it must engage with education’s wider social purpose. It therefore seems an appropriate time to revisit values, and ensure that teaching practices promote critical and divergent thinking, through the integration of theory and practice.

The experience of social work

In the UK Social work’s transition to B.A. degree status (2004) resulted in a fifty per cent increase in practice learning days. The difficulty of finding social work placements, together with the increasing diversity of provision, created both the opportunity and necessity for student social workers to gain a more diverse experience of the world of social care. The challenges presented to those in HE responsible for teaching the new degree programmes were both “to take stock of progress so far in order to learn from this collective experience”
Sub-theme A: Methodologies and Strategies in Learning, Teaching and Assessment

(Practice Learning Taskforce, 2005: 8) and also to integrate the increased quantity and diversity of social care experience into new programmes, otherwise, as one participant discovered:

‘My placement wasn’t a social work placement so I didn’t use anything that we did in university so I don’t know how I could have been prepared, but my practice teacher was really good’.

Student 3.

These changes require social work educators to work creatively with the tensions inherent with agencies demanding ‘skilled-up’, adaptable, efficient and competent workers and Universities concerned to ensure critical, analytical and reflective professionals able, when necessary, to present alternatives to institutionally defined processes. We argue that experiential teaching strategies, grounded in a sound theoretical and value base, offer the most effective way of addressing both requirements, and of integrating theory and practice, through ‘a constructivist approach to learning... whereby learners construct or develop their own knowledge by testing ideas and approaches’ (Oko, 2008: 99).

Methodology

This study examined student’s perceptions of the effectiveness of teaching and learning in preparing them for their first practice placement, specifically focused on the link between theory and practice. As the study was focused on students’ perceptions, a qualitative methodology was employed, to focus upon the ‘individual lived experiences’ (Marshall and Rossman, 2006: 2). This also offered the opportunity to ‘delve in-depth into complexities and processes, research real as opposed to stated organisational goals, and research for relevant variables yet to be identified’ (Marshall and Rossman, 2006: 53).

Data collection was undertaken through semi-structured interviews, using open-ended questions as ‘interviews provide a source of well-grounded, rich descriptions and explanations of processes’ (Miles and Huberman, 1994: 156). Semi-structured interviews provided opportunity to follow up ideas, fully explore student responses and develop the notion of an interview being a ‘conversation between two people’ (Moser and Kaltons, 1971) and therefore more democratic. Questions were general and included which teaching strategies prepared participants effectively for placement, when they felt best and least prepared and how this related to teaching and how they related teaching to the diversity of placements.

Ethical considerations were paramount, due to the researcher-participant (teacher-student) relationship, as the researcher continued to mark student’s work. Hall and Hall (1996: 101) note ‘interviews depend on developing some kind of rapport with the informant’, a positive effect heightened in this study by the existing relationship between researcher and participants. However, the power relationship may also induce the acquiescence effect, as participants respond in the way they think the researcher wants, or gloss over less ‘favourable’ responses. As Sapsford and Jupp (2004: 120) acknowledge acquiescence may be an issue with interviews and questionnaires generally. In this instance, using one interviewer for all participants, developing a standardized question schedule, and the use of non-directive prompts and body language were all designed to minimise acquiescence. As one researcher was a recently practising social worker this use of self was carefully monitored both during and after the interviews. The power imbalance inherent in the relationship underlined the importance of ensuring that all participants were fully aware of the purpose of the process (Sapsford and Jupp, 2004: 108), made an informed choice emphasising the voluntary nature of participation, and understood their rights prior to participation and the possibilities of withdrawing at any stage of the research process. Confidentiality and anonymity were explored in detail.

Further limitations of the study pertain to the sample size and thus the transferability, credibility, and reliability of any findings. However, “decisions about what methodologies and procedures will be used ... are usually influenced by ... what is practical and feasible” (Sikes, in Opie, 2004: 17). Despite the limitations of a small female sample the ‘uniqueness fallacy’ offers the possibility of some aspects having a wider interest. The ‘uniqueness fallacy’ cautions against assuming that, because every event is “unique in some respect …, every event (is) unique in every respect” (Pring, 2000: 258). Thus, while not predictive or generalisable in the positivist sense, Kuhn’s (1962; 1970, in Agassi, 2002) idea of socio-historical research communities opens up the possibility of influence and generative research. Therefore, research validity is ascribed on the basis of the integrity of the researcher rather than replicability or generalisability of findings (Robertson, 2000).

A self-selecting group of six female MA Level 1 students were interviewed, and this lack of gender diversity was a limitation, although it provided some useful detail, and was reflective of the composition of the MA group, which was predominantly female. Student perceptions were gathered post completion of the first
placement. Students experiencing placement difficulties may have attributed them to teaching strategies, rather than issues within the placement or their practice. Johnston et al. (2004: 6) suggest that ‘any study has to examine the “micro practice” of individuals as they influence and are influenced by the social and educational context’. Although there was insufficient time to examine this, it was an important consideration in the reliability, validity and transferability of the data.

Data was subjected to a thematic analysis (O’Leary, 2004: 11). This facilitated the identification of common themes, while recognising that ‘interpretation of narrative’ is inevitable and biased (Marshall and Rossman, 2006) as the researcher has made decisions concerning the significance of information, and in doing so has drawn conclusions.

**Theory/practice divide**

There may be a tendency for students, and sometimes practitioners and academics, to see practice and theory as representing opposite ends of a continuum (Parker, 2005). This point was made by a participant:

'I don’t see any connection between university and practice. I see them as very separate’ Student 4.

Coulshed and Orme (1998:7) recognise the tension between practice and theory in social work, commenting that “… students and practitioners have protested that it was necessary to forget theory once in practice placements, that it reduced spontaneity in caring for people”.

Fook (2002) argues that such a view is limiting, as theory informs and improves practice by providing a framework for understanding situations and making decisions concerning appropriate actions. This perspective has been adopted and embedded within strategic planning, coordinated by the Practice Learning Task Force (2005: 8) which notes that “… academic and work-based elements need to be viewed in the round, in terms of delivery, development and evaluation”. Viewed in this way, work within the classroom can examine potential practice issues and experiences, and help students to integrate them, before they encounter them in practice, as recognised by a participant who commented:

'I would never have done group work in my placement without gaining knowledge and confidence in working in groups in X module’ Student 6.

Integrating theory and practice elements in this way requires an emphasis on preparation for placement, not simply in terms of shared understanding and values of providers, students and the academy, but specifically in teaching strategies. This does not mean adopting an instrumental approach to teaching, because, as Ramsden (1992: 150) acknowledges

‘The chief objective is not to provide solutions to the problems of selecting and using strategies, such absolutes and remedies do not exist… It is rather to help students understand what problems are, so that they may find their own solutions’.

Ramsden advocates a commitment to problem-based methods that enable lecturers to embed developing independence, improvisation and adaptability. Barnett (1997: 3) comments

‘the interrelationship between formal knowledge and practice experience is a dynamic entity, and must be encouraged in students … using classes, tutorials, assignments and placement supervision”.

This implies a prior understanding of theory and the way in which it can support diverse practice contexts. It also emphasises the shared responsibility of the academy and the practice placement for ensuring this blending of theory with practice, as ‘in this way teaching becomes a team exercise, with each member having specific expertise’ (Jarvis, 2006: 151).

We are not arguing for the pre-eminence of theory (see Freire’s (1972) critique of the ‘banking model’ of education) but for teaching methods that equip students with sufficient theory to enable them to access a range of options and assess their responses in any given situation. We are persuaded by Maslow’s aphorism that ‘if the only tool I have is a hammer I will tend to treat everything as if it were a nail’ (cited in Hawkins and Shohet,
2005:73) implying the necessity of understanding a range of theories and the ability to judge the most appropriate.

Munro (1998: 89) highlights the dangers of a preference for a personal, private style of working, which may prove ‘a major obstacle to … evaluating practice’. Thus, we argue that acceptance of the importance of theory is vital in the achievement of divergent, critical and reflective thinking and effective practice. As Parker (2005: 17) suggests ‘theories and models guide social workers actions and provide explanatory frameworks that make effective interventions possible’.

In this context Parker (2005) suggests that Kolb’s (1984) process model of learning, encompassing experience, reflection, conceptualisation and active experimentation is central to practice learning. It is helpful to highlight that the process incorporates both theory and practice, and that ‘that the model demands time and constructive feedback to work’ (Parker, 2005: 30). This highlights the necessity of utilising teaching strategies which allow sufficient time for processing and feeding back. Furthermore Parker (2005: 31) contends that

‘learning from an event involves considering the process in detail at an emotional and cognitive level, and then re-evaluating the experience in the light of experience and knowledge from other sources of experimentation. The aim of the model is to make the re- evaluated learning one’s own”.

This emphasises the need to critically analyse both theory and practice. If students do not develop this ability they will be inclined to grasp at superficial answers to presenting problems (Jones, 2009). Working through practice issues in the classroom facilitates the development of critical faculties. Critique must be applied to text (theory), subtext, context (social underpinning) and practice thereby broadening understanding by questioning theory, making evident links and applying new knowledge (Jones, 2009:10).

**Reflective, Divergent, critical thinkers**

Reflective practice is one method of taking account of emotions and linking theory into new practice contexts. Whilst academic study cannot mirror placement experience, it is important to acknowledge the necessity of devoting sufficient time to emotional preparation, as well as the cognitive facets. Moon (2004) argues that emotion is central to the reflective process, a necessary part of experiential learning. If we are to learn from experience we need to reflect on the experience and the emotions it raises. To ignore our own and others emotions within social work practice would be akin to discussing ‘the physical nature of the world with someone who is only aware of two dimensions of existence and thinks that the world is flat, rather than a three-dimensional sphere’ (Butler in Knott and Scragg, 2007:33).

The relationship between reflection, critical analysis and divergent thinking is complex (Dewey, 1938; Usher and Bryant, 1989). Dewey’s definition is helpful in illuminating this relationship. He defines reflection as “the continual re-evaluation of personal beliefs, assumptions and ideas in the light of experience and data, and the generation of alternative interpretations of those experiences and data (Dewey, 1933, 1938 in Knott and Scragg, 2007: 5). In the teaching context we are concerned with creating space for ‘reflection-on-action’ which complements but does not replace ‘reflection-in-action’ which occurs in placement (Schon, 1983; 1987). We argue that the reflection-on-action provided within the teaching context is an essential scaffolding for reflection-in-action. This enables the development of reflexivity, which is more than reflection, but enables students to ‘place their reflections on and in action in the social arena of social policy’ (Knott and Scragg, 2007:10). This points to the importance of problem-based learning, which enables consideration of both action and the social context in which that action takes place.

This introduces notions of praxis, which embodies a sense of values; it is practice informed by reasoning and a commitment to what is morally right. Jeffs and Smith (1999:65) characterise this as a concern for "human flourishing." Thus, evaluation of practice may bring about changes in its theoretical underpinning (in its simplest incarnation in Kolb’s learning cycle) which, as an emotional experience may also challenge value systems. It is important that teaching approaches create space for reflexivity prior to and concurrent with placement experience. As Moon writes practitioners ‘may need to deal with unexpected outcomes … emotion … and the recognition that there is a need for further reflection’ (Moon, 2004:84).

Experiential learning techniques which include the use of case studies, role play and simulation enable students to experience a situation, reflect upon it, theorise and prepare for the next experiential opportunity. All students noted the benefits of translating such learning opportunities into the practice arena.
"I thought I would hate role play. In the end I realised I would have to get on with it ... It gave me loads of confidence ... There were lots of things in placement I worried about but I think role play gave me confidence". Student 5.

Reflective practice therefore, requires teaching strategies which encourage the development of critical analysis and divergent thinking. Biggs (2003: 158) defines these as:

‘An ability to generate alternatives, where the notion of being correct gives way to other assessments of value, such as aesthetic appeal, originality, usefulness, self-expression, creativity’.

These are the qualities required of an autonomous and effective practitioner. Within the fluid context of service provision, students need to be divergent problem solvers, with the ability to generate different responses and apply previous thinking to new contexts. The following comment conveys some of the enthusiasm, as well as the divergent thinking, that a more interactive teaching approach generates:

‘X is really good at making us think things through. She asks us what we would do. She challenges our answers and asks us why. I found the same with my practice teacher ... She always asked me why I did something’. Student 2.

The value of interactivity between lecturer and student in supporting divergent thinking was a recurrent theme:

'I hate it when we just sit there and listen. I switch off. You can get the same information from power-point. Talking makes me think outside of the box’. Student 6.

Interactivity not only makes individuals think more creatively and divergently but also enables students to benefit from others’ thinking, thus introducing fresh insights and knowledge (SWAP, 2007). Barnett (1997: 3) comments that when

“Theory, practice and reflection are treated more equally, as mutually interacting, and through transformative activities, such as dialogue with the experience of others, theory and practice are reflected upon, translated into frameworks for knowledge and understanding for future action”.

It is important for students to feel comfortable in their interactions with lecturer and peers. Thus, to promote interactivity between students any strategy used requires careful management by the lecturer. For example, during group discussion, Biggs (2003) notes the importance of distancing oneself to promote whole class engagement. This will maximise the opportunity for students to learn from each other, and is an empowering educational approach, central to problem-based learning.

**Problem-based learning**

The use of problem-based learning (PBL) provides a context in which the student may generate emotional responses. This is vital as ‘reflection is always about ‘my own’ processes’ (Moon, 2004, in Knott and Scragg, 2007: 7). Biggs endorses this perspective

“Students need to find academic activities meaningful and worthwhile. Nowhere is it clearer than problem-based learning, where real-life problems become the context in which students learn academic content and professional skills” (Biggs, 2003: 63).

PBL takes many forms: it may encompass large lecture teaching, small group tasks and role-play. Undoubtedly the use of large lecture teaching is efficient in time management, however the role of student interaction must not be minimised. SWAP (2007) comments upon the importance of interactive lectures, which include structured activity and participation, individually and in groups. Interactivity engages students in understanding issues and increases the range of skills developed. Furthermore it provides opportunity for students to draw upon their own experiences of learning. It is important that interaction between and with lecturer and other students is maintained to ensure collaborative learning.

Parker (2005) supports the use of inquiry–action learning to facilitate the integration of theory and practice. Whilst the technique has traits similar to PBL, it places greater emphasis on students searching out and
discovering material. The method involves both formal and informal teaching, with students using case-study material.

"Anything to do with case studies is really useful as it makes it all real. I am not saying theory isn’t important, but it doesn’t mean anything without putting it into characters". Student 1.

Students researching a specific problem will encounter information, which, while not relevant to the specific problem, may be useful in other contexts. There is a clear role for the teacher to ensure that this learning is brought to self-consciousness, that students are supported in their research and provided with sufficient opportunity to discuss their progress. Using a Socratic questioning approach involves the teacher in facilitating the identification of questions and bringing to consciousness the student’s learning. Although the animation in student responses in relation to discussions of PBL and inquiry–action learning cannot be depicted effectively in this work, it was evident that students obtained great enjoyment, which translated into a heightened confidence which they took into their first placement experience.

In the changing circumstances that we have described there may be a disjunction between placement experience and a student’s previous understanding. Jarvis (2006) argues that such disjunctions are the start of the learning process, forcing learners to ask questions of themselves. It is vital that this process is also encountered in the classroom, perhaps during ‘reflection on action’, or teacher-generated through the careful construction of suitable questions that generate a disjunction that may replicate or predict a placement experience (Jarvis, 2006).

Conclusion

This initial research, with its acknowledged limitations, has provided a firm foundation on which to base further study. It has begun the process of understanding students’ perceptions of effective teaching strategies which facilitate the theory practice link, and underpin placement learning. This is an important area of study if students are to derive maximum benefit from placements, and make meaningful links between theory and practice. This is essential scaffolding for entry into a community of practice (Wenger, 2007).

A commitment to continued reflection, evaluation, theorising and improvement is essential, as practice, its settings and the social policy which governs it, continue to be subject to change rather than consolidation. There is a need to develop a strategy that promotes the inclusion of less traditional perspectives of social work through the use of diverse materials and teaching strategies. As the Practice Learning Task Force, HEI strategy suggests “There is a need for more joint working, planning and co-operation between the university, practice teacher and agency” (2005: 13). Such a strategy would support Gray’s (1989: 5) view of the role of collaborative working, which is “a process through which parties who see different aspects of a problem can explore constructively their differences and search for solutions that go beyond differences and their own limited vision of what is possible”.

The broadest range of teaching strategies should be employed to challenge and enquire as to student’s perceptions and their relevance to practice. In addition to communicating a passion for the subject, the importance of interactive learning opportunities cannot be overestimated, as this empowers students to feel confident, promote the link between theory and practice and develop skills required within the practice arena. This must be seen in the context of changing social care provision, reflected in the increasing diversity of placements.

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The concept of Student Centred Learning (SCL) in higher education has been widely explored in teaching and learning literature. In architecture, SCL is not a new concept. Prior and existing practices have implemented teaching methods such as group discussions, field trips, portfolio development, individual design projects and research as ways of transmitting disciplinary knowledge. Recent years saw an increasing relationship between rationality and creativity in learning architecture. However, there was little study on the gap between rational and creative methods as a way to enhance teaching and learning, and its effectiveness. Consequently, this paper examines the value of student-centred methods in teaching and learning architecture. The investigation is conducted by studying an integrated approach of research, field trip and creative production for exhibition, which is conducted in a private institute of higher education in Malaysia. Using questionnaire to collect data from a sample of 37 architectural students from various levels of architectural studies, as well as personal observations on the students’ works, the paper emphasises the value of the integrated approach as an effective way to increase intentional learning and to promote and strengthen research culture.

Keywords: Student Centred Learning, Research, Field trip, Creative production

Introduction

The concept of Student-Centred Learning (SCL) in higher education has been widely used in teaching and learning literature (Burnard, 1999; Gibbs, 1995; Lea, Stevenson & Troy, 2003). Despite myriad of studies on SCL, they were based on Western concepts and implementation. In the Western context, several studies argued that SCL is an effective teaching strategy. SCL methods were perceived to be interesting, exciting and boosted students’ confidences (Lea, Stevenson & Troy, 2003). It also increased participation and motivation (Davis, 1999) and favoured by students in comparison to the traditional teacher-centred approach. This was because SCL methods focused on experiential learning and encouraged life-long learning in the transmission of knowledge.

One of the disciplines which implemented SCL methods is the field of architecture. In architecture, SCL is not a new concept. Prior and existing practices have implicitly implemented teaching methods such as group discussions, field trips, portfolio development, individual design projects and research, each leading to different outcomes. The current emphasis of architectural education on the integration of different teaching methods impacted on the development of architectural curriculum in universities. In Architectural Research Methods, Groat and Wang (2002) emphasized the gap between research-based and creative-based learning methods. Research and creative outcomes have often been perceived as separate entities, the former being methodical and rational, whilst the later being creative and experimental (Groat & Wang, 2002). For example, research outcomes are associated to subjects such as theory, history, science and construction, whilst creative outcomes are linked to design-related subjects often presented in the form of reviews and exhibitions. Despite the use of different teaching and learning methods, they were taken for granted as ways of transmitting knowledge to
students that worked in isolation. There were little studies on the integration of disparate teaching methods. Groat and Wang’s (2002) emphasis on the relationship between rationality and creativity suggests that the link between logical and creative thinking is a potential area for study.

Besides the use of research and creative outcomes as student-centred teaching and learning methods, field trip is a common strategy which exposes students to architecture and the built environment through real-life experiences. The integration of field trips, which is practiced out of the classroom context, encouraged experiential learning. Literature on SCL argued that field trip makes learning and teaching a more integrated activity, thereby creating a collaborative learning environment (Nespor, 2000; Parr, 2005/6).

The issues identified above suggest that there are potentials in the different strategies of teaching and learning, each having its own value to learning: research is a structured approach to learning which incorporates logical thinking (Groat & Wang, 2002); field trips provide first-hand experience which increases their factual knowledge and conceptual understanding of an educational program (Myers & Jones, 2004); and, exhibitions are principally a discourse, and the process of developing a presentation for an exhibition requires as much attention to detail and to the intention as writing (Snell, 2007). Taking this case as the premise for study, this paper examines the value of integrating research, field trip and exhibition in the teaching and learning of architecture.

**Methods**

Questionnaire is used as a data collection technique because it enable the researcher to cover an extensive amount of information—from demographic characteristics, to behavioural habits, to opinions or attitudes on a variety of topic—across a large number of people in a limited amount of time. This technique is selected because the study compared students’ overall assessment of the effectiveness of the SCL approaches achieved in this module. Literature in the field of SCL (Burnard, 1999; Gibbs, 1995; Lea & Troy, 2003) suggested that SCL strategies transmit disciplinary knowledge and skills through experiential learning and encourages life-long learning (intentional learning). Thus, the questionnaire aimed to find out the extent to which the integration of different SCL approaches contributed to students learning experiences and interest. These techniques will be conducted to measure and analyze students’ response towards the integrated teaching and learning approach in three main aspects:

- Students’ ability to understand, analyze and synthesize the knowledge gained (disciplinary knowledge)
- Students’ learning process and experiences
- Students’ response and interest of learning (intentional learning)

While the questionnaire provided data on the overall perception of students towards the SCL approaches, the objective of the selective interview is to examine the effectiveness of the integrated SCL teaching methods, and further understand how the developed program is useful and where it is failing. Two students, Tey and Yoon, were selected as representatives for the interview as they both have demonstrated great enthusiasm in their works produced for a subject ‘Representing Place’.

Representing Place, an elective subject, ‘Re-presenting Place’, conducted within the School of Architecture of a Private Institute of Higher Education located in Malaysia, is a subject developed for ‘Activity Week’ to provide students with first-hand learning experiences as a way to acquire knowledge. Activity Week is a week dedicated to overseas and local field trips which emphasized out-of-classroom learning experiences for students of architecture. In Representing Place, a creative product for the purpose of exhibition is the end result of students’ self-proposed research programs. The research project started with a formulation of research proposal. Students were required to frame research questions and methodology for their research project. Prior to the field trip, students went through research to obtain preliminary knowledge through resources such as books, journals, videos, and online archives amongst others. During the field trip, each student conducted their data collection based on their own proposed methods. Subsequently, they interpreted the data collected to respond to their research questions. Students were required to combine their rational and creative abilities in producing two complementary outcomes which are identical by idea, but opposite by nature.

In order to examine the value of the integrated teaching and learning strategies, a case study of ‘Representing Place’ is analysed. It does so by way of studying how the subject is structured and the activities involved, as well as the student’s feedback through questionnaire and selective interview.
Results

From the questionnaire conducted, overall, students rated the following in terms of their preferences of teaching and learning approaches:

1. Opportunity to be creative and to represent research and analysis in visual forms
2. Opportunity to experience places as a way of gaining knowledge
3. Opportunity and flexibility to research on my own.

This data suggests that of the three teaching and learning approaches, students rated the creative visualisation of their research as the most enjoyable phase of study.

Despite the perception of research being deep and boring, the incorporation of the creative component into teaching and learning increased their interest in learning. This finding is substantiated by some comments made by several respondents through the open-ended questions in the questionnaire when asked about ‘What is the best thing you enjoyed in this module?’ Some of the comments were:

‘The things I enjoyed most was the feeling and control over the topic, although the limitation of time didn’t really bother me because every day makes me feel like I’m an author and I’m searching for answers...’

‘Very interesting and engaging module; should definitely bring it back for the students of the coming semesters so that they can experience it too and we can see more creative outcomes’.

‘It is very delightful to be able to conduct our own research in our own ways, mentored by the facilitator. This allows us to search for our system of observing and thinking, which is very much needed in architectural education, rather than being told what to do, or spoon-fed. I believe a large part of learning are through ourselves’.

The responses suggest that they perceived the close-knitted relation between research and creative thinking as an ‘enjoyable’ experience of learning. The following sections show the students’ feedback to the individual teaching and learning approaches used.

Research: The rational approach

The findings showed a significant relation between research proposal and study tour as all students agreed that the research proposal gave them a focus area of what to observe during the study tour.

The research component was rated third amongst the other teaching and learning strategies. The data showed that 40% of the students found it difficult to plan the research proposal, 20% of the students found it difficult to find resources, analyse and synthesise information obtained. Approximately 40% of the students found it difficult:

- To work on their own time
- To find materials for their research
- To start the research

The findings showed that the initial phase of the research was perceived to be difficult. However, after conducting the research, 90% of the students found that they have the confidence to work on their own. From the 37 student sample, 80% of the students could record and document data in a methodical, systematic and logical manner, analyse and synthesise data. This data suggests that students gained research skills. The formulation and implementation of the research proposal enabled students to understand, analyze and synthesize the knowledge. However, students found that the initial selection of research question was a challenging task. The task of the facilitator (tutor) thus plays a vital role. Although this component was difficult, students appreciated the process of formulating the research proposal because they found that the focus and specificity of the scope of research provide them with richer and in-depth understanding of the selected topic, and specific in their data collection. Overall, students appreciated the formulation of proposal prior to the field trip. Although the selection of a topic of interest was challenging and difficult initially, it enabled them to have a focus when they are participating in the field trip.
Field Trip: The experiential approach

The findings from the questionnaire showed that students enjoyed the experiential learning technique. The survey revealed that 90% of students strongly agreed that the study tour gives them real-life experience and it is more interesting than learning in the classroom, and they can draw relations between architecture to different socio-cultural influences.

The survey also revealed that the program allowed for first-hand methods of collecting data from students’ field trips which widened their techniques of gaining knowledge, with an indication of 90% of the students who liked the use of sketchbook and photography as a way to document their observations. Besides that, students also used other methods of collecting data. For example, utilizing ability to converse in the local language of the city (Mandarin for Beijing), a student, Tey put himself into close and direct communication and interaction with the context and people to observe and understand the urban lives and conditions at macro and micro levels. The research explored public spaces of differing scales, immersing in ‘local’ activities, such as eating, shopping and bargaining, people-observing, socializing amongst other, to gather data from the local people, as well as other foreign visitors. Photographs of relevant urban events, scenes, phenomena were recorded at the same time as visual references. Eventually, the data were translated and interpreted into visual diagrams, sketches and short notes. These interpretations were later used in his analysis by interrelating and reasoning with knowledge on the research topic he gained from studies prior to the fieldtrip.

Another student, Yoon, did research and studies on the urban layout of Beijing in terms of the in-between spaces through methods of observation and documentation. Observation traces people’s feelings, actions and needs for each distinctive in-between space within the urban layout, and to record the impression and events within the in-between spaces. The observations are recorded in the form of sketches and photographs. In addition, as medium of multimedia has served as a strong and effective way to convey and showcase the series and varieties of spaces, video/short clips recording is being carried out with the help of digital video camera to capture the 3-dimensional qualities of spaces.

The data showed that despite the students favouring field trip as a way to gain first-hand knowledge, they emphasized the need for adequate time spent on site for data collection.

Creative Production: The Exhibition

Besides students’ favour for field trips, the results showed that students were interested and excited in visualizing their research. As an extension of self-directed learning in conducting the research, students documented and disseminated their research outcomes come through two different means: (1) analysis reports in the forms of presentation boards; (2) creative products. The presentation board is a rather conventional means of documenting analysis which consists of verbal explanations and reference images that organized and categorized the data collected which convey interpretation of the data collected in a rational, direct and ordered manner. Alternatively, the creative outcomes produced for exhibition took into account aspects of form, materiality, and human’s five senses to convey the analytic idea in a more individualistic, creative and abstract expression. It cultivated creative thinking and engages the students because it is associated to making and designing. The findings from the questionnaire revealed that all of the students agreed that the translation of research into a creative manner enabled them to think visually. Specifically, an average of 70% of the students enjoyed the module because:

- The module allows creativity
- It is different from other subjects
- The module allows the acquisition of new skills
- The module gives a new perspective of architecture

Examples of analysis presentation board and creative production are shown below. In one example (Figure 1), Tey interpreted the urban forms within the city as ‘places’ and ‘non-places’ whereby he studied various urban layouts in different parts of Beijing and, subsequently, the forming of architecturally and socio-culturally sensitive ‘places’ and ignorant spaces which he called ‘non-places’. Besides the analysis, Tey took the subject further to the creative production phase, where he crafted a viewer-interactive, abstract sculptural piece that changes passively with the viewers’ actions on it. He took into consideration the shaping of a silent yet intensive narrative of the ideas into physical solid, which is more inclined to the subtlety of architecture and arts.
Tey believed the methods he employed throughout the research were effective in several ways. Firstly, the immediate interaction with the context of research has not only provided him more accurate insights into the issue, it has also nurtured a strong bond between him and the context, which provided him continual persistence and joy in studying the topic and place during and even after the research. It extended the temporal research study into a life-long concern, focus and experience. Secondly, the diagrammatic sketches by Tey have been more accurately interpreting the data he collected during the field trip. Thirdly, the viewer-interactive sculpture Tey produced for the creative outcome enabled his research outcome to breakout from conventional textual expressions and visual and tactile 3-dimensional form. In brief, the autonomously run research program has prepared Tey in conducting own researches that are to come, as well as foreseeing the extensive possibilities of different research methods to be explored.

In another example, Yoon interpreted the in-between spaces within the urban environment a series of ‘captured’ experiences of spaces (Figure 2).

Figure 2: Analysis of the in-between spaces within the urban environment a series of ‘captured’ spaces by Yoon

For Yoon, the creative product is a video made from combinations of 2-3 minutes short clips collected during the field trip and a visceral model which narrates the interpretation of his analysis. The short clips captured the urban spaces and also the experience of moving through the space. Rather than the conventional voice-narrated documentary approach, Yoon’s technique was to present ‘captured space’ through the sensual means of sound, sight and feelings. The voice input is being replaced with songs that are fitted into every narration of the feelings for each studied spaces.

Besides the short clips, Yoon produced a visceral model to interpret the data collected from the field trip. Yoon interpreted the urban environment in three spatial aspects: (1) Wide versus Narrow; (2) Horizontality versus Verticality; and (3) Intimate versus Open. These three perceptions of the urban spaces were translated through three typologies of ‘paper folding’ models (Figure 3).

Figure 3: Three typologies of paper folding models as Creative products produced by Yoon which interpreted three spatial aspects of the urban space (photos by Yoon, 2006)
The spaces between the folds were representations of actual spaces. Hence it suggest to the viewer to imagine the experiential space as if it is an actual space. Space emerges within the paper fold during a dynamic ‘volume’ generation process which draws a dialogue between the space itself and the human experiencing the space. For Yoon, the model making and video making in the stage of creative production has proved to be effective in his learning when he discover the link of ideas between different aspects and fields, from working out digitally like video making to manually like model making. As far as he concerned, the creative production have enable him not only finding the new dimension in architecture studies but to showcase the work of his own interpretation and meaning which he hopes for feedbacks from the viewer in return.

**Discussion**

The findings from the questionnaire and students’ outcomes revealed that the integrated approach to teaching and learning strategies has its values towards students learning as follows:

1. **The self-directed learning process for students enabled them to take control of their own learning**: Since the concept of SCL is being employed, students get their chance to frame their own research topic and question. It is obvious that students get to find out about something they interested in learning rather then being told what to learn. Students are in control and responsible for their own learning, hence becoming autonomous learners. They have taken the active role in the learning process and they need to make sure of producing and generating their work on their own. This approach means that the lecturer acts as guidance for the work of every students and moderation at stages is being held to make sure students is on schedule for the work and set a timeframe for the whole production. Such findings were consistent with literature which suggests that SCL approach is interesting and exciting (Lea, Stevenson & Troy, 2003), increased participation and motivation of students as independent learners (Davis, 1999).

2. **The field trips provided an opportunity of experiential learning**: The study revealed that the integration of field trips into the syllabus enhances the quality and process of learning. This is in line with the literature of SCL which argued that field trip makes learning and teaching a more integrated activity, thereby creating a collaborative learning environment (Nespors, 2000; Parr, 2005/6). The results further stressed on the importance of planning and on-site data collection for the field trip to be an effective strategy for learning as suggested by Myers and Jones (2004).

3. **The possibilities and chances provided to the student's later stage of the research by the task of creative outcomes for exhibition created an exciting and interesting approach to learning**: Being exposed to an exciting and experimental environment students are encouraged to utilize their own distinctive abilities and/or preferred ways to translate rational analysis into artistic expressions. The phenomenon can be explained as students running activities of preference which they have minimal or no resistance against, therefore a consistently pleasant environment is shaped individually for their research documentation. Under a positive learning psychology as such, challenges posed along the process is much willingly, effectively explored and confronted, and thus forming a substantial original contribution to the understanding of the field of study. This suggests that there is a high chance for this learning culture leading to a vigorous, rich and diversified in the later works among architecture students.

4. **The effects and impacts of the creative outcomes on the understanding and sharing of research outcome**: Conventional methods of research presentation and documentation have huge inclination to scientific intellectuality and verbal/textual records. Not only that they have been much isolated from the public consciousness, weakening the understanding and acceptability among the professionals and general public, they are also much neglecting the actual close relationship between sciences and arts, which is significant in defining architectural issues. This echoes Snell (2007, p. 4) who argued that ‘the very idea of an exhibition presupposes an audience and a level of engagement or interaction.’

5. **Team dynamics and collaborations**: The learning processes of the integrated approach brought opportunity of cross-semester collaboration and networking amongst students. The exhibition, which required all students to be responsible for hanging of their work, provided an informal avenue for networking.

6. **The significance of visualisation as a learning tool**: The integration of creative outcomes with research makes research more approachable for the students. What makes this research program different from others was that it comprised of two elements which form two complementary outcomes of a singular research program. Thus, both elements maintain the integrity of the specific discourse in which they are created, and ‘speak to’ each other through their common purpose of elucidating a response to the research question. Although there are a
small percentage of students who found difficulty in planning the research, and analysing and synthesising data, the interpretation of research in a visual form encourages their learning. The core ideas behind the teaching and learning approaches implemented in ‘Representing Place’ provided a visual and artistically expressive way to understand an intellective issue to the practitioner of arts, sciences, as well as the general public. Visual displays attract and hold interest which in turn leads to discussion, hence effectively sharing and disseminating architectural/artistic knowledge among all levels in the society.

Conclusion

Based on the fundamental ideas within the concept of student-centred learning, the objective of ‘Representing Place’ was to generate a learning process which is developed from an integrated approach of research, field trip, and creative production. Overall it allowed for the development of student’s discipline-specific knowledge, creative thinking and research skills. The ability to design and carry out independent research acts as a good preparation for students in carrying out their final thesis in degree at later stage. With the analysis-based creative outcomes which were showcased in the form of an exhibition, the balance is strived as students are able to produce architectural ideas and at the same time a creative production at any scale in relation to their research after the field trip. This has made the discourse more meaningful and challenging. The insertion of creative production is clearly setting a real chance for the students to explore experience and learn. The effects being brought up can be even further realized when the students work is being exhibited to their peers and the public.

The integration between research and creative outcomes gives priority to the autonomy of individual minds in running their own research programs. Through this autonomy, students shape research methodologies most suitable and best understood by themselves, thus increasing the effectiveness of them gaining experience and knowledge. It also extended and transformed the research environment into a learning interface similar to that in the design-studio programs, which follows the ideal of ‘to think with the mind, to see with the eye and to make with the hands’. In such learning environment, students are able to find differing ways to learn and express their ideas, thus fostering a positive cross-learning culture.

References

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Does Complaining Behaviour of Students Differ Between the Perceived Reward Power and Punishment Power Towards Lecturers?

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The purpose of the paper is to examine the relationships between the perceived reward power and punishment power of students and their complaining behaviour. It is essential to understand how students perceived an academic’s action and their means of releasing their dissatisfaction. The data was collected through a survey across three private higher institutions in Klang Valley, Malaysia. A total of 111 students participated in the research. The findings indicated that students were more likely to engage in voice, third party complaint and negative word-of-mouth if they perceived their lecturers of having punishment power. In contrary, those who perceived their lecturers of having reward power would less likely to exit the programme and might engage in positive word-of-mouth.

Keywords: Perceived reward power, perceived punishment power, complaint behaviour

Introduction

Universities and colleges in Klang Valley have been experiencing keener competition more than ever before. As organisations delivering higher educational services, universities and colleges need to improve their services to attract and retain students. The student-as-customer concept in higher education as discussed by Kanji and Tambi (1999) is important in improving the delivery of higher educational services as it assists higher education administrator to focus on issues such as student (customer) satisfaction, dissatisfaction and complaining behaviour (Mukherjee, Pinto, & Malhotra, 2009).

Previous studies have indicated that satisfied customers have higher level of retention, providing positive word-of-mouth and boosting the overall sales of the organisation (Rust, Zahorik, & Keiningham, 1995; Stauss & Seidel, 2004). In the context of higher education, students who are satisfied with their institution are more likely to further their studies with the current institution and disseminate good remarks to the society. Conversely, dissatisfied students might engage in several actions or complaint behaviours which could tarnish the reputation of the academics or institution. Therefore, it is vital for tertiary institution to understand how dissatisfied students will react or complain.

The study of Consumer Complaining Behaviour (CCB) is a complex phenomenon influenced by a multiplicity of factors in the choice of a particular complaining action (Dearden & Mason, 1984). In higher education institutions, educators are perceived to possess high levels of autonomy and power in the learning environment, including responding to students’ concerns and complaints (Lovelock, 1983). Therefore, students may often be hesitant to direct complain to educators and administrators for fear of reprisals and other sanctions (Mukherjee et al., 2009). As such, students’ complaint behaviour could be influenced by the perceived power of an academic.

Given that students’ complaints are crucial for future improvement and an understanding of how complaints are made will aid to prevent unnecessary damages that might impact an institution, this research aims to study student’s power perception of their lecturers and their complaining behaviour. The scope for this study will be
only centred on student’s reward power and punishment power perceptions and the effect of these power bases on modes of complaining behaviour.

**Literature review**

**Power and Power perceptions**

Power refers to a capacity that A has to influence the behaviour of B so that B acts in accordance with A’s wishes (Bass, 1990). Hansen (1997) states that power is an important variable in research on all buyer-seller relationships, especially in predicting the complaining style of a buyer who has a dissatisfying experience with the seller. The more power a seller has in the relationship with a particular buyer, the greater is the seller’s ability to punish that buyer. The situation would reverse when the buyer has more power in the relationship (Mukherjee et al., 2009).

Power perception of the service provider impacts the recipient’s evaluation of the quality of service and the appropriate reaction. The perception of the presence or absence of power is more important in a service exchange (Mukherjee et al., 2009).

According to French and Raven (1959), coercive power which is punishment power is similar to reward power because it involves the O’s (power owner) ability to manipulate the attainment of valences. Likewise, in a recent publication by Mukherjee et al. (2009), they classified coercive power as the power to punish and power to reward. In their empirical findings, both punishment power and reward power entailed similar modes of complaint. In the setting of a higher education institution, students always perceive that educators have reward power (Hunt & Nevin, 1974) because they have the ability to mediate rewards for him/her. In addition, educators also have punishment power because students anticipate possible punishment if they fail to yield to the influence attempt.

The notion of coercive power base is dependent on fear. One reacts to this power out of fear of the negative results that might occur if one failed to comply. It rests on the application, or threat of application, of physical sanctions (Robbins & Judge, 2007). In other words, coercive power is based on control over punishments. Shackleton (1995) however observes that despite its negative connotations, coercive power is frequently used to ensure day-to-day compliance issues such as time keeping and meeting deadlines. The fear of being punished motivates most students in completing their work.

Meanwhile, reward power is deemed as power whose basis is the ability to reward. The strength of the reward power of O/P increases with the magnitude of the rewards which P perceives that O can mediate for him. Reward power depends on O’s ability to administer positive valences and to remove or decrease negative valences. The strength of reward power also depends upon the probability that O can mediate the reward, as perceived by P (French & Raven, 1959). Reward power is nothing more than the ability to reward. It is based on the ability to control valued organisational assets, e.g. pay, promotion, information etc. The leader’s influence is seen to depend on the amount of access to rewards: the greater the access the stronger this base of power will be (Braynion, 2004).

**Complaining behaviour**

Consumer compliant behaviour (CCB) is defined by Jacoby and Jaccard (1981) as an action taken by an individual who involves communicating something negative regarding a product or service either to the firm manufacturing or marketing that product or service or to some third-party organisation entity.

Singh (1988) proposes that there are three types of complaining behaviour when dissatisfaction occurs: voice responses (seeking redress from the seller or no action); private responses (word-of-mouth communication); and third-party responses (implementing legal action). Day and Landon (1977) claims that customer complaint behaviour can be divided into two classes: private and public. Public actions include complaining to a seller or manufacturer; taking legal action or complaining to a third party while private actions include negative word of mouth or switching product (exit). Mukherjee et al. (2009) states that there is consensus in the literature on the modes of complaining behaviour:

(i) Voice: direct complaining to the organisation;
(ii) Negative word of mouth: talk about negative experience to family, friends, or co-workers;
(iii) Third party: complaints to an external entity such as media; and
Exit: no complaining involved but customers shift patronage and/or stop using the dissatisfying product or service.

Hypotheses

As mentioned earlier, Mukherjee et al. (2009) have identified that punishment power and reward power yield the same type of complaint behaviour. This creates some confusion with the previous research. Research shows that the type of educator power perceived by students has differential consequences on students and is related to their mode of complaining behaviour (Hansen, 1997). More specifically, Bigne, Blesa, Kuster, & Andreu (2004) critically commented that educators who are perceived to have reward power provide positive effects on the student’s satisfaction. When someone is satisfied with the service encounter, complaint behaviour should be at minimal (Onyeaso, 2007; Tronvoll, 2007). Alternatively, punishment power should be seen as creating dissatisfaction among the students as punishment power is based on fear and sanction. The connotation of student engaging in the same complaint behaviour for both punishment power and reward power does not seem to be in line with the past research. Thus, the mixture of findings in the current literature offers an opportunity for this research to investigate whether the perception of punishment power and reward power result in different forms of complaint behaviour.

Based on the argument posited above, students who perceived the lecturer or professor of having punishment power will have the intention to engage in complaint behaviour (Voice; negative word-of-mouth; third party; or exit). Therefore, we hypothesise:

H1: Students who perceive punishment power would engage in exit complaining behaviour.
H2: Students who perceive punishment power would engage in voice complaining behaviour.
H3: Students who perceive punishment power would engage in negative word-of-mouth complaining behaviour.
H4: Students who perceive punishment power would engage in third party complaining behaviour.

On the other hand, students who perceived reward power should be more satisfied and as a result, their complaint behaviour should decrease. Based on this justification, we hypothesise:

H5: Students who perceive reward power would less likely to engage in exit complaining behaviour.
H6: Students who perceive reward power would less likely to engage in voice complaining behaviour.
H7: Students who perceive reward power would less likely to engage in negative word-of-mouth complaining behaviour.
H8: Students who perceive reward power would less likely to engage in third party complaining behaviour.

Figure 1 as shown below illustrates the research framework of this paper.

Figure 1: Research Framework
Research methodology

Sample and Research Procedure

The sample was acquired based on convenience sampling method and consists of 111 students (54 males & 57 females) from three private colleges in Klang Valley. The administration of the online questionnaire survey was done by the researchers. Letter of invitation was distributed to potential respondents by the researchers in which students were directed to an online survey portal ‘SURVEY MONKEY’ and they were given about one week to complete the survey.

Scale Measurement

The questionnaire consists of a vignette and followed by two sections of questions pertaining to the research issue. The vignette and the items were adopted from Mukherjee et al. (2009) with minor modification to suit the education context in Malaysia. The vignette used in this survey is very appropriate as majority of the students have experienced similar situation before and the vignette is as follows:

‘In one of your classes, your lecturer collected an assignment that was due today. Unfortunately, you did not have the assignment ready to turn in because your computer malfunctioned last night and you could not print the assignment. Even though the course syllabus states that ‘late assignments will not be accepted,’ you decided to request an extension on the assignment until the next day. When you told your lecturer about the malfunction, he/she said, ‘This is unfortunate for you and I would not honour your request.’ (Mukherjee et al., 2009, p.8)

Based on the vignette given, students were asked to complete the questionnaire which consists of 15 questions in two sections. The first section aims to acquire participant’s perception of the reward power (2 items) and punishment power (4 items) of a lecturer in the given vignette. The items were measured based on a five-point Likert scale ranging from ‘completely disagree’ to ‘completely agree’. The second section is targeted to obtain participant’s complaint behaviour based on four categories: voice (3 items); negative word-of-mouth (2 items); third party complaint (3 items); and exit (1 item). The items were measured based on a five-point Likert scale ranging from ‘very unlikely’ to ‘very likely’.

Upon completion of the data gathering process, data analysis is done by using SPSS v16. Data analysis begins with assessing the overall fitness of data through Principal Component Analysis. It is followed by examining the reliability of each construct by evaluating Cronbach’s alpha value. Lastly, the hypotheses were examined by using Pearson Correlation.

Data analysis and Findings

Table 1: Sample fitness, validity test and reliability test.
Table 1(a) above indicates the results from Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett’s Test of Sphericity. Both the tests help to determine the appropriateness of the factor model. A score of 0.622 from KMO indicates acceptable level of fit of the model. In addition Bartlett’s Test of Sphericity indicates that the pairwise correlation is significant ($\chi^2 = 375.542; \text{df} = 91; p = 0.001$). Based on these two tests, the data is adequate for factor analysis. Additionally, Table 1(b) examines the construct validity by evaluating the factor loading within the constructs. The factor loadings on all constructs satisfied the benchmark of 0.5 as proposed by Hair, Anderson, Tatham, and Black (1998). This indicates satisfactory item convergence on the intended constructs. Meanwhile, construct reliability (see Table 1(c)) for all of the factors in the measurement model were above 0.60, an acceptable threshold suggested by Malhotra (2007).

Based on the sample of 111 respondents, the average age is 20.8 years old, with a standard deviation of 1.01. 48.6% of the respondents are male and the remaining 51.4% are female. Out of the 111 students, 66 of them were from non-accounting and finance major, meanwhile 45 of them are pursuing accounting and finance related programme. Table 2 below depicts the mean for each complaint mode being segregated by gender. It is clear that both male (with a mean of 3.74) and female (with a mean of 3.91) are likely to engage in negative word-of-mouth complain behaviour.

Table 2: Mean differences between male and female in their complaining behaviour

<table>
<thead>
<tr>
<th>Complaining Behaviour:</th>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice</td>
<td>Male</td>
<td>54</td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57</td>
<td>2.86</td>
</tr>
<tr>
<td>Negative Word of Mouth</td>
<td>Male</td>
<td>54</td>
<td>3.74</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57</td>
<td>3.91</td>
</tr>
<tr>
<td>Third Party</td>
<td>Male</td>
<td>54</td>
<td>2.64</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57</td>
<td>2.63</td>
</tr>
<tr>
<td>Exit</td>
<td>Male</td>
<td>54</td>
<td>2.78</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57</td>
<td>2.72</td>
</tr>
</tbody>
</table>

Table 3: Findings for Hypotheses

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H1$ Students who perceive punishment power would engage in exit</td>
<td>Not Supported (p &gt; 0.05)</td>
</tr>
<tr>
<td>complaining behaviour.</td>
<td></td>
</tr>
<tr>
<td>$H2$ Students who perceive punishment power would engage in voice</td>
<td>Supported (r = 0.231; p &lt; 0.01)</td>
</tr>
<tr>
<td>complaining behaviour.</td>
<td></td>
</tr>
<tr>
<td>$H3$ Students who perceive punishment power would engage in negative word-</td>
<td>Supported (r = 0.158; p &lt; 0.05)</td>
</tr>
<tr>
<td>of-mouth complaining behaviour.</td>
<td></td>
</tr>
<tr>
<td>$H4$ Students who perceive punishment power would engage in third party</td>
<td>Supported (r = 0.209; p &lt; 0.05)</td>
</tr>
<tr>
<td>complaining behaviour.</td>
<td></td>
</tr>
<tr>
<td>$H5$ Students who perceive reward power would less likely to engage in exit</td>
<td>Supported (r = -0.161; p &lt; 0.05)</td>
</tr>
<tr>
<td>complaining behaviour.</td>
<td></td>
</tr>
<tr>
<td>$H6$ Students who perceive reward power would less likely to engage in voice</td>
<td>Not Supported (p &gt; 0.05)</td>
</tr>
</tbody>
</table>
Students who perceive reward power would less likely to engage in negative word-of-mouth complaining behaviour.

Supported

\( r = -0.163; p < 0.05 \)

Students who perceive reward power would less likely to engage in third party complaining behaviour.

Not Supported (\( p > 0.05 \))

Based on the findings above (Table 3), five hypotheses were supported and the remaining hypotheses were rejected. Perceived punishment power achieved a significant and positive relationship towards voice complaining behaviour, negative word-of-mouth complaining behaviour and third party complaining behaviour, whereas the perceived reward power is negatively correlated to exit and negative word-of-mouth complaining behaviour. It is observed that the perceived punishment power and reward power have different directions in student’s complaining behaviour. When student perceived that a lecturer or professor is utilising his or her punishment power, the respective student would more likely to engage in voice or negative word of mouth or third party control. This result is contrary to the findings of Mukherjee et al. (2009).

Meanwhile, those who perceived their lecturer or professor using reward power would less likely to exit or create negative word-of-mouth. In general, this research failed to establish the relationship between perceived punishment power and exit behaviour. This might be due to the fact that exit would result in more severe consequences (such as failing the unit or withdrawing from the programme). Majority of the colleges in Malaysia do not provide the flexibility of selecting who to teach them or what courses to take or the opportunity to drop any particular course during the semester. The programme or curriculum structure is rather mechanistic and fixed in college where the sample belongs to. As such, selecting exit might not be an appropriate choice for the student. In addition, this research also failed to establish the relationships between perceived punishment power and exit behaviour. This might be due to the fact that exit would result in more severe consequences.

Implications

Students who perceived their lecturer or professor with punishment power would tend to engage in complaint behaviour except withdrawing from the course. In particular students would voice their dissatisfaction to the lecturer him/herself. Some would engage in complaining to the administrative staffs or creating negative publicity for the lecturer or professor. However, those who perceived lecturers with reward power would decrease their intention of exiting the course and more likely to engage in positive word-of-mouth. Therefore, it is crucial for academic to convert the perception of punishment power to reward power. The findings indicate that students would less likely to complain if a lecturer or professor portrayed reward power. Hence, educators should avoid exhibiting punishment power and, provide support and deliberation on student’s behaviour and needs. Understanding and acknowledging their effort could reduce dissatisfaction and complaint behaviour.

Conclusion, limitations and future research

The focus of this paper is to examine the modes of complaining behaviour under the influences of perceived punishment power and reward power. Some other bases of power (i.e. referent power, expert power and legitimate power) have been disregarded. Future research could examine the impact of these perceived powers towards student’s complaint behaviour in Malaysia. Adding to that, potential researchers could also examine the differences in demographic variables (i.e. gender and education level) toward power perception and complaint behaviour by engaging in a larger sample frame and size, such as to include more higher education institutions and universities across Malaysia. This will provide a better and deeper understanding of how perceived powers affect one’s complaint behaviour.

As the global competition increases in the higher education market, reducing student’s dissatisfaction is imperative. Educators have to acknowledge the impact of perceived power as it will influence how a student would complain and subsequently, affecting their satisfaction and theories, their retention in the institution. As conclusion, students who perceived their lecturer or professor of having punishment power would more likely to engage in voice or third party complaint behaviour. Meanwhile those who perceived reward power would less likely engage in any form of complaint behaviour. It is hoped that this paper will lay the foundation for future research in the field service delivery in Malaysia.
References


‘Reflections’ of Learning: An Integrated Portfolio as a Method to Assess ‘Graduate Capabilities’

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In recent years, the employability of graduates has been a key concern. Grappling on this issue, many institutions of higher learning have developed frameworks on teaching and learning. This was commonly labelled as graduate attributes/qualities/capabilities/skills. One of the key approaches to assess and demonstrate the level of attainment of ‘graduate capabilities’ is through a portfolio. In the discipline of architecture and other design-related fields, a portfolio has been a common assessment method. However, it was limited to a document showcasing design work rather than a document which demonstrates the reflections of students’ learning and their ‘capabilities’, i.e. the overall discipline-specific knowledge, cognitive and soft skills that students gain during their term of studies. Taking this area as the premise for study, this paper presents a model of an integrated portfolio as a method to assess students’ learning. It is based on a model which has been designed and implemented in a School of Architecture of a private institution of higher learning in Klang Valley. Through a focus group discussion with the academics who implemented the TGC portfolio assessment and students who prepared their portfolios, this paper discusses the model and outcomes (effectiveness and problems) of the integrated portfolio as an assessment method.

Keywords: Graduate Capabilities, Portfolio, Assessment

Introduction

The issue of employment has been a growing concern for many institutes of higher learning. ‘[For] new students taking degree and diploma programmes … academic credentials alone were not enough to ensure employment.’ (Mustapa, cited in Berita Wilayah, 2007) According to Nunan (1999), mass higher education when compared with a semi-elite system raises questions of comparability and standards in their attempts to gain employment. In the case of mass education, students have two concerns: that institutions will provide courses that include employment-related skills, and that employers will recognise their degree as one embracing such skills. This leads to students wanting to document the types of knowledge and skills fostered within their degree and their level of development. The question of how to evaluate a graduate in the employment market was a difficult one. Thus, many institutions of higher learning have developed a framework to capture the graduate qualities/attributes capabilities/skills as a means to close the employability gap.

According to Nunan (1999), the concept of being a graduate of a particular university carries with the notion that all graduates of the university should possess a particular set of qualities in a generic form. This generic form can be applied to a particular degree and can provide guidance for the implementation of course design, teaching and learning, and assessment of students. Nunan (1999) quoted Coald rake and argued that in the U.S.A, U.K. and Australia, the position taken by institution of higher learning in relation to the graduate qualities have received prominent attention. The emphasis on explicit statements of course learning outcomes is paramount. Although much has been written on the graduate qualities, translation into practice is essentially about culture change. The transition involved identifying and defining graduate qualities within the discipline-specific contexts (bounded by professional requirements), embedding and framing curriculum to facilitate the development of graduate qualities, designing appropriate learning experiences, assessment practice, and monitoring student’s achievement of the intended course learning outcomes and graduate qualities. (Goldsworthy, 2003)

Taking precedence from such paradigm shift toward the need to frame graduate qualities, Taylor’s University College (TUC) developed a framework described as ‘Taylor’s Graduate Capabilities’ (Ang, 2007) or in short
TGC which sets up the expectations of the school of its distinctive graduates. They are a set of capabilities that encompass the discipline-specific knowledge, cognitive capabilities and soft skills of Taylor’s graduates. These are recorded by students in the form of individual student portfolios and verified by TUC against the set of expectations for each subject and program.

This paper discusses the application of Ang’s (2007) set of templates for the students’ TGC portfolio into practice by presenting a model of the integrated Taylor’s Graduate Capabilities portfolio implemented in the School of Architecture. Firstly, this paper presents the background related to the TGC portfolio template set up by Ang (2007). Subsequently, it presents the phases involved in the development of an integrated TGC portfolio based on the model implemented by the School of Architecture, and finally, it identifies advantages and challenges faced by academics in its implementation.

The Taylor’s Graduate Capabilities portfolio

Portfolio assessment has been widely used in educational settings as a way to examine and measure progress, by documenting the process of learning as it occurs. In this sense, it is not a random collection of students’ works; rather, it is systematic in that the works that are included relate to major learning outcomes. Portfolio assessment provides the teacher and students an opportunity to observe students in a broader context: taking risks, developing creative solutions, and learning to make judgments about their own performances. It captures how students improve in their awareness of what they know, what they are learning, areas that need improvement, and so forth.

At Taylor’s University College, the teaching and learning approach is focused on developing the Taylor’s Graduate Capabilities in its students. The capabilities encompass three broad domains: discipline-specific knowledge, cognitive capabilities and soft skills.

<table>
<thead>
<tr>
<th>A Taylor’s graduate has proven ability and is capable in the following areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discipline-specific knowledge</strong></td>
</tr>
<tr>
<td>Sound understanding of foundational concepts and theories in subject area</td>
</tr>
<tr>
<td><strong>Cognitive capabilities</strong></td>
</tr>
<tr>
<td>Foundations and skills for lifelong learning</td>
</tr>
<tr>
<td>Learns autonomously</td>
</tr>
<tr>
<td>Able to acquire and manage information</td>
</tr>
<tr>
<td>Ability to comprehend a wide variety of literature</td>
</tr>
<tr>
<td>Awareness of contemporary global issues</td>
</tr>
<tr>
<td><strong>Problem-solving skills</strong></td>
</tr>
<tr>
<td>Defines issues or problems well</td>
</tr>
<tr>
<td>Analyses problems comprehensively</td>
</tr>
<tr>
<td>Applies knowledge effectively and applies theory to practise</td>
</tr>
<tr>
<td>Able to arrive at workable and effective solutions</td>
</tr>
<tr>
<td><strong>Soft skills</strong></td>
</tr>
<tr>
<td><strong>Communication skills</strong></td>
</tr>
<tr>
<td>Ability to speak and write well</td>
</tr>
<tr>
<td>Able to organize, synthesize and present information effectively</td>
</tr>
<tr>
<td><strong>Interpersonal skills</strong></td>
</tr>
<tr>
<td>Understands team dynamics, power of teams and teamwork</td>
</tr>
<tr>
<td>Works with others in a team</td>
</tr>
<tr>
<td>Able to assume leadership in small and/or big groups</td>
</tr>
<tr>
<td><strong>Intrapersonal skills</strong></td>
</tr>
<tr>
<td>Ability to manage time effectively</td>
</tr>
<tr>
<td>Understands the role of personal image and professionalism at work</td>
</tr>
<tr>
<td>Works independently in context of tasks to be completed</td>
</tr>
<tr>
<td><strong>Cosmopolitan thinking and intercultural competence</strong></td>
</tr>
<tr>
<td>Forms opinions and articulates views from a global perspective</td>
</tr>
<tr>
<td>Awareness of and sensitivity to cross-cultural differences</td>
</tr>
<tr>
<td><strong>Technology savvy</strong></td>
</tr>
<tr>
<td>Executive keyboarding</td>
</tr>
<tr>
<td>Effective use of ICT and related technologies</td>
</tr>
</tbody>
</table>

Figure 1: The domains of Taylor’s Graduate Capabilities (Ang, 2007, p. 11)

The key purpose of the portfolio is for students to be more aware of the particular transferable skills involved in their learning tasks and where they are in their skills development. Ang (2007) proposed a set of templates for the students’ TGC portfolios (see Figure 2), adapted from the Adelaide University model (2001) that allowed students to map their own development of TGC during the course of their studies. The key purpose of the portfolio is for students to be more aware of the particular transferable skills involved in their learning tasks and where they are in their skills development.
This template is to be particularized for each Programme/School to develop a specific portfolio suited to the programme. It sets the base for an integrated portfolio which the set of capabilities attained at the end of each semester of study which was taken up and developed within the School of Architecture.

The implementation of an Integrated Taylor’s Graduate Capabilities (TGC) Portfolio in the School of Architecture

In the architecture discipline, a design portfolio is a common tool for assessing design skills and knowledge. It is commonly used for student’s entry into universities, for employment and for professional accreditation. In line with the paradigm shift toward the TGC and adapting the framework set up by Ang (2007), the assessment by way of a design portfolio was revised into an integrated TGC portfolio which comprised of a visual-driven portfolio document and a portfolio form.

In order to implement the TGC portfolio assessment, a four-phase strategy was adapted and particularized from a generic assessment model (see Figure 3).
Phase 1: Determining and Aligning Taylor’s Graduate Capabilities

The purpose of the portfolio is to reflect on the TGC developed and attained by students every semester. In order to achieve that, TGC is aligned to teaching and learning at three different levels:

1. Curriculum design—aligning the learning outcomes of each subject to the TGC (for example, see Figure 4)
2. Curriculum delivery—implementing developing instructional models to deliver syllabus designed
3. Assessment—aligning student’s task to the learning outcomes prescribed

<table>
<thead>
<tr>
<th>Sound understanding of foundational concepts and theories in subject area</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Describe design concept and its translation into design</td>
</tr>
<tr>
<td>• Explain architectural space, form and function of design projects</td>
</tr>
<tr>
<td>• Identify basic principles of design</td>
</tr>
<tr>
<td>• Apply basic architectural design considerations of openings and layout which inform space and form</td>
</tr>
<tr>
<td>Foundations and skills for lifelong learning</td>
</tr>
<tr>
<td>• Generate design concept from personal experiences of site and self expressions</td>
</tr>
<tr>
<td>• Generate design through the processes of drawing</td>
</tr>
<tr>
<td>• Generate design through model making</td>
</tr>
<tr>
<td>Problem solving skills</td>
</tr>
<tr>
<td>• Apply a knowledge effectively and applied thinking to practice: Design in response to self expression</td>
</tr>
<tr>
<td>• Able to arrive at workable and effective solutions: Design simple architectural space with synthesis of site, space form, function</td>
</tr>
<tr>
<td>• Apply considerations of end-uses/ openings and materials to develop spatial qualities of design</td>
</tr>
<tr>
<td>Communication skills</td>
</tr>
<tr>
<td>• Ability to speak well. Virtually present project outcomes before peers and assessors</td>
</tr>
<tr>
<td>• Able to organize, synthesize and present information effectively. Document, sketch and explain from personal experiences of the built and natural environment</td>
</tr>
<tr>
<td>• Able to organize, synthesize and present information effectively. Compile own work for presentation in the form of portfolio and exhibitions</td>
</tr>
<tr>
<td>• Able to organize, synthesize and present information effectively. Produce orthogonal drawings and models to visualize the architectural design</td>
</tr>
<tr>
<td>Interpersonal skills</td>
</tr>
<tr>
<td>• Works with others in a team</td>
</tr>
<tr>
<td>• Interpersonal skills</td>
</tr>
<tr>
<td>• Produce and complete own output for schedules presentations during all stages of design</td>
</tr>
<tr>
<td>Technical skills</td>
</tr>
<tr>
<td>• Use of computer to do and produce work</td>
</tr>
</tbody>
</table>

Figure 4: Mapping of Learning Outcomes of a subject (Architectural Design Studio 1) to the TGC
Phase 2: Setting criteria for the TGC Portfolio

The subsequent phase involved the identification of concept and content for the TGC portfolio. In order to develop the content, questions were raised. The first step involved the re-thinking of the portfolio as an assessment tool is essential. Questions prompted were:

1. How might a portfolio assessment process complement or address our current approach?
2. How can we ensure that students understand the purpose and process involved in developing and maintaining a portfolio?
3. How can we integrate different forms of assessments implemented in different subjects within the portfolio?

Based on these questions, it was determined that a visual-driven portfolio and a portfolio form (which documents student’s affective responses to the learning outcomes acquired for each subject) will be used for the assessment of TGC. The TGC Portfolio is assessed based on the A3 hardcover bounded document (see Figures 5 & 6), and the TGC portfolio form.

The TGC portfolio form is designed to gauge how far students value their learning process and the skills they have gained for that semester. The main purpose of the form was for students’ reflection of their learning. To do so, it asks students to identify the tasks they undertook to accomplish a particular learning outcome, and to reflect on it in terms of the parts they have excelled and the parts where they need improvements.

Besides that, the re-thinking of portfolio revealed the need for innovative assessment methods where lecturers are required to innovate assessments within the syllabi of the subjects in order to complement the mapping of student’s development of learning outcomes. It also stressed the need to establish portfolio workshops in order to introduce students’ to the concept and purpose of the TGC portfolio and teach them basic skills for preparing portfolios.

The next step involved the identification of portfolio content in relation to the learning outcomes of individual subject within the programme. This was based on various considerations which are translated in the form of questions:

1. What are the major learning outcomes that form the basis for the core curriculum during a specific semester?
2. What are the primary assessments that can be designed to provide evidence of students’ acquisition of essential transferable skills and discipline-specific knowledge?
3. Which of the learning outcomes can be assessed most effectively by a portfolio approach?

Based on these questions, it was established that lecturers are to stress the importance of learning outcomes (outcome-based learning) when delivering a subject, and to prepare and develop a checklist for students to ascertain the content of portfolio.
Phase 3: TGC Portfolio Workshop

TGC portfolio workshops were developed in order to introduce the TGC portfolio as an assessment method. The workshops were divided into two sessions:

1. The TGC portfolio: to convey the purpose of the portfolio, to identify the format and content of the portfolio
2. Using Photoshop to create a portfolio: to provide hands-on digital workshop of ‘how to’ create a portfolio using Photoshop.

These sessions are developed as part of the Learning and Academic Skills Workshops for the first semester students.

Phase 4: Assessment of Portfolio

The assessment of the portfolio is both formative (i.e. throughout the semester) and summative (i.e. as part of a culminating project to determine the extent to which identified learning outcomes have been achieved). In order for thoughtful evaluation to take place, multiple scoring strategies were used to evaluate students’ progress. Criteria for a finished portfolio included several of the following:

- Reflections of learning (evidence of students’ monitoring of their own acquisition of discipline-specific knowledge, cognitive capabilities and soft skills).
- Learning process: Growth and development in relationship to key learning outcomes.
- Understanding and application of key processes and learning outcomes.
- Completeness, correctness, and appropriateness of products and processes presented in the portfolio. (adapted from Burke, 1994)

Effectiveness and problems of the TGC Portfolio

During the post-implementation of the TGC portfolio, a focus group comprised of lecturers within the school who implemented the portfolio was set up to discuss on its effectiveness and challenges. The outcomes of the discussion suggest that the TGC portfolio it is an effective way for measuring the discipline-specific knowledge, cognitive capabilities and soft skills of students. Besides the common advantages of the portfolio assessment being an appropriate approach for evaluating programmes which are flexible and a way to measure progress towards learning outcomes, the integrated TGC portfolio reveals that it also effective because it provides the following:

1. Programme definition: It clarifies the identity of a programme and the ‘thinking’ behind the progression and development of the programme.
2. Programme provides evidence of the holistic development of student’s capabilities, for example it demonstrates subject integration effectively to the first time viewer.
3. It acted as a validating tool to cross-relate to other assessments methods used within the subjects, e.g. test, reports, design projects.
4. It fosters intentional learners who can see connections in seemingly disparate information. Students become self-aware about their studies and their learning processes.

Despite its effectiveness, the implementation of TGC portfolio has its problems and challenges.

1. The portfolio assessment is time-consuming in terms of preparation and assessment process because it is used as a validating tool to correlate student’s performance in other assessment types.
2. The assessment is also time-consuming when there is a large student population within a particular cohort.
3. There is a lot of pre-planning required to identify learning outcomes suitable for portfolio assessment.
4. It is imperative for all lecturers to be clear about the syllabus of the programme.
5. It also requires a lot of integrated discussion between lecturers of different subjects.

Similar focus group sessions were held with the students. Based on students’ feedback, the advantages of the portfolio are as follows:

1. The portfolio is an evidence of their works and efforts which captures the entirety of what they have learned within each semester.
2. The portfolio enabled them to improve their use of computer for digital layouts.
3. The portfolio forms a holistic compilation of works which can be used for interviews.
4. A beautifully crafted and well-compiled and composed portfolio gave students a sense of accomplishment.
On the other hand, students pointed out the drawbacks they faced when preparing their portfolio:

1. Insufficient time for the preparation and completion of the portfolio.
2. The portfolio is a costly document.
3. The portfolio form is too lengthy.

**Future development and improvement to the TGC portfolio**

Based on the feedback gathered from the focus group amongst students and lecturers, there are several actions which will be taken.

1. To embed the TGC portfolio form into the subject delivery within the semester. This means that each lecturer coordinating the subject should ensure that students conduct reflections of their learning during the semester rather than at the end of each semester.
2. The lecturer of each subject needs to plan informal meetings in which students’ revise their work and discuss their progress and should be taken as an essential part of the portfolio assessment process. Thus, the portfolio is viewed as a work-in-progress through the semester rather than an outcome at the end.
3. The initiative for e-portfolio to digitize portfolios. This will minimise the cost for printing the portfolios, and also provide a web-based channel for student’s to showcase their portfolios to a broader context of audience.

**Conclusion**

The Taylor’s Graduate Capabilities Portfolio is an effective way to examine and measure progress, by documenting the process of learning. It enables students to take responsibility for their personal learning process and outcomes, and thus value learning. It captures students’ capabilities beyond academic credentials. Although the implementation of the TGC portfolio assessment has its problems and challenges, the process of refinement one semester after another will improve the outcomes. The emphasis on discipline-specific knowledge, cognitive and soft skills as framed by the TGC is captured holistically and presents the ‘identity’ of students, getting them a step closer to closing the employability gap.

**References**

Problem-Based Learning as a New Trend in Language Teaching and Learning

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This study aims to introduce problem-based learning (PBL) approach into the teaching and learning of English language in Malaysian English for Second Language (ESL) classroom. It is a qualitative experimental study which seeks to investigate the perception of undergraduates and teachers on the impact of PBL on language learning. The participants involved are 32 undergraduates and 2 English tutors from an ESL classroom in a local university in Malaysia. The findings showed both students and teachers have positive perceptions on problem-based language learning and PBL has shown a positive impact especially on speaking skills. The finding of this study has drawn some implications on the teaching and learning of ESL among adult language learners.

Keywords: Problem-based learning, English for Second Language, Adult language learning

1.0 INTRODUCTION

Problem-based learning is a focused and experiential learning method based on the principle of using real-world problems as a starting point for the acquisition and integration of new knowledge (Barrows, 2002; Torp and Sage, 2002). The fundamental idea of problem-based learning is to encourage students to take responsibility for their own learning by giving them complex real-world problems to solve. Messy and ill-structured problems are used as triggers to motivate, focus and initiate students’ learning. Then students will work on the problems in small groups and under the tutor’s guidance, where they can acquire knowledge and skills at the same time during PBL process (Barrows, 2002; Larsson, 2001; Wee, 2004).

Problem-based learning is a new trend in language education. It is widely recognised as an effective method in education since 1980s especially in the field of medical, pharmacy, nursing, engineering, business and economics (Boud & Fletti, 1997). However, PBL starts being used in language education only in the late 1990s. According to Mathews-Aydinli (2007), problem-based learning is an approach which enables students to learn the target language through using the language, rather than just being presented with the language and then practising predetermined language structures. This is in line with the constructivist view where language learners construct their own knowledge of the language through understanding the conventions of the language use by engaging in various language activities in real life (Mardziah Hayati Abdullah, 1998).

Only a few studies were conducted in a language classroom. Mardziah Hayati Abdullah (1998), Larsson (2001) and Mathews-Aydinli (2007) suggested a programmatic description of adopting a PBL approach in English language classroom. However, their seemed to be conceptual discussions and not any existing classroom or courses adopting a PBL approach. Allen & Rooney (1998) has designed a PBL environment for ESL students in Business Communication, while Wood and Head (2003) conducted a case study by implementing PBL approach in Biomedical English Course. They explained in detail of how to implement PBL approach in their language classroom but still there is no empirical data showing how applicable PBL is on language learning. Two qualitative studies were conducted in a Malaysian context. Sim (2006) tried to investigate the impact of PBL in the learning of English for Occupational Purposes among undergraduates while Mardziah Hayati & Tan (2008)
looked into the use of collaborative PBL activity in online English forum conferencing among undergraduates too. Both studies found positive impacts on students’ English language learning.

Hence, the purpose of this study is to introduce a PBL approach into the teaching and learning of English language among Malaysian undergraduates in University Kebangsaan Malaysia and to identify both students and teachers’ perceptions on the impact of PBL on language learning. It is a qualitative experimental study that seeks to examine how applicable is PBL in a foundation English language classroom.

The following research questions were asked in this study:

1. What is the students’ perception on the impact of PBL on language learning?
2. What is the teachers’ perception on the impact of PBL on language learning?

2.0 RESEARCH METHODOLOGY

A total of 32 undergraduates who enrolled in the Foundation English Language Course in Universiti Kebangsaan Malaysia were selected through clustered random sampling as the participants for this study. This is a compulsory course to be taken by all local undergraduates who obtained Band 1 or 2 in MUET (Malaysian University English Test). In other words, they are of limited proficiency language learners. Therefore, the main objective of this course is to build their confidence in using English language so that they are able to speak and write in English at ease.

On the other hand, two experienced female tutors were invited to participate in this study. They have more than 10 years of experience in ESL teaching and were teaching the Foundation English programme in the Centre for General Studies, Universiti Kebangsaan Malaysia. However, they were new to PBL. A brief introduction on problem-based learning was given to these tutors before the study started in order to let them understand the concept of PBL, their roles and how PBL is going to be implemented in this study.

The data of this study was collected over a period of six weeks during the third semester of session 2008/09. The participants undergo normal Foundation English classes as scheduled in the syllabus of the course. 50% of the time allocated for the course was replaced with PBL module. Therefore, the students had spent 180 minutes weekly for PBL activities. At the end of the every PBL module, an open-ended questionnaire was administered to the students in order to get their comments on the programme. On the other hand, the views from teachers involved were elicited through interview sections at the end of the study.

PROBLEM-BASED LEARNING MODULE

The conceptual framework of this study was adapted from Wee (2004) and Tan (2003). Firstly, an ill-structured real-life problem is presented to students as trigger. Then students who formed in groups should act as stakeholders who owned the problem. Teachers acted as facilitators who presented the problem and guided the whole process of problem-solving. Therefore, within a self-directed and collaborative learning environment, students plan their own learning in order to solve the problem. They need to use the target language to access and obtain information, express their opinion and share information within their groups. As they generate solutions to their problems, they learn to read, write, listen, speak and even think more effectively. In addition, they develop new vocabularies, new rules of grammar and conventions of social language use. Therefore they construct an understanding of the language as it is used in the real world contexts (Larsson, 2001; Mardziah Hayati Abdullah, 1998; Mathews-Aydinli, 2007). Larsson (2001) indicates that social interaction in PBL enhances language learning. Hence Problem-based learning could be the right choice for modern language education.

A total of three PBL modules were created in order to give the students a PBL experience in English language learning. The PBL process was adapted from PBL model suggested by Mathews-Aydinli (2007) and Torp and Sage (2002). Students who enrolled for the course were required to attend for the class twice a week, with three hours a day; PBL module took 90 minutes a day for the duration of six weeks. Therefore, there were altogether 11 meetings on PBL. During the first meeting, the tutor gave a brief introduction about PBL approach so that the students had an idea of how PBL works and understood the benefits PBL. According to Bowe (2001) who designed a Physics PBL course, students would benefit more if they were given an introduction course before engaging in a PBL course. The introduction on PBL highlighted on the tutor’s role in the PBL process, the tutor’s expectation on students’ participation in the PBL process and to practise self-directed learning, the principles and practices of learning in groups and issues of time management. This was to ensure that students understood the goal of PBL and participated fully in the PBL process.
Then, the tutor formed students into groups of six. Students with different proficiency levels were grouped together so that the less proficient students could observe and learn from the more proficient students and to ensure that English language was used during the entire PBL process (Mathews-Aydinli, 2007). A group leader and a note-taker were appointed within the group during every meeting. Their roles were to direct the group discussion and took down minutes respectively during every meeting. Every student took turns and had equal chance to become the group leader and note-taker. This was to make sure that every member of the group participated fully in problem solving. In addition, it gave every student equal opportunities to exercise on speaking and writing skills.

In the second meeting, the students entered the first module of PBL process and they were given an ill-structured problem to solve. (An example of ill-structured problem is shown in Appendix A). The tutor made sure they understood the problem and emphasized that there was no single answer or solution to the problem. Then, the tutor guided them to discuss about things they have known and things they needed to know in order to solve the problem. No direct answers were to be given but the tutor guided the students to think further by asking some good questions. The tutor made sure that the students had sufficient resources to gather information related to the problem. At the end of the discussion, the group came out with an action plan to search for the information they needed in order to solve the problem. Besides, every student was required to write a reflection on their own understanding and ideas on the problem and discussion in the group.

The students then spent a few days to read extensively on the topic and to search for relevant information. Every student came out with some solutions and brought them into discussion on the third week of PBL meeting. After every member had presented their findings to the group, they discussed further and improved on the solutions with further readings and investigations. At the end of the discussion, every student wrote another reflection on their own learning at this stage.

On the fourth week, every group presented their findings to the whole class through a poster and oral presentation. Every member of the group presented a small part of their group findings and their presentations were evaluated on their speaking skills according to the grading scheme. After the presentation, the tutor had a debriefing session with the students. Self-assessment and evaluation forms were administered to the students to evaluate on their own learning and perception on the PBL process. The tutor then gave some feedback on the students’ performance and made a conclusion of the problem. The similar PBL process was repeated from week five to week ten for two more modules.

3.0 FINDINGS

3.1 Students’ View on PBL in Language Classroom

Students’ Perceived Major Improvements after PBL Modules

The finding of the study shows that the students have very positive perception towards PBL. Three quarter of the respondents (76%) indicates that PBL had contributed to the improvement in their language and communication skills. It was indeed helping them to be more comfortable in using the language. Within the 76% of perceived positive impacts in language and communication skills, about half of the impact was contributed to speaking, presentation and communication skills. A total of 17% of the subjects perceived to have improved in their speaking skills, 12% in presentation skills, while another 8% in communication skills. It showed that PBL had really helped them to speak the target language better. Besides, another major impact was in linguistic skills. Students perceived that PBL had raised their self-confidence in using English language. This has contributed to 15% of the total respondents and it was mainly referring to confidence in speaking. On top of that, many had responded that PBL contributed positive impact on their vocabulary (7%) and grammar (7%). They might not be speaking English with accurate grammar and vocabulary yet, but there was slight improvement in their language. Apart from these major responses, some students claimed that PBL had also enhanced their reading (3%), writing (3%) and listening skills (3%).

To the students, PBL has also contributed to the improvements in their non-linguistic skills, especially on their critical thinking and problem solving skills (9%). Other than this, PBL was believed to have helped students to improve their collaborative skills (7%), professionalism and leadership skills (4%) and others (2%).
Students’ General Comments about PBL

Many students commented that PBL has promoted their self-confidence in using English language. One of the students stated this: “This is a good way to someone who does not have confidence in using English” (S4). Since these students were so used to communicate with friends in their mother tongue, which was Malay language, they could hardly find opportunities to practise English out of the classroom. Even some English classrooms did not allocate much time for students to speak freely in the language. Therefore, many students appreciated the vast opportunities given through PBL which forced everyone to use English only during the process of discussions and presentations. Through frequent practice in the language, students gained much confidence to use it in their daily lives, especially in spoken language. “It’s good to improve English speaking” (S7). Even though they might not be using the accurate grammars or correct sentence structures, at least they were trying, and this was actually a crucial part of the learning process.

“By the PBL, I think it can give me much improvement in speaking, writing and listening skills. Besides that, I can now communicate with my friends in English although [it is] in broken grammar. But we are brave to try speaking [the language]” (S32).

Another student commented that PBL was the best approach for this Foundation English Language course as it helped them to improve their English in a practical way. “I think PBL is the best way for this course... PBL is a good idea to improve the English among student” (S22). We could understand that these undergraduates had actually been learning English for at least 12 years in Formal English Classes. They had gone through all sorts of drilling in English grammars and rules. What they needed was just the opportunity for them to practise the knowledge about English language in a practical way. PBL has motivated them to learn and explore both language and knowledge that was related to their real world situation.

Since PBL uses authentic problems of the real world and involves a lot of critical thinking and problem solving, it prepares the students for their future career. “[PBL is] suitable to improve our critical thinking skills and increase our confidence level to present the ideas” (S9). Another student who was a teacher trainee commented that “PBL also helps to improve my presentation skills and it is very important for me as student from [the] Faculty of Education” (S12). These were some soft skills needed by every graduate in this post-modern era in order to increase their competitiveness in the job market.

Last, but not the least, students enjoyed PBL activities very much. “PBL is good and fun” (S30). They preferred to learn English in a fun way. “It is a good way to learn English and more fun, to give an opinion with each other in group member” (S29). “It’s good and enjoyable. Not just study but can enjoy the lesson” (S30). In the conventional lecture-based learning, teachers were the main source or learning model for students. However, in PBL, students could learn from their peers as well. They shared ideas and knowledge among themselves and corrected each other when they made mistakes. Besides, it was definitely more comfortable to communicate with peers and learned from them. Additionally, students would be more motivated to learn when they enjoyed the lessons. Thus, PBL had a positive impact on students’ motivation in learning the language. Many students suggested that PBL approach should be used for their next English course and the future Foundation English Language course. “I think this activity [PBL] should continue to the next semesters, so that, other students can feel the experience during the PBL that helped us a lot” (S31).

3.2 Teachers’ View on PBL in Language Classroom

Teachers’ Perception on PBL as a Whole

In general, both teachers had positive perception on PBL in a language classroom too. This experimental study was a totally new experience for both teachers. Before this, they did employ project-based learning in this course. But it was different from problem-based learning as the teachers did not monitor the students in terms of the process of completing the project. In project-based learning, students work together in groups and will come out with an end product later. During the process, students will meet their teacher twice for conferencing sections. Those are the only time when teachers can see their students’ progress on the project and provide guidance. Then teachers will assess the students mainly based on the end product. Therefore, it is difficult to see students’ progress and language development. One of the teachers commented that, “When it’s a project-based learning, I think we just leave the students to do whatever on their own, just conferencing, not very effective as having to see them and discuss in [PBL] class” (T2). Whereas in PBL, “I found that by using PBL, students get
Both teachers agreed that PBL was applicable in language classroom as they could see positive impacts on students. “I’m glad that even the students themselves think that PBL is helping them. It’s good. From the students’ feedback, most of them said that they were using a lot of English and they are so motivated about it” (T1). Another teacher commented that, “PBL is a possible way to encourage language learning. And I think it is very, very applicable. In fact, we are going to apply it in our new course in new semester as part of the module” (T2). During the experimental study, students were forced to use English only in class. Therefore they needed to use English throughout the whole process of discussions and presentation. Teachers could see that students were given the autonomy to learn language for communication purposes. Compared to the conventional way of language learning, teachers felt that PBL provided students with more chances to really practise the language.

Besides, teachers could see that the students were so motivated to solve problems. They were motivated to read and learn more in order to participate and contribute during the group discussions. It has motivated them to improve in their language proficiency naturally and in a real-world situation. As one of the teachers noted that, “Surely PBL motivates the students more compared to conventional method, especially in language learning because when you teach them grammar, you teach them this moment, next moment they forget already. But when they have to read and use it, that’s the acquisition in real sense. They use the language” (T1). However, both teachers reminded that PBL would motivate the students only when the ill-structured problem was interesting and attracted them.

The main characteristic of PBL that impressed the teachers was the process where the students needed to do the discussions in class. “…in this way [PBL], everybody is discussing and listening to that discussion… I think because the discussion is being done in class, so I think that it helps” (T1). Besides creating more opportunity for students to speak the language in class, it allowed teachers to join in their discussion and monitor their learning process. Teachers were able to notice their language problems and helped them individually.

**Teachers’ Perception on the Impact of PBL on ESL Learning**

Both teachers perceived that the most significant impact of PBL on language learning is confidence building. As Teacher 1 (T1) states that,

“I think it has worked to the extent that as far as gaining confidence, yes. Because they discussed, they talked. Even though it is broken English, but at least they tried.”

Therefore, the course objective as stated in the course synopsis was met, that is, to help the students to gain confidence in using English. The students were found to be more confident in speaking freely in front of public. “I just want them to be free to use the language at ease and be comfortable with the language. I think they have met that” (T2). They even have rapport with audience during their presentations, as the teacher felt that it’s not easy to have rapport with audience when the speaker has problem with the language. “I think they have done very well with PBL for them to have confidence and to be sensitive to audience” (T1). “They have the opportunity to present, not once, but many times. So in terms of confidence building, yes, it is very good… that is very significant” (T2).

Besides, teachers observed that students had also improved in their fluency. Since they had more chances to practise on the language, they could speak more fluently and even think in English. This is because their language structures are in English. However, there was only slight improvement in terms of language accuracy but teachers could see that they were trying to be accurate along the process. Of course we did not expect students to speak fluently and accurately overnight. That was the time limitation of this study that the impact on language accuracy was not significant.

The positive impact of PBL seemed to be restricted to speaking skills and presentation skills only. Both teachers pointed out that they did not notice any significant impact on writing skill. One of the teachers suggested that there should be more interventions by giving proper guidance and feedbacks on students’ writing. It was also one of the constraints in this study that the limitation of time has caused the teachers to delay the marking of their reflective journals and comment on their writings. Besides writing skills, teachers were not sure whether PBL has a positive impact on their reading and listening skills. This was because these two particular skills were not tested in this study.
4.0 CONCLUSION

As a conclusion, PBL is perceived to have enhanced the process of language learning among limited proficiency language learners. The findings of this study showed that students had positive perception on the impact of problem-based language learning. They felt they had improved in their confidence in using the language, especially in speaking. They could speak more fluently and were more comfortable with the language. However, the perceived improvements achieved were not in terms of their language accuracy. Students felt enjoyed and motivated to learn language in a fun and yet effective way.

On the other hand, teachers had positive perception on the impact of problem-based language learning as well. Both teachers felt that PBL has motivated students in language learning and they had gained much confidence in English speaking. They suggested that PBL is suitable for all kinds of English courses. It is applicable in Foundation English classes, Advance English classes, English for Specific Purposes (ESP) classes and others. PBL can be carried out in the same way but serves different objectives. It is remarkably suitable for adult language learning in higher institution. This is because adult language learners have acquired lots of language rules but just lack of opportunities to use the language. Therefore, PBL could help them more effectively.

5.0 IMPLICATION OF THE STUDY

This study has drawn some valuable implications to the teaching and learning of ESL. As suggested by Swain (2005), output production is crucial in language learning. Constant practicing of language production is helpful in enhancing ESL learning and improves language accuracy. This explained the problem why many undergraduates in Malaysia could not produce good English even though have been learning English for more than 12 years in schools (Mohd Nordin et al., 2003; Zainal, 2002). They seldom have the opportunity to practise language production inside and outside the classrooms. Therefore, PBL serves to be a more suitable approach for them to improve from their weaknesses.

With massive opportunity provided through PBL, students can use the language and test out the language rules which they have learned. Through the process of negotiating and testing, they will notice their language gaps and thus improve from there. Therefore, PBL is recommended to be used as a teaching and learning method in higher education institutions as PBL not only enhance students’ language proficiency through substantial language production opportunity, it promotes various non-linguistic skills which prepare them for future career. For instance, students will gain leadership skills, collaborative skills, critical thinking skills and problem-solving skills from PBL.

“New competencies” are needed in order to survive in this postmodern era. Universities and Higher Education Institutions play vital roles to equip graduates with relevant competencies which meet the needs of the society. Effective communication skills should be the emphasis which many educators should look into. It is awful to see graduates with lots of knowledge in their head but fail to communicate their ideas and thoughts effectively. Therefore, PBL could be a solution to this problem as it is found in this study that it promotes self-confidence in using the language and improve fluency. Besides, PBL also helps to develop leadership skills, collaborative skills, critical thinking skills and problem-solving skills which prepare them for their future career advancement.

References


APPENDIX A

Example of Ill-Structured Problems:

The world is facing the worst economic downturn since year 2008. This global economic crisis has caused a sharp slowdown in the economic growth and recession is strongly felt especially in developing countries like Malaysia. Many factories were closing down and both skilled and unskilled staffs were being retrenched.

Question:
1. What do you think are the causes of retrenchment happening around?
2. As a fresh graduate, how can you increase your competitiveness in order to succeed in your career?
Emotional Intelligence: Embedding Soft Skills Within the Curriculum

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This study addressed the ongoing challenge of embedding soft skills within the curriculum in Higher Education by employing an assessed task that included Personal Development Planning (PDP). The study’s objectives were to enable undergraduates to interpret their self-report scores on psychometric tests and to use these as a focal point for writing personal evaluations related to PDP. The task was also designed to facilitate self-awareness, to empower students with enhanced competence in self-presentation and to ascertain if Emotional Intelligence (EI) scores were positively orientated. Moreover, the study was designed to test if the stability, consistency and variability in the data would support the continued use of the EI measures to provide a framework for assessing soft skills within the curriculum. Methodology: three cohorts of level two Psychology undergraduates (N = 569) completed three validated EI measures and the Five Factor Model (FFM) of personality. Students wrote 2-400 word personal evaluations with reference to PDP. Scope of the findings: the EI measures proved used for adaptation to embedding soft skills as there were strong individual differences in response dispersion, and mean scores were nested in the positive parameters of all three scales. Correlation and Multiple Regression analyses demonstrated that EI is sufficiently independent of FFM to warrant its continued use in HE research and practice. Students’ written reports demonstrated that they had become aware of the importance of intra and inter personal skills and that they had reflected competently and confidently on mapping their educational, career-related and personal development.

Keywords: Emotional Intelligence, Soft Skills, PDP, Curriculum

Introduction

Emotional Intelligence (EI) has been defined as , “The set of abilities, verbal and non-verbal, that enable a person to generate, recognise, express, understand, and evaluate their own, and others emotions in order to guide thinking and action that successfully cope with environmental demands and pressures” (Van Rooy & Viswesvaran, 2004, p. 72). Its popularity has been enhanced by its applied nature and its status in research has been signposted by the appearance of meta-analyses in various domains. For example its consistent and positive impact on health-related outcomes has been delineated by Schutte, Malouf, Thorsteinsson, Bhullar and Rooke (2007). EI has also been empirically applied in social and personal relationships (Smith, Ciarrochi, & Heaven, 2008), occupational settings (Quoidbach & Hanseene, 2009) and to the physical activity of Taiwanese college students (Li, Lu & Wang 2009) and meta analyses have been applied to EI in general (Van Rooy & Viswesvaran, 2004).

EI has been applied to the domain of Higher Education (HE) and the construct clearly possesses potential as a framework for embedding soft skills within the curriculum at secondary and tertiary levels. However some researchers have questioned its incremental validity in predicting academic performance (Newsome, Day, & Catano, 2000), and have argued that it may be redundant, being subsumed by personality (Davies, Stankov & Roberts, 1998). The Five Factor Model of personality is well established as a predictor of Grade Points Average (GPA), as shown in a meta analysis (Poropat, 2009), and the role of EI as a direct predictor of GPA is inconclusive at present (Chapman & Hayslip, 2005). Although a few studies have found a positive association (Lyons & Schneider, 2005; Extremera & Fernandez-Berrocal, 2005), the prediction of GPA should not be seen as the only
All participants were level two Psychology students at Liverpool John Moores University. Their findings suggested that students with lower EI were more likely to drop out of their study programme during their first year. Therefore studies on the role of EI predicting GPA might be biased if they failed to take drop out into account. Chamorro-Premuzic & Furnham (2003) suggested that the predictive validity of IQ was restricted by the limited range of IQ scores that would be found in a comparable cohort of undergraduates, and the same principle may be extrapolated to EI in predicting performance (i.e. students who persist in their studies are likely to be higher in EI than students who drop out).

From an evolutionary perspective, the cultivation of effective emotional competence has been seen as optimal to adaptation within a given environment (Hammond, 2005). Well developed emotional skills, used with the understanding of cultural affect displays (Pervin, 2003), can be designated as “emotional literacy”. In contrast, the inability to express personal emotions or to read emotional signals from others is described as “Alexithymia”, and a measure exists to diagnose this problem – the Toronto Alexithymia Scale (Bagby, Parker & Taylor, 1994). It is claimed that most university students drop out for non-academic reasons, including issues such as financial pressure or wrong choice of course. However, other non-academic reasons include homesickness and failure to integrate with other students in the early stages of study (Thompson, 1998). Therefore, the application of EI to fresher students is potentially a fruitful area of research and it has been found that EI is susceptible to training, learning and growth (Slaski & Cartwright, 2003). This factor renders EI more potentially useful than personality measures in the sense that personality is deemed to have a strong genetic predisposition (Pervin, 2003).

Within the literature EI is variously seen as an ability or a trait (Mayer, Roberts & Barsade, 2008) or a mixture of both (Bar-On, 2000). At an ability level, measures have been designed to assess this but the trait or mixed approach have proved more popular (Mayer, Roberts & Barsade, 2008), and therefore more validity and confidence in these measures has emerged. One prominent self-report measure (the Trait Meta Mood Scale) is based on the ability approach (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), but Bar-On’s measure is based on the mixed model of trait and ability (Bar-On, 2000). In the present study three validated self-report measures were included in order to provide a good spectrum of coverage of the EI construct. These were the Assessing Emotions Scale (AES), the Trait Emotional Intelligence Questionnaire (TEIQ) and the Trait Meta Mood Scale (TMMS). EI is now taken seriously as a construct at the psychometric level, with robust attempts to measure and fit structural and measurement models, although there is still contention over the precise nature and configuration of the construct (Mayer, Roberts & Barsade, 2008), although all good constructs evolve over time and the current burgeoning research on EI is testament to its empirical validity. In the present study, level 2 Psychology students completed three self-report measures on EI and each student wrote a personal evaluation of their scores with reference to their Personal Development Planning (PDP), within the context of personal, educational and career-related growth. This included not only self-assessment of ability and achievement, but also of the full range of soft skills related to the above three PDP aspects with reference to consolidating strengths and addressing challenges. The students wrote 2-400 word PDP reports (for EI and the Five Factor Model [FFM] of personality) as part of an assessed exercise (that also included a literature review on EI). The exercise thus provided both quantitative and qualitative dimensions within the study.

The overall aim of the study was to provide students with a framework for self-reflection and empowerment related to PDP, and researchers/academics with psychometric tools to monitor and challenge students’ growth. Objectives of the study included: 1. Empowering students with the ability to interpret a range of psychometric tests on EI and FFM with reference to their scores at scale, subscale and item levels. 2. Enabling students to identify their strengths and challenges and to set goals that would facilitate progress toward their chosen careers. 3. Familiarising the students with the empirical literature to facilitate awareness of and competence in self-presentation with reference to terminology. 4. Demonstrating the independence of EI and FFM from each other to show that EI may have a unique role in HE to complement the well established role of personality. 5. Ascertaining whether students in the sample are positive in their EI orientation and if there are strong individual differences within the sample. 6. Testing whether response patterns are replicated across three cohorts of students in order to establish the measures as reliable instruments to facilitate embedding soft skills within the curriculum.

**Method**

**Participants:** All participants were level two Psychology students at Liverpool John Moores University. There were three cohorts sampled over three successive years with sample sizes ranging from: Cohort 1 (n = 220, females = 187, males = 33); Cohort 2 (n = 159, females = 135, males = 24); Cohort 3 (n = 190, females = 150, males = 40). This gave a total sample size of N = 569, females = 472, males = 97. The average age for the
combined samples was 21 with a standard deviation of 4.74. The sampling was a convenience method and the exercise was part of an assessed component within the module which ensured full participation and engagement.

**Measures**

**Five Factor Model** (FFM, Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006)

The FFM measure used in this study contains 50 items, with 10 items for each of the five factors of personality: Openness to Experience (O), Conscientiousness (C), Extraversion (E), Agreeableness (A) and Emotional Stability (ES). The response format is set as 5-point Likert ranging from 1=strongly disagree to 5=strongly agree. In total 24 of the 50 items are reversed scored in order to counter the effects of response set. Typical items from each of the five above factors are: “I spend time reflecting on things” (O), “I am always prepared” (C), “I talk to a lot of different people at parties” (E), “I have a soft heart” (A) and “I worry about things” (ES).

**Trait Meta-Mood Scale** (TMMS, Salovey, Mayer, Goldman, Turvey & Palfai, 1995)

The shorter 30-item version of the scale was used in which participants rate their response to a 5-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Fourteen of the items are reversed scored to prevent response set and typical items are: “No matter how badly I feel, I try to think about pleasant things” and “I am rarely confused about how I feel”. The measure is based on the ability model of EI and higher scores reflect a higher perception of personal EI. Although the scale has three subscales (Attention, Clarity and Repair), the scale was treated as uni-dimensional for this study.

**Assessing Emotions Scale** (AES, Schutte, Malouff, Hall, Haggerty, Cooper, Golden & Dornheim, 1998).

This is a 33-item measure presented with the same Likert structure as in the previous measure and is based on the conceptualisation of EI as a trait. Three items are reversed scored, and examples of items are: “I know why my emotions change”, “I like to share my emotions with others” and “Emotions are one of the things that make my life worth living”. There are three subscales, but the measure is most frequently treated as uni-dimensional.

**Trait Emotional Intelligence Questionnaire** (TEIQ, Petrides & Furnham, 2006)

The TEIQ is a 30-item scale designed to assess individuals’ emotional self-efficacy or ability to identify and manage their own and others’ emotions. This scale is based on the theory of trait EI, and participants respond to a 7-point Likert-type format ranging from 1=strongly disagree to 7=strongly agree, with 15-items reversed scored. Some typical items examples are: “I can deal effectively with people”, “I generally don’t find life enjoyable” and “Expressing my emotions with words is not a problem for me”.

**Design** – The study was a cross-sectional, survey method which allowed comparison across three successive cohorts of students and therefore was mixed (within and between participants’ comparisons). Although the analyses were primarily quantitative, the researchers also examined the clustered qualitative themes related to education, career and personal development. Quantitatively, measures of central tendency and dispersion were examined to identify the response trends and individual differences in response patterns. Correlation analyses were used to ascertain the relationships between all the self-report measures. Multiple Regression analyses were performed to test commonality and independence between the personality and emotional intelligence measures.

**Procedure** – The study was first approved by the LJMU Psychology Ethics Committee and was then carried out in scheduled seminars. Students were given both written and verbal directions for completing the self-report measures with no time limit on the exercise, but most students completed within thirty minutes. Participants were required to complete the exercise as part of their assignment for a level 2 module (Differential Psychology). After they had responded to all items, they transferred their scores to a code sheet which was collected by the researchers for input to an SPSS file and subsequent data analysis. The students retained their original booklets and were guiding in scoring their self-reported responses. Following this they wrote a 400-word self-evaluation related to the FFM, and a 400-word evaluation related to the three EI measures within the context of Personal Development Planning (educational, personal and career-related). They were also required to write a 1,200 word critical literature review based on EI and FFM. The full assignment was submitted about two months after the seminar and the mean module grade was typically higher than for most other modules at level 2 (and with a higher percentage of first class marks), suggesting that students were motivated and engaged for the task.
Results

Table 1. Self-report measures of central tendency and dispersion for three Psychology undergraduate cohorts.

<table>
<thead>
<tr>
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<th>AES</th>
<th>TEIQ</th>
<th>TMMS</th>
<th>O</th>
<th>C</th>
<th>E</th>
<th>A</th>
<th>ES</th>
</tr>
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<tbody>
<tr>
<td>Mean (1)</td>
<td>122.02</td>
<td>144.06</td>
<td>108.51</td>
<td>35.96</td>
<td>33.24</td>
<td>35.21</td>
<td>41.52</td>
<td>28.44</td>
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<td>Mean (2)</td>
<td>123.27</td>
<td>149.31</td>
<td>111.85</td>
<td>36.45</td>
<td>32.45</td>
<td>35.99</td>
<td>42.10</td>
<td>30.10</td>
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<td>Mean (3)</td>
<td>121.57</td>
<td>146.21</td>
<td>109.52</td>
<td>35.14</td>
<td>32.40</td>
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<td>7.66</td>
<td>5.05</td>
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<td>SD (2)</td>
<td>10.33</td>
<td>18.30</td>
<td>12.94</td>
<td>5.06</td>
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<td>7.19</td>
<td>4.52</td>
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<td>12.72</td>
<td>20.75</td>
<td>13.66</td>
<td>6.21</td>
<td>8.10</td>
<td>7.64</td>
<td>5.33</td>
<td>8.45</td>
</tr>
</tbody>
</table>


The results presented in table 1 are for three cohorts of Psychology students over three successive years. In terms of the three EI measures, it is observable that there is minimal difference in the mean scores across each cohort (especially with reference to the large number of items in each scale – see Method). The range of means is 121-123 on the AES, 144-149 on TEIQ and 108-112 on TMMS. All three mean scores are nested within the positive parameters of the scales with each above the scale midpoints: 99, 120 and 90 for AES, TEIQ and TMMS respectively, and this fulfills Objective 5. Moreover, in relation to Objective 5, the standard deviations demonstrate a good dispersion of scores on all three measures, indicating strong individual differences for each cohort across all measures, although the overall orientation of scores is toward self-reported positive perception. Like the mean scores, the standard deviation scores for the EI measures is comparable across cohorts with a range of 10-13 for AES, 18-22 for TEIQ and 13-14 for TMMS. The stability of the data across the three cohorts of students provides confidence in the measures given the similarities in response patterns indicated by means and standard deviations, thus fulfilling Objective 6. Moreover, the data are reliable with all Cronbach’s Alphas ( > 0.75), and skewness and kurtosis values well below the criterion cut off point (< 1.96), suggesting normality of distribution. In addition to confidence in the stability and consistency of the data, there is confidence in the continued use of these psychometric tools as a focal point for the assessment of soft skills. Although the five personality factors are not the primary focus of the present study, it can be seen from the table that responses to these exhibit similar consistency as was noted with the EI measure. The quality of the data suggests that students have been empowered to interpret the tests judiciously and systematically (Objective 1), and the spread of scores demonstrate that each student has located their response on a spectrum across each of the scales reflecting personal awareness of strengths and challenges (Objective 2).

Table 2. Correlation coefficients for the self-report measures average across cohorts.

<table>
<thead>
<tr>
<th></th>
<th>AES</th>
<th>TEIQ</th>
<th>TMMS</th>
<th>O</th>
<th>C</th>
<th>E</th>
<th>A</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES</td>
<td>1</td>
<td>.47**</td>
<td>.50**</td>
<td>.39**</td>
<td>.26**</td>
<td>.27**</td>
<td>.42**</td>
<td>.30**</td>
</tr>
<tr>
<td>TEIQ</td>
<td>1</td>
<td>.65**</td>
<td>.36**</td>
<td>.26**</td>
<td>.41**</td>
<td>.35**</td>
<td>.54**</td>
<td></td>
</tr>
<tr>
<td>TMMS</td>
<td>1</td>
<td>.29**</td>
<td>.13</td>
<td>.22**</td>
<td>.37**</td>
<td>.30**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The three correlations for the three EI measures are presented at the top left of the matrix and these are positive, moderate to strong and in the expected direction. Correlations display similarity in rank order and these results indicate that students who report high EI on one measure report similarly high responses on the other two. On the FFM (middle to bottom right of the matrix), correlations between the five factors are weak and frequently non-significant as is expected for five independent dimensions. Finally the cluster of correlations between the EI and FFM measures (middle to top right) show weak to moderate statistically significant associations as might be expected, given that personality factors contain emotional along with behavioural and cognitive content. However, given that the associations are not high, this indicates that although EI and FFM overlap, they also have considerable independence. A multiple regression analysis showed that the FFM accounted for 52%, 26% and 28% of the variance on TEIQ, AES and TMMS respectively – thus demonstrating substantial residual variance on EI that is not explained by personality. Results were similar across all measures and this suggests that EI has unique components that personality does not tap and that may make EI a useful complement to the FFM in HE research, thus fulfilling Objective 4. Objective 3 is related to the students familiarizing themselves with the integration of the empirical literature with awareness of and competence in self-presentation with appropriate use of terminology. This is not presented in these quantitative results but was fulfilled during students’ engagement with and preparation for the assignment, and was evidenced in their written work.

Discussion

A major advantage of this exercise was to familiarise students with a full range of soft skills related to EI, and these included factors such as conflict resolution, anger management, stress control, team work, social and communication skills, impulse control, adaptability and resilience (Mayer, Roberts & Barsade, 2008). Through the literature, students were introduced to the terminology of EI and soft skills, and were thus aided in both developing and presenting their intra and inter personal skills. Also by rating themselves on individual item content (there were 93 items in the three EI measures), students learn to envisage scenarios from their personal history that enhances self-awareness. Competent self-presentation is a major advantage in CV and interview presentation (Yorke & Knight, 2006; Lantz, 2008). From the standpoint of assessment, the exercise was useful as a two-edged sword. First, students were provided with a solid conceptual framework for retrospective reflective on their personal development, and to plot growth trajectories prospectively. Participants were encouraged to identify strengths and challenges before the exercise began. Second, the written exercise was assessed by tutors who provided formative, diagnostic and summative feedback as inculcated by HE philosophy (Ramsden, 1992). Therefore the exercise provided an optimal opportunity to write soft skills into assessed learning outcomes. Although the task was set for level 2 undergraduate students, it be could be spread over the programme to levels 1 and 3 to consolidate learning and facilitate progress incrementally. In addition the learning activity provides scope for the intrinsic motivation in learning inculcated by Bandura and Dweck (1985), as students are likely to be interested in their personal growth as a topic.

At a more general level, the use of psychometrically validated measures, with a construct (EI) that is now widely accepted in the empirical literature (Mayer, Roberts & Barsade, 2008), embeds the learning activity within a solid theoretical framework. In addition, the research is a good functional fit with current research in HE. As noted, although the role of EI in predicting GPA is somewhat inconclusive (Chapman, & Hayslip, 2005), it has been found to be associated with retention (Parker, Hogan, Eastabrook, Oke, and Wood, 2006). Moreover, EI has also been associated with higher life satisfaction, problem-solving, coping and lower levels of anxiety, qualities that
have been shown to have a positive impact upon course satisfaction and performance (Bastian, Burns & Nettelbeck, 2005). In the present study, all students were at level 2 in their study programme and the mean scores were firmly nested in the positive parameters of the three EI scales. Although it is speculative, it is possible that students with low EI had already dropped out at an earlier stage of the programme. A future study could assess students with these measures shortly after their induction, and could address the challenge of remediating this problem at an early stage, especially given that EI is malleable to change (Slaski & Cartwright, 2003). The present study suggests ways of weaving the assessment of soft skills into the curriculum and this can be accompanied by learning activities that facilitate acquisition of such skills. Moreover, the fact that the task was assessed facilitated students’ full engagement.

Summary and conclusion: Objectives and Aim of the study

In summary and conclusion, students were clearly enhanced in their self-awareness and empowered to express themselves with confidence and competence in relation to desirable intra and inter personal soft skills. In addition they were equipped with the ability to interpret their own psychometric test scores and to discuss their strengths and challenges within this framework. Their exposure to the EI literature also demonstrated to them the usefulness of EI and how it could be developed and applied in their personal experience. At the wider level, the tutors have demonstrated that the various measures of EI used in the study are reliable and valid and thus form a good basis in the continued quest to embed soft skills within the curriculum. Given that the exercise is an assessed task, the tutors have found a way to engage students fully in self-awareness, self-reflection, self-evaluation and self-presentation. Also, cohorts two and three in the study found it useful to refer back to the norms in the previous study as this gave them a baseline with which to compare their own scores. Finally, the data demonstrates that EI shows substantial independence in relation to personality and this suggests that it may form a very useful complement to personality in educational research. So although the role of EI may be inconclusive in terms of predicting GPA directly (Chapman, & Hayslip, 2005), it does have an important role in retention (Parker et al., 2006), and in issues related to adjustment, adaptation, employability, self-regulation and self-presentation.

References


The Impact of Learning Styles and Alternative Instructional Approach on Students’ Programming Performance: A Pilot Study

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Learning styles are the preferred mode in which learners respond to and use stimuli in the context of learning. It is a constant manner that the learners focus on different types of information, perceive it in different ways and gain understanding at different rate. However, instructors are commonly assuming that learning styles of learners are compatible with their teaching style. As such, these style differences should be the focus when applying the instructional strategies in computing education system. In this pilot study, the effectiveness of incorporating metaphors and pair programming into the course delivery of fundamental of programming concepts on the recall and retention of students with different learning styles was studied. A group of 46 first year computing students was involved in this study. The students were paired according to their learning styles preference – one visual and one verbal. This study applied (i) the combination of metaphors and pair programming as an independent variable, (ii) the student’s recall and retention as the dependent variables, and (iii) the students’ learning style as the moderating variable.

The initial results revealed that the verbal students performed significantly better than the visual students in the retention test. However, there was no significant difference in the recall performance between the two groups of students. The combination of metaphors and pair programming promotes (a) linking of existing knowledge to newly acquired concepts and (b) effective and joyful learning from peers’ discussion. These benefits enhanced students’ learning and strengthened their coding practices especially to verbal students in developing and encouraging long term memory retention. The metaphors with pair programming instructional method significantly assist both visual and verbal students to develop mental images in reasoning, make learning a more engaging and interactive. As such the lecturers should incorporate the visual and verbal modalities representation in their teaching in order to reinforce learning for all students with different learning styles abilities.

Keywords: Metaphors, Pair Programming, Learning Styles, Computer Programming

Introduction

Computer programming is defined as instructing a computer what to perform through a set of instructions. These instructions are based on concepts rather than on any programming languages (Roy & Haridi, 2003). To first year computing students, these concepts are difficult to understand. As programming requires complex cognitive skills which include planning, problem solving, logical reasoning and critical thinking in the process of learning programming, computing students are facing difficulties to acquire these skills (Miliszewska & Tan, 2007; Duncan, 2002; Soloway, 2003; McGill & Volet, 1997). These are the essential skills needed in attending programming courses.

In many instances, students find programming concepts too abstract to understand and in turn the difficulties in developing and applying the needed skills when solving programming problems. Acquiring the basic programming concepts is crucial as the preparation for the subsequent advance computing courses and essentially substantial in programming industries.
Metaphor has been described as a real world system in which students are able to apply as a reference for linking existing knowledge to the newly introduced concepts. It is a figure of speech including an implicit association of words and phases mostly and usually applied and are related to another (Parker, 2009; Robert, 2005). The metaphor, a high level concept is significant to assist the formation of interpretation and application of knowledge from the basic programming concepts learned. It expresses in either visual or textual presentation in relating the abstract nature of the programming tasks to the basic programming concepts. The empirical evidence demonstrated that metaphors are effective tools for understanding and learning the abstract concepts of programming by identifying anomalies between students’ existing knowledge and new information presented in solving programming scenario (Stutzle & Saajaniemi, 2005; McKay, 2004).

Pair programming is a structural and systematic form of programming cooperation where programmers work together in groups to complete the assigned tasks (Chung & Lo, 2006; Beck, 2000). Research studies indicated that students perform better in terms of producing higher quality of codes, increasing retention rates, problem solving skills, self satisfaction and improved attitude towards programming when working in pairs (Bruce & McMahon, 2002; Bevan, Werner & McDowell, 2002).

Learning style is generally described as cognitive style or learning preference of individual in organizing and presenting information towards learning process (Ladd & Ruby, 1999; Riding & Rayner, 1998). Researchers have revealed that preferred learning styles shape students own approach in learning, strongly influence their academic progress and affect their programming performance when they approach a learning task (Pallapu, 2007; Thomas, Ratcliff, Woodbury & Jarman, 2002; Rayner & Riding, 1997; Claxton & Murrell, 1987). Thus, students incline to have longer retention on information, more positive attitudes towards the course and better understanding of topics when the materials presented match their learning styles.

In other words, educators need to consider the individual student’s learning style when metaphor and pair programming strategies are applied, which in turn will help them develop better mental images and problem solving skills in programming education. These will further enhance their programming performance and create interest in higher programming courses.

Learning Styles Preference

A learning style, perceived as learning preference or cognitive style, is the characteristic behaviours, strengths and preferences of a student in the ways he/she acquires and processes information (Gomes, Santos, Carmon & Mendes, 2007; Felder, 1996). In educational psychology, styles have been classified and acknowledged as the prime construct that indicates how individual learner differentiates self in the context of learning. Riding and Rayner (1998) state that this key construct comprises of the individual (i) affect – mood and feeling, (ii) behaviour – doing things and activities, and (iii) cognitive – thinking and knowing, which describe his or her differences in attaining knowledge. As such, every student has distinguished his or her preference style in the way the information is systematically and habitually responded to and worked on.

As for Keefe (1979), learning style “is the cognitive characteristics, affective and psychological behaviours that serve as relatively stable indicators of how learners perceive, interact with and respond to the learning environment”. These stable indicators somehow are predictable; however with variation, they may change from one subject or learning environment to another as one ages (Price, 2004; Ayersman, 1993). Numerous models of learning styles have been suggested with the intention to classify and characterize how students perceive and process new information. Felder-Silverman (1988) and Kolb (1984) are amongst the well recognised models proposed. Researchers have shown that students consistently achieve better results when the presented materials match their learning style (Riding, Buckle, Thompson & Hagger, 1989; Riding & Dyer, 1983).

The Felder-Silverman Model

This study emphasized on the use of the Felder-Silverman model as it is relevant to science education. The model (Table 1), classifies students into five basic categories: (i) Active/Reflective, (ii) Sensory/Intuitive, (iii) Visual/Verbal, (iv) Sequential/Global and (v) Inductive/Deductive. The sensory/intuitive and visual/verbal dimensions are part of the perceiving continuum, while the active/reflective and sequential/global are related to the mechanisms of processing (transforming) information during learning transaction.
<table>
<thead>
<tr>
<th>No</th>
<th>Different Dimension of Learning Style</th>
<th>Components in Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Active – Reflective student</td>
<td>Active Student:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• retains and understands information best by doing something active while discussing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• applying it or explaining it to others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• trying it out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• seeing how it works</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• tending to like group work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• taking notes when studying</td>
</tr>
<tr>
<td></td>
<td>Reflective Student:</td>
<td>• thinks about it quietly first</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• thinks it through first</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Prefers working alone.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sits through class without getting to do anything</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• memorizes the material</td>
</tr>
<tr>
<td>2</td>
<td>Sensing – Intuitive student</td>
<td>Sensing student:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• tends to like learning facts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• likes solving problems by well-established methods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• resents being tested on material that has not been explicitly covered in class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• tends to be patient with details</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• good in doing hands-on (laboratory) work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• more practical and careful</td>
</tr>
<tr>
<td></td>
<td>Intuitive Student:</td>
<td>• prefers discovering possibilities and relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• likes innovation and dislikes repetition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• does not resent being tested on material that has not been explicitly covered in class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• better at grasping new concepts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• comfortable with abstractions and mathematical formulations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• tends to work faster and to be more innovative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• likes courses that involve a lot of memorization and routine calculations.</td>
</tr>
<tr>
<td>3</td>
<td>Visual – Verbal student</td>
<td>Visual Student:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• remembers best what he sees e.g. pictures, diagrams, flow charts, time lines, films, and demonstrations</td>
</tr>
<tr>
<td></td>
<td>Verbal student</td>
<td>• more out of words, written and spoken explanations</td>
</tr>
<tr>
<td>4</td>
<td>Sequential – Global student</td>
<td>Sequential student:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• gains understanding in linear steps, with each step following logically from the previous one</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• follows logical stepwise paths in finding solutions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• solves complex problems quickly</td>
</tr>
<tr>
<td></td>
<td>Global student:</td>
<td>• learns in larger scope, absorbing materials almost randomly without seeing connections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• has difficulty explaining how they did it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• tries to come out with something new</td>
</tr>
<tr>
<td>5</td>
<td>Inductive – Deductive student</td>
<td>Inductive student:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• prefer information presented from very specific to generalities, such as theories, rules and laws</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• reasoning well through observations, measurements and data by forming the infer or correlation with the principles</td>
</tr>
<tr>
<td></td>
<td>Deductive student:</td>
<td>• tends to like presentations which proceed from generalities to the specific</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• starts with axioms, principles or rules, deduce consequences and formulate applications</td>
</tr>
</tbody>
</table>
The Felder-Soloman’s Index of Learning Styles Questionnaire (ILSQ) corresponding to the psychometric assessment consists of 44 questions. However, the Inductive/Deductive dimension in the Felder-Silverman model is not included in the ILSQ measurement.

Research Questions

This study proposes the application of integrating metaphor with pair programming to teach the basic programming concepts to improve students’ performance in programming skill. The effects of visualisation and cooperation elements integrated in the classroom teaching through the use of program flowchart and Pseudocode on students’ recall and retention performance are investigated with learning style as the moderating variable.

The programming performance scores are analyzed and responded to the following two primary research questions.

1. Is there any significant difference in terms of recall between visual and verbal students taught in a combination of Metaphor and Pair Programming instructional method?
2. Is there any significant difference in terms of retention between visual and verbal students taught in a combination of Metaphor and Pair Programming instructional method?

Research Methodology

The purpose of this study is to examine the effectiveness of integrating metaphor with pair programming (MPP) method of instruction on the recall and retention of computing students with visual–verbal learning style dimension. In other words, the authors would like to investigate whether metaphors as visualisation technique and pair programming as cooperative learning in classroom can be moderated by the factors of learning styles. Compared to the traditional approach which only involves individual learning with a possibility of teaching and learning style mismatch, the combination of pair programming and metaphor as an instructional strategy may assist the delivery of instruction.

Research Design

This quasi-experimental design was used to examine the effects of combining metaphor with pair programming on the two dependent variables (recall and retention) with learning styles (visual and verbal) being the moderating variables. The immediate and delayed posttest scores obtained from the Computer Programming Performance Test (CPPT) was used to measure the students’ recall and retention programming performance immediately and a month later after the treatment.

A group of first year undergraduate computing students enrolled in a private college in Penang, Malaysia was selected for this pilot study. This intact group with a total of 46 students was randomly selected from the first semester of their computing program and assigned to receive the MPP treatment.

Research Instruments

The Course Material

Table 2 indicates the topic imparted to the students during the seven week treatment. In addition to these topics, the problem solving analysis using conventional technique (Pseudocode and program flowchart) via metaphors with pair programming, data types, variables declaration, arithmetic expression, sequence and selection control constructs are covered.

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Hours</th>
<th>Topics and Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>• Introduction to basic computer programming concepts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Introduction to instructional method (metaphors)</td>
</tr>
<tr>
<td>2 – 3</td>
<td>6</td>
<td>• Problem solving analysis using conventional technique (Pseudocode and program flowchart) via Metaphors with Pair Programming</td>
</tr>
</tbody>
</table>
The Felder-Soloman’s Index of Learning Styles Questionnaire (ILSQ)

This instrument formulated based on the Felder and Silverman’s (1988) learning styles model was used to access the students’ learning style preference prior to the treatment. Although the ILSQ consists of four learning style dimensions, only one dimension measuring the visual and verbal learning style is used in this study. The Cronbach’s Coefficient alpha for this dimension is 0.78 (Zywno, 2003). This instrument uses a multiple choice format in presenting options. The students who responded mostly ‘a’ in the questionnaire were classified as visual learners and those who respond mostly ‘b’ were identified as verbal learners.

The Computer Programming Performance Test (CPPT)

The CPPT is an instrument consists of: (i) a pre-test to measure the students’ programming knowledge before the treatment, (ii) an immediate post-test to measure the students’ recall, and is administered immediately after the treatment, and (iii) a delayed post-test to measure the students’ retention, is conducted one month after the treatment. All tests are designed to examine the students’ performance on both the theory and practical knowledge of the Sequence and Selection Programming Constructs topic.

These tests contain 10 items in section A and 5 items in section B; each focusing on writing segment of or a complete program with the use of either Pseudocode, program flowchart or both. The formation of test questions is based on the McGill and Volet’s (1997) programming conceptual framework to ensure adequate coverage of the assessment area and different levels of the programming knowledge and skills required.

Data Collection Procedure

The experiment was conducted for seven weeks to one intact class randomly selected from the college’s computing program. The ILSQ questionnaire was administered to this group prior to the treatment in order to categorize the students as visual or verbal learners. Then, these students sat for the pre-test to collect baseline data on their programming knowledge prior to the treatment.

During the treatment, both groups of students with different learning style received program flowchart and Pseudocode with the application of Metaphor with Pair Programming instructional strategy in learning the fundamental programming concepts. A metaphor was introduced and applied to explain the programming concepts in each week of the seven week treatment. The students worked in pairs with each member of the pair randomly assigned with either the role of navigator or as driver. These roles were explained to each member of the pair. Both members had to persistently work on the same programming problem by applying the metaphor in the given scenarios during the weekly tutorial class. For each pair, the roles (driver and navigator) are swapped periodically between both members.

In week 8, the students sat for their immediate posttest immediately after the treatment and followed by the delayed posttest a month later. This CPPT instrument was used to assess the students’ comprehension of programming concepts on recall and retention performance.

Research Findings

The quantitative data collected to corroborate the research hypotheses were analysed using the SPSS 17.0 for windows. The MANCOVA statistical technique was applied to analyse the scores collected from the CPPT (pretest, immediate posttest and delayed posttest) in order to determine any significant difference between
students with different learning styles on their two dependent variables (recall and retention). In this case, the pretest score was used as the covariate.

The results of the analysis are indicated in Table 3 and Table 4. Table 3 shows the MANCOVA findings, while Table 4 shows the descriptive analysis.

### Table 3: MANCOVA for the recall and retention scores between the visual and verbal students

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall (immediate post-test)</td>
<td>1</td>
<td>22.96</td>
<td>0.70</td>
<td>0.41</td>
</tr>
<tr>
<td>Retention (delayed post-test)</td>
<td>1</td>
<td>285.01</td>
<td>6.71</td>
<td>0.01*</td>
</tr>
</tbody>
</table>

*significant at 0.05 level

### Table 4: Descriptive statistics of the immediate and delayed post-test scores between the visual and verbal students

<table>
<thead>
<tr>
<th></th>
<th>Students</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate Post-test (recall)</td>
<td>Visual</td>
<td>23</td>
<td>34.67</td>
<td>6.44</td>
</tr>
<tr>
<td></td>
<td>Verbal</td>
<td>23</td>
<td>36.09</td>
<td>6.24</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>46</td>
<td>35.38</td>
<td>6.31</td>
</tr>
<tr>
<td>Delayed post-test (retention)</td>
<td>Visual</td>
<td>23</td>
<td>26.41</td>
<td>7.04</td>
</tr>
<tr>
<td></td>
<td>Verbal</td>
<td>23</td>
<td>31.39</td>
<td>7.18</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>46</td>
<td>28.90</td>
<td>7.47</td>
</tr>
</tbody>
</table>

**Hypothesis 1:** There is no significant difference in terms of recall between the visual and the verbal students

Based on the MANCOVA analysis as shown in Table 3, it was found that **there is no significant difference in the recall performance** between the visual and the verbal students (F: 0.70; p: 0.41). The mean difference in recall for visual students (Mrec-vis: 34.67) and verbal students (Mrec-ver: 36.09) in Table 4 indicated that the verbal students performed slightly better than did the visual students. Thus, this finding has accepted the first hypothesis.

**Hypothesis 2:** There is no significant difference in terms of retention between the visual and the verbal students

Based on the MANCOVA analysis in Table 3, it was found that **there is a significant difference in retention between visual and verbal students** (F: 6.71; p: 0.01). Therefore, this finding has rejected the second hypothesis. The descriptive statistics revealed that the verbal students scored significantly better in retention test than did the visual students (mean for visual: 26.41; mean for verbal: 31.39).

**Discussion**

The study aims to investigate whether individual learning style preference of the students influences the effects of metaphor with pair programming instructional method on their programming performance in terms of recall and retention. The program flowchart and Pseudocode are used in explaining the basic programming concepts to the students, which are later used in solving programming questions. The research findings indicate that verbal students performed significantly better than visual students in the retention test.

However, there is no significant difference between two groups (visual and verbal) in the recall performance. In other words, both the visual and verbal groups of students performed equally well in the recall test. Regardless of their learning style, metaphor enhances students’ understanding of the basic programming concepts as it builds new concepts from the existing knowledge; and subsequently develops clearer “mental images” of the novel concepts in solving abstract scenario. By connecting concrete images with text information, it improves and increase students’ recall regardless of their learning styles. In particular, most classroom deliveries are oriented towards verbal students in the form of oral lectures and written text either on the board or in lecture notes (Layman, Cornwell, Williams & Osborne, 2007; Felder & Silverman, 1988). Perhaps, in the first year computing courses, the computer science curriculum is designed to emphasize mainly on learning the basic programming language constructs such as the syntax, semantics and pragmatics. Whereas, visual students learn better when information is presented in diagrammatical, charter and pictorial forms. However, effective learning...
still occurs for visual students when their learning style preference did not match the lecturer’s teaching style (Miller, 2005; Shivers, Nowlin & Lanouette, 2002).

This finding also reveals significant difference in students’ retention performance. The use of metaphor as an instructional strategy helps students in understanding and linking new concepts to knowledge that the students already possess which in turn promote positive influence on memory retention. In specific, verbal students were taught in auditory (lecturing) form where the visual presentation of auditory information is organized into simple understandable chunks that enable the verbal students to form “images” of new concepts which help them to retain newly acquired knowledge much longer as compared to the visual students. When auditory information is presented, visual students probably have forgotten as their preferred style is in graphical manners – pictures, diagrams and charts. Verbal students remember better when they hear and then say. Therefore, pair programming approach which emphasizes on discussion assists these students effectively by explaining things to their partners; which in turn promote meaningful learning and improve retention as compared to visual students (McDowell, Brian & Linda, 2003; Bevan et al., 2002; McKay, 1999). Likewise, this finding demonstrated that mismatching learning style with instructional method (combination of metaphor and pair programming) over extended period of time has affected the students programming comprehension and performance (Fenrich, 2006; Felder, 2002; Smith & Renzulli, 1984).

Conclusion

The study has emphasized the importance of lecturers in addressing learning styles when designing their lesson materials and in course deliveries. Most courses conducted in classrooms are predominantly auditory or visual presentation of auditory information which is against visual students. Thus, the disparity between the learning and teaching styles of students and lecturers may influence the overall students’ programming performance and achievement; and subsequently affecting their attitudes towards programming.

Pair programming as cooperative strategy has been used to improve verbal students’ programming knowledge and skills and enhance their performance. Both visual and verbal modalities representation need to be used during course deliveries in order to reinforce learning for all students with different learning styles which in turn will positively impact their retention. This finding suggests that such combination is to be incorporated in computer programming classes.

References


Fostering Cultural Awareness in Pre-Service Teacher Education: An Experiment in Asia Literacy Capacity Building in an Australian University

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This paper presents the findings of a small pilot study conducted with a group of final year pre-service teachers studying a secondary social science curriculum method unit in an Australian university. One of the study’s research objectives aimed at identifying how students responded to efforts to embed intercultural understanding through Studies of Asia in their final curriculum method unit. The unit was designed and taught by the researcher on the assumption that beginning social science teachers need to be empowered with pedagogical skills and new dispositions to deal with value laden emerging regional and global concerns in their Australian secondary school classrooms. This pilot study’s research methodology was located within the qualitative framework of a participatory action research model whereby the lecturer who designed, coordinated and taught the unit was also the researcher. Its scope was limited to one semester with volunteer students. The pilot study sought to investigate responses to several issues, and this paper reports on pre-service teacher reflections on the content, pedagogy and learning they experienced in their weekly sessions with specific reference to cultural understanding, Studies of Asia and the development of Asia literacy. It also reports on pre-service teacher reflections about their own evolving capacity as beginning teachers. The findings indicate that pre-service teachers valued the opportunity to engage with learning experiences which enhanced their conceptual understandings about culture whilst also extending their pedagogical and content knowledge.

Keywords: Pre-service teacher education, Asia literacy, cultural understanding, social science curriculum

Introduction

This paper explores an experiment in capacity building in a university pre-service teacher education unit in Australia. In particular, it reflects on efforts to embed intercultural understanding and Studies of Asia in a final year secondary social science curriculum method unit. This unit was designed and taught by the researcher on the understanding that when pre-service teachers engage in dynamic and interactive learning experiences in their curriculum unit, they commence the process of ‘capacity building’ those skills which prepare them for their own lifelong professional learning. This approach to fostering Asia literacy also aimed at providing pre-service teachers with opportunities to engage with ‘the core ideas and broad understanding of teaching and learning that give them traction on their later development’ (Bransford, Darling-Hammond, & LePage, 2005, p. 3). Central to this approach to foregrounding praxis were two assumptions. First, given the challenges of an increasingly complex and interconnected world, young Australians require the capacity to develop cultural awareness and competency so they can navigate the cultural diversity they will encounter within Australia and throughout the region, as Australia embraces an international future. Second, was the belief in the power of pedagogy to make a difference in enhancing student participation and learning.

The paper is structured as follows. First, it situates the development of Asia literacy as an emerging curriculum priority in Australia. Second it provides a rationale for the particular approach to Asia literacy utilised in this unit within the broader context of the nation’s domestic and international context. Third, the paper presents the findings of a small pilot study which investigated the ways in which a cohort of final year pre-service teachers responded to this approach.
The development of Asia literacy as an emerging curriculum priority in Australia

Many nations are embracing an international future and some have high proportions of citizens who can operate comfortably in cultures other than their own. Such cultural self-awareness is a necessary asset for operating in the regional and global realm across many cultures. Knowledge of the cultures, histories, societies of the people in other cultures, provides new insights and a different way of seeing the world. As the Australian educator, David Dufty observed ‘we are all conditioned by our culture, that we tend to judge other cultures by our own standards and that to be culturally mature we need to be able to understand and appreciate at least one other culture in some depth and to be able to imagine with some accuracy how others view their world: in other words, to develop an intercultural perspective - to try seeing it their way as well as our own way’ (Dufty et al., 1973, p. 2). The realization that there are other ways of seeing the world also provides opportunities to understand better the way individuals look at the world and react to it.

In charting a vision for what education might achieve for young Australians, the most recent declaration on the national goals for schooling in Australia, The Melbourne Declaration, contends that ‘successful learners, confident individuals and active and informed citizens’ (MCEETYA, 2008, p. 7) will need to engage with a range of world views. With reference to global integration and increasing international mobility, the Declaration stressed ‘the need to nurture an appreciation of and respect for social, cultural and religious diversity, and a sense of global citizenship’ and that ‘Australians need to become ‘Asia literate’, engaging and building strong relationships with Asia’ (ibid, p.3). This sets a new agenda for the Australian education system, and one that is long overdue. For although there has been a significant push for Asia literacy in the Australian education system, notably through the work of the Asia Education Foundation, the need for Asia literacy has been identified in significant policy documents such as the Council of Australian Governments (COAG) commissioned report, Asian Languages and Australia’s Economic Future (Rudd, 1994) and its implementation in National Asian Languages and Cultures in Australian Schools Strategy (NALSAS) (see Henderson, 1999, 2003, 2008), its identification in the Melbourne Declaration marks the first occasion that Asia literacy has been incorporated in a statement on the national goal for schooling. Moreover, in the same year the Melbourne Declaration was released, the current Prime Minister, Kevin Rudd, re-emphasised another aspect of his government’s nation building agenda, together with his long-held ambition for Australians to be Asia-literate (Henderson, 2008), in the Singapore lecture of 12 August. In this address, Rudd (2008) put on the public record his commitment to making Australia ‘the most Asia-literate country in the collective West’.

This paper argues that Asia literacy, the capacity to understand and engage with at least one culture in the Asian region, has been neglected in the Australian education system. Hence, the Melbourne Declaration’s attention to Asia literacy in December 2008 has reignited the potential for the study of Asia and the cultures of the region to receive more emphasis in the Australian education system.

The broader context for Asia literacy and pre-service teacher education

This paper argues that there are two broad contextual factors that underpin the importance of cultural understanding and Asia literacy for pre-service teacher education. These factors relate to immigration’s role in Australia’s evolving population mix, and to Australia’s engagement with the region and are elaborated as follows. First, Australia is distinct from societies which evolved over the centuries. Australia is a multicultural immigrant society created by public policy and direct state action over a period of two hundred years. It is now a diverse society, and, in terms of the classrooms beginning teachers will encounter, by ‘2015 just on half of all school children will be either born overseas, or have a parent born overseas’ (Jakubowicz, 2009, p.1). However, it can be argued that many pre-service teachers are not only under prepared for teaching about cultural issues but are also unfamiliar with the range of culture and ethnicities they could encounter in Australian classrooms. According to Babacan (2007, p.152), ‘large numbers of teacher education students have limited experience of diverse educational settings, having mainly attended white middle-class schools as students and student teachers’. Moreover, the findings from a study of how student teachers understand their own ethnicity and social class and the ways in which they addressed the needs of students who were ethnically different to them, emphasised the need for teachers to consider their students’ cultural context and ethnicity when planning their curriculum approaches and what they teach (Santoro & Allard, 2005).

Second, as the Asian Studies Association of Australia observed, ‘the forces of globalisation will lead Australia to interact increasingly with the countries of Asia’ (ASAA, 2002, p. 4). Yet until recently, the study of Asia has been an elective for many pre-service and practising teachers, and it could be argued that Australian students and teachers know less about the Asian region and its cultures than other parts of the world. One of the legacies of this Eurocentric, or Anglocentric, focus in the Australian curriculum has been its impact on the teaching
profession. Many teachers who graduated under this system, do not have the skills to utilise cultural frameworks as conceptual tools to investigate past and present issues that have a cultural component. Furthermore, they do not have a substantial knowledge ‘component’ from the sustained study of Australia’s immigration and multicultural history, and Asian studies, in their undergraduate degrees or in their pre-service teacher education. When provided with choice, it could be argued that busy teachers elect to work with what is familiar to them. And unless new options are well scaffolded, teachers will not change their accepted practice. Moreover, during the next decade, the teaching profession in Australia will be transformed as large numbers of teachers retire and new teachers enter the profession. Of course, these contextual and demographic challenges are not limited to Australia. According to Hargreaves (2003, p. 2), ‘(w)ere are living in a defining moment of educational history, when the world in which teachers do their work is changing profoundly, and the demographic composition of teaching is turning over dramatically.’

It is vital that beginning teachers are prepared to engage with cultural difference in the classroom. The classroom is a significant site for coming to terms, and dealing with, a range of world views and cultural differences so that ignorance, prejudice and fears associated with racial, ethnic, and religious diversity are dissipated through learning about, respecting and valuing difference. Although it is difficult to measure the ways in which education impacts on social cohesion (Heyneman & Todoric-Bebic, 2000), pre-service teacher education that embeds cultural understanding in curriculum units is one strategy for capacity building beginning teachers for the classroom. Hence, this paper argues that pre-service teachers need to engage with the concepts that assist them in an understanding of culture as a ‘referent’ and develop some knowledge and understanding about the rich cultural diversity of the Asian region. This view assumes that pre-service teachers might develop capacity building skills in their university courses which prepare them for the lifelong professional learning required as curriculum knowledge and telecommunication technologies evolve during their careers.

The social science curriculum method unit

The unit was designed and written by the researcher in response to a Faculty revision of unit offerings in 2005. Students studying to teach a social science subject in the senior school as one of their teaching ‘specialty’ subjects, were required to study this unit as their final social science curriculum method subject. In terms of nature of the approach to knowledge and its purpose, pre-service teachers engaged with Habermas’ (1968) theory of ‘knowledge-constitutive interests’. Although students worked with all three of the knowledge interests in this theory, the critical or emancipatory form of knowledge, which encourages students to develop the knowledge and skills to empower them for challenging accepted social conditions, was particularly relevant to the focus on the processes of critical inquiry-based learning as an essential pedagogical characteristic of the ‘adaptive expert’ (Bransford, Darling-Hammond, & LePage, 2005, p. 3) in the social sciences. Accordingly, many of the learning tasks engaged students in activities which centred on critical approaches. The unit was scheduled for ten consecutive weeks in the semester and designed so that fourth year students preparing to teach in secondary schools would encounter ‘first hand’ the experiential notion of knowledge (Dewey 1916/1966) through learning experiences that explored a value laden approach to the social sciences via specific case studies. To enhance this process, social science curriculum classes were structured as ‘lectorials’ of interactive three hourly sessions rather than the traditional one hour lecture and separate two hour tutorial. Lectorials were designed to engage pre-service teachers in a ‘social world’ (Vygotsky,1978) of interlocking, recursive learning experiences (Bruner, 1966) where they ‘unpacked’ the ‘content’ of the controversies within each case study and also ‘dissembled’ the pedagogical processes involved in these experiences. In this way the researcher sought to establish a particular evolving ‘learning community’ (Vygotsky, 1978) amongst the cohort of students studying it face-to-face (an online version of the unit was not offered to off campus students).

Thus during the weekly interactive sessions, in individual, pair and small group contexts, pre-service teachers participated in the actual learning experiences they, in turn, could devise for their own students as future teachers. As Darling-Hammond (2008, p. 1321) observed of teacher education programs ‘teachers need to not only to understand but also to do a wide variety of things, many of them simultaneously’. Accordingly, lectorial activities included the application of critical thinking skills to primary and secondary sources about the range of controversial issues involved in the case studies. Critical thinking was emphasised as a core social science skill, given that in any discussion of controversial issues, claims and assumptions need to be investigated and critiqued, with judgements based on a range of sources of evidence (Paul 1995).

Pre-service teachers were encouraged to consider the ways in which a range of teaching strategies and specific procedures could be useful in investigating such issues in the classroom by responding to various scenarios. Cooperative learning, as defined by Johnson and Johnson (1994), was employed for these scenarios through small group tasks, whilst the case studies selected aimed to provide opportunities for pre-service teachers to
develop an appreciation of the significance of understanding their own and other cultures and to develop intercultural awareness, through the examination of controversial issues. The pedagogical basis for this approach drew on constructivist principles. As Volpe (2002, p. 4) put it ‘the best-learned lessons are the ones that students learn themselves, through their own struggles.’ The findings of the specific case study for this paper focussed on Australia’s relationship with Bangladesh and the role of aid in bilateral relations against the background of Australia’s Asian engagement. This case study addressed controversial issues to do with the culture, identity, human rights and social justice emphases. Accordingly, pre-service teachers were required to investigate contextualised ‘real’ issues, which had a range of possible solutions. Furthermore, Hagel & Zulian’s observation that the case study method engages students by ‘exploiting the basic human capacity to learn from other stories’ (1996, p. 1) was apt, for many pre-service teachers were engaged and stimulated by the narrative accounts that were utilised as primary sources.

**Approach and Methodologies**

This pilot study was located within the qualitative framework of a participatory action research model where the lecturer who designed, coordinated and taught the unit was also the researcher (Kemmis & McTaggart, 2000). Data was collected in two phases. First, following the granting of Ethical Clearance, volunteer students were asked to provide anonymous answers to a written questionnaire in week nine immediately following the lectorial. Of the cohort of 60 students, 35 (n=35) volunteered to complete the questionnaire. Second, after conclusion of the unit and finalisation of results, students were invited by e-mail to participate in a 30-45 minute semi-structured interview with the researcher in the following semester. Ten students (n=10) participated in individual interviews.

The questionnaire addressed feedback on their ways in which students engaged with the case studies, in terms of knowledge about the issue and its impact on the people involved. Students were asked to reflect on the degree to which their conceptual understandings about values, culture, identity, social justice and human rights had changed or developed as a result of the case study. Also, students were asked to describe what they understood by Asia literacy; values education; inquiry-based approaches; critical thinking; constructivist approaches, and empathy. The questionnaire also provided an optional open-ended question which asked students to comment on what they found most useful as prospective social science teachers, or would like to see removed from the unit, and to explain why.

The semi-structured interview asked pre-service teachers to discuss their responses first as learners, to pedagogical approaches they experienced during the lectorial, and second, as beginning teachers to reflect on the specific teaching strategies which scaffolded inquiry based learning, critical thinking; and engaging with Studies of Asia and intercultural understanding during the lectorial. The semi-structured interviews were conducted by the researcher, audio recorded and transcribed. Preliminary analysis of both the written responses to the anonymous questionnaire and interview transcripts was undertaken using a thematic approach. A second level of analysis was conducted in line with Glaser and Strauss’ notion of grounded theory (Jones, Torrens & Arminio, 2006, p. 42) whereby first, a process of open coding based on the data was followed by a second stage of interpretative coding which encompassed the consolidation and reduction of categories. The following discussion refers briefly to contextual details about pre-service teacher engagement with conceptions of culture and Studies of Asia prior to, and after, studying this unit. The discussion then deals with the cultural dimensions associated with the case study on Australia’s bilateral relationship with Bangladesh.

**Findings**

Of the thirty-five (n=35) students who completed the questionnaire, 100% of respondents indicated that they were aware of the importance of cultural understanding in the social sciences prior to studying the unit. Twelve (n=12) referred to cultural understanding in terms of having an understanding of self and one’s own culture, while twenty-three (n=23) referred to cultural understanding with reference to understanding the cultures of others. Twenty two students (n=22) indicated that they had not engaged in any study about Asia at school and at university, whilst thirteen (n=13) indicated that they had encountered Studies of Asia at either school and/or university. In response to the question ‘(h)as your participation in this unit broadened your understandings about the significance of Studies of Asia and intercultural understanding in the social sciences?’, thirty (n=30) respondents, or 85.7% indicated that their understanding had changed. As noted later in the discussion of interview data, some students provided valuable insights into how an intercultural perspective can be explored in the classroom through Studies of Asia.
Twenty one (n=21) of the thirty-five (n=35) students chose to respond to the following question with reference to the case study on Australia’s relationship with Bangladesh. ‘Select one case study from this unit. To what degree did lectorial activities impact upon your knowledge and understanding about the possibilities for intercultural understanding and embedding Studies of Asia in the classroom through this case study? Which particular learning experiences (individual and/or group) facilitated or hampered this process? In your response, refer to specific concepts embedded in readings and materials provided.’ Pre-service teachers provided a range of explanations, with some offering several reasons. Twelve explanations (n=12) related to acquiring a deeper understanding of why cultural understanding was important in terms of appreciating differences that arise because of cultural factors. Students gave examples that related to specific issues, such as, for example, child labour. Six (n=6) responses referred to their increased knowledge and understanding about the range of cultures in the Asian region. These students commented on the opportunity to investigate specific issues about a nation (Bangladesh) that only features in the Australian media when there is a national disaster, such as monsoonal flooding. Students contrasted this to the Australian press coverage emphasises on economic relationships with nations such as China, Japan, India, Indonesia and Malaysia. Four (n=4) referred to acquiring knowledge about the challenges facing the allocation of specific aid programs. These students referred to value dilemmas such as which of Australia’s aid initiatives (assistance to the ultra poor, support for education and health, particularly child and maternal health; scholarships programs) should receive the most funding and why?

A range of responses was also evident with reference to knowledge and understanding about significance of Studies of Asia and intercultural understanding in terms of the processes involved, with many identifying more than one process. Eighteen respondents (n=18) referred to the range of group activities they’d participated in and how this helped them to understand different strategies to organise various forms of group work. Within this set of responses, six (n=6) specifically referred to the ways in which structured group discussion about the issues provided insights into handling difference of opinion and conflict resolution. Five (n=5) responses referred to enjoying learning in small groups and learning from other students. Twelve (n=12) made reference to how they either learnt, or started to learn, how to frame different levels of questions to prompt critical thinking and commented on how difficult this was. Ten responses (n=10) reflected on the value of role plays and simulations, and seven (n=7) of these responses also referred to useful strategies used in the debriefing phase. The importance of providing culturally appropriate materials [primary and secondary sources] to facilitate individual and group investigations was referred to as a valuable case study process in ten (n=10) responses. Within this set of responses, eight (n=8) commented on the use of documentary film and discussion as useful in terms of developing intercultural competence.

Written responses varied considerably to the question that asked students to reflect on the degree to which their conceptual understandings about Studies of Asia had changed or developed as a result of the case study. These answers indicated different levels of engagement with the notion of culture. Twelve students (n=12), expressed strong alignment to, and empathy for, people of other cultures. Other responses (n=5) indicated that values were aligned with ‘attitudes’ and made reference to specific readings and stimulus materials. Some students (n=4) indicated that thinking deeply about the cultural components in the case study helped them to be more confident about their decision making. Other responses (n=4) suggested that the case study had prompted intercultural understanding in terms of learning about oneself whilst learning about others. The selections that follow provide some examples of these responses.

Sample student reflections

‘I hadn’t thought that much about it before and didn’t realise how hard it is for families to survive and that children want to work to contribute to their family’s survival. I was seeing it [child labour] though my own context, and not appreciating all the factors involved.’

‘The microcredit projects we investigated made such a difference to the lives of the women weavers. I was so moved by their expressions of pride in how they can be self-sufficient and buy enough food for their families’. ‘We discussed how the project to register births in Bangladesh was an important strategy in combating the trafficking of children to work in Dubai as camel jockeys. None of us had even contemplated how something so simple as registering a birth gave a person proof of their identity and how this is linked to evidence of citizenship … our lives are worlds apart from the children we saw in the documentary … but most of us thought we’d like to do a unit on this with Australian kids to open their eyes to…what some kids face every day… and how important the work of aid agencies is in making a difference.’

‘I was involved in this case study and thought deeply about the issues. We had a great discussion in our group about the challenges – the conditions for workers in the yards that strip rusted bulk carriers for scrap metal, the
great work of the women who rehabilitate the kids rescued from the child traffickers, the efforts to stop the use of the lead poisoned wells... this stuff is never in the media. It doesn’t matter what culture you are from human rights exist for everyone and must be protected. We take our rights for granted’.

With reference to the interviews with ten (=10) students, one question asked during the interview was, ‘The lectorial activities provided opportunities for you to develop intercultural perspectives as an important part of Studies of Asia. How effective was this? What were the strengths and weaknesses of this approach?’ The responses to this question indicate that this was the first time some students had associated intercultural understanding with learning in the social sciences. This is evident in the following extracts from interviews with four (n=4) students in the cohort of ten (n=10) interviewed.

Sample student reflections

‘I thought intercultural understanding was about multicultural days when kids dress up in their national dress and perform traditional dances and that was how you did Asian Studies in schools.’
‘Until now I assumed you had to be objective. That if you had your feelings caught up in this you wouldn’t make objective decisions about other cultures.’

‘It was hard as I had no idea of the sorts of issues people face in highly populated countries like Bangladesh. The challenge of dealing with issues when there are so many lives involved is huge’.
‘I began to understand that you could structure things to handle an analysis of the cultural aspects involved in the classroom. This was a part of Asia that I knew nothing about.’

Responses to this question also indicate that engaging with intercultural understanding increased some students’ motivation to learn. This can be seen in the following three interview extracts (n=3).

‘It was real learning. We were inquiring into issues that impact on so many people ... it made me think about what it means to be part of the human race ... that interdependence between people’.

‘The ranking activity about allocating funding in order from the most valuable to the least valuable in understanding the issue brought it home to me. I’d completed my background work and we shared our major points in the group briefing beforehand so we were all well prepared for this. Now I can understand how to do this in my own classroom and it gets you interested in finding more ... you can look for other related issues to investigate further.’

‘I liked the way we could discuss the cultural dimensions in our small groups ... questions helped us to make the links between our own cultural values and what we’ve already found from our individual work in the first part of the activity. We had some good discussions and I think we all learned from each other too as some students had travelled there.’

A second interview question was, ‘(o)ne of the aims of this unit was to provide opportunities for you to heighten your awareness of Studies of Asia in learning in the social sciences and to develop your sense of purpose as a social science teacher. Comment on the strengths and weaknesses of this approach’. Some students provided several responses to this question. Four (n=4) responses specifically referred to the notion of intercultural understanding aligning with effective teaching. Five (n=5) responses referred to their sense of purpose as social science teachers in terms of making learning interesting and making a difference by encouraging students to learn about the Asian region. Four responses (n=4) indicated that although this could be complex and challenging, it was yet worthwhile as evidenced in the following extract. ‘If we don’t incorporate this in the classroom, kids are just not going to be prepared for their adult lives. The world is changing so much and I want my students to be curious and to want to learn about the region. You have to confront stereotypes and some biases sometimes ... but I can see how you can handle this in the classroom.’

The scope of this paper precludes analysis of other important aspects, such as the case studies which dealt with other nations in the region, the nature of the assessment tasks for the unit together with student perceptions of their assignments in terms of developing further their understanding of the regional issues. However, the findings indicate that that focus on cultural understanding can take effect and contribute to Asia literacy. The pre-service teachers in this cohort moved beyond thinking about culture in purely ‘content’ terms and commenced engaging with intercultural understanding in more cognitive and process terms which embodied broad groupings of understandings. These understandings ranged from conceptualising culture as attitudes,
beliefs and cognitive schemas to engaging with culture as a conceptual basis for thinking, empathising and reasoning in their Studies of Asia.

Conclusion

This paper has attempted to show how a particular approach to embedding cultural understanding and Studies of Asia as a significant component of a social science pre-service teacher education unit prompted many students in the cohort to embrace a focus on cultural understanding in their pedagogy and to think more deeply about fostering approaches to Asia literacy in the classroom. Pre-service teachers experienced first-hand the power of pedagogy to understand how intercultural understanding approach can ‘conscientize’ students to respond to the plight of others, and to empathise with people of ‘Other’ cultures. The paper also situated this form of critical inquiry pedagogy within the broader framework of capacity building beginning teachers for the cultural diversity they will encounter within Australian classrooms, and in the region, as Australia embraces an international future.

References


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i The Asia Education Foundation (AEF) was established in 1992, as a joint activity of Asialink at the University of Melbourne and the Curriculum Corporation, a ministerial company formed through the partnership of all Australian Education Ministers. The AEF advocates for and supports Asia literacy in Australian schools and defines Asia literacy in terms of knowledge, skills and understandings about the histories, geographies, societies, cultures, literature and languages of the diverse countries of Australia’s region.

ii COAG was established in 1992 following agreement by then Prime Minister, Premiers and Chief Ministers. It comprises the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association (ALGA). COAG is chaired by the Prime Minister and the Secretariat is located within the Department of the Prime Minister and Cabinet. COAG’s role is to initiate, develop and monitor the implementation of policy reforms that are of national significance and which require cooperative action by Australian governments.
The Use of an Engagement Survey to Improve Educational Experience and Outcomes in a Language Course

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This study demonstrates the benefit of a survey in improving teaching and learning. It focuses on looking at the level of student engagement and developing an understanding of the issues in a particular course. Derived from a popularly used National Student Survey of Engagement (NSSE), a classroom-wide survey was administered to 179 students and 6 instructors in a generic language course at a Malaysian university. The student rating of their engagement in various educationally purposeful activities was compared with those surveys conducted in universities in the US and Australia. There was a weak but positive correlation between how much students were engaged and their course grades. Comparing the student report of their engagement and instructor value on specific activities revealed aspects of teaching and learning which could be improved. The activities which ratings were notably low and incompatible in terms of the lecturers’ and students’ rating included asking questions and discussion in the class, preparing before the class, getting feedback from instructor, and applying theories. A number of recommendations are presented to help enhance the level of engagement and learning outcomes for the course.

Keywords: Learning Assessment and Evaluation

Introduction

There has been an increasing demand for higher education institutions to demonstrate their accountability in delivering high quality programmes. Institutional reputation is usually measured by research outputs, research and teaching facilities, faculty expertise, library holdings and number of graduates. Students entering a tertiary institution, however, do not easily translate those measures into the quality of teaching and learning experience. A more meaningful practice to assessing an institution is to find out how effective it promotes student learning. How much or how well a student learns can be demonstrated from the process, the outcome or both. This paper investigates an assessment of learning by looking at the relationship between the process and the outcome. More specifically, it focuses on examining how much students are engaged in learning, whether the course grades reflect this engagement, and what could be done to improve learning.

Student learning can be evaluated in different ways including a variety of types of formative assessment (Angelo & Cross, 1993), teaching or course surveys, interviews, focus groups, and the commonly summative assessment in the form of tests, exams or presentations. Assessment serves for different purposes (Biggs & Tang, 2007):

- diagnostic assessment is for identifying student strengths or weaknesses and guiding instructors in teaching plans;
- formative assessment is for providing feedback in learning for students and in teaching for instructors; and
- summative assessment is for presenting the results of teaching and learning.

To assess learning holistically, different approaches of assessment are usually utilised at various points during teaching and learning period. Instructors may assess several aspects of learning including course-related knowledge and skills, learner attitudes, expectations and experience, as well as learner reactions to instruction (Angelo & Cross, 1993; George & Cowan, 1999). The assessment approach that can appropriately be employed depends on these aspects of learning that the instructor wishes to probe.

In recent years, there are many instruments for assessing student learning; one of those has gained a widespread reputation and has been used by almost 1400 colleges and universities in the US and Canada since 2000 (NSSE, 2009a). The National Survey of Student Engagement or NSSE is a survey that “assesses the extent to which students … are participating in educational practices that are strongly associated with high levels of learning and personal development” (Kuh, 2001, p. 12). The survey was developed from a robust conceptual framework based on a number of studies by, among others, Astin (1993), Kuh, Schuh, Whitt, and Associates (1991), and Pascarella and Terenzini (2005). In addition to that, Chickering and Gamson (1987) proposed the popular “Seven Principles for Good Practice in Undergraduate Education” that comprise important aspects of learning engagement. These principles are:
1. Encourages contacts between students and faculty
2. Develops reciprocity and cooperation among students
3. Uses active learning techniques
4. Gives prompt feedback
5. Emphasises time on task
6. Communicates high expectations
7. Respects diverse talents and ways of learning

Although NSSE assesses learning in terms of student engagement, it does not directly measure the outcomes of learning (Kuh, 2003). The survey, instead, is intended to indicate aspects that institutions are doing well in fostering learning as well as those of student experience that may be improved. More specifically, the survey looks into how undergraduate students spend their time inside and outside the classroom doing activities for their academic and personal development. The term “engagement” refers to how much time, effort and attention students devote to academically meaningful activities that are associated with desired outcomes of undergraduate education. The more students are engaged, i.e. the more students practise and get feedback on various learning activities, the more they achieve from their study (Kuh, 2003). The dimensions of student engagement are translated into the survey questions which can be grouped in five benchmarks (NSSE, 2009b):
1. Level of Academic Challenge
2. Active and Collaborative Learning
3. Student – Faculty Interaction
4. Enriching Educational Experiences
5. Supportive Campus Environment

The survey items associated with each benchmark are specified in Carini, Kuh, and Klein (2006).

To investigate student engagement at the classroom level, a group of researchers (Ouimet & Smallwood, 2005) developed Classroom Survey of Student Engagement (CLASSE) which draws on many items from the NSSE survey and also includes additional items specific to the class or course. The CLASSE consists of a pair of survey instruments: CLASSE Faculty that probes the importance of engagement activities as expected by instructors and CLASSE Student that assesses the level of engagement in those activities as perceived by students. The two surveys enable the comparison to be made between what instructors value in teaching and what students experience in learning. Similar to the purposes of NSSE, results from CLASSE indicate the localised levels of engagement which enable the institutions to more efficiently and effectively address aspects of classroom practices that need improvement (Laird, Smallwood, Niskode-Dossett, & Garver, 2009).

If the reports of the engagement survey are mostly useful to instructors to assess learning, this is often not the case to the students, parents and external stakeholders. Exam scores and GPA are more meaningful as the measures of achievement. Student engagement is only one component contributing to learning gain. A number of researchers (Carini, Kuh, & Klein, 2006; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008) investigated the connection between the level of student engagement and measures of academic performance such as GRE, course grades and persistence of continuing to the next level in college. Carini et al. (2006) claimed that there were very small but statistically significant positive correlations between GPA and most of the engagement...
scales albeit the coefficients of correlation were all below 0.2. Likewise, Kuh et al. (2008) confirmed that student engagement contributed modestly but statistically significant to first-year grades. They further pointed out that one standard deviation increase in engagement led to 0.04 points increase in GPA. In general, a weak correlation has been demonstrated to exist between student engagement and achievement.

**Purposes of the study**

The survey instruments mentioned above, NSSE and CLASSE, have been used in the universities in the US. Other countries outside the US such as Australia and New Zealand started to utilise a similar piece of survey which is called Australian Survey of Student Engagement (AUSSE) a few years ago. Results from AUSSE have been analysed and published, including two reports of Australasian Student Engagement (ACER, 2008) and a report on engaging college communities (Coates & Edwards, 2009). Up to date, our search failed to find countries other than those in the US (including Canada), Australia and New Zealand that have administered the surveys or versions of the surveys and published the results. We therefore are interested in finding out the level of engagement measured by a similar survey in our local environment. In this study, we focus on a generic language course in a Malaysian university. There were 9 classes participating in a language course PBI 1032: Academic Reading and Writing (ARW).

More specifically, this study sought to answer the following questions:

- How is the level of engagement in PBI 1032 course comparable to that in selected Western institutions?
- Is there any correlation between the level of engagement and learning achievement in PBI 1032 course?
- What are the instructors’ expectations of the level of engagement in PBI 1032 course?

It is hoped that the answers to these questions will provide instructors with more insights into aspects contributing to effective learning.

**Methodology**

**Participants**

One hundred and seventy-nine Malaysian undergraduates participated in the study. The undergraduates were from the various faculties and taking the Academic Reading and Writing course. This course was taken to fulfil the university requirement for all undergraduates. The undergraduates were with Malaysian University English Test (MUET) band score three and below and, hence, had completed two prerequisite English language courses, or band score four and above and so eligible to take Academic Reading and Writing. The participants were from nine classes of PBI 1032 ARW offered by the university.

The first author met with the other instructors and their students class by class, and an explanation of the study was made to them. Besides that, students were made aware that it was their willingness to participate and they had an understanding of the general parameters of the study. Students were also assured that although the study required them to indicate their student number on the questionnaire, this was for the purpose of matching the students with the results of their assessments; their identity would not be revealed in the study. All students consented to participating in the study were each given a copy of the questionnaire to fill in. The completed questionnaires were then collected for analysis. These data, together with results of assessments for students participating in the study obtained from the coordinator of PBI 1032 ARW, were analysed.

**Instrument**

Two sets of questionnaire were used in the study: one for student participants about their participation in PBI 1032 and the other for instructors about their perceptions of importance of various activities and practices in PBI 1032. The questionnaires consisted of items adapted from NSSE, and each set of questionnaire consisted of six sections. These sections comprised of “In-class Activities”, “Outside-class Activities”, “Interaction with Instructor”, “Cognitive Skills”, ”Class Atmosphere” and demographics of participants.

Responses from the questionnaire were analysed quantitatively. Similar responses were grouped in the same categories to find the number of counts. Statistical analysis was made to find comparison and correlation, and the effects were plotted for ease of interpretation and discussion.
Results and Discussions

1. The comparison between the level of engagement in PBI 1032 classes and groups of institutions in Western countries.

Figure 1 shows the student rating to a number of questions in three similar surveys for PBI 1032 course, groups of institutions in Australia and the USA. Only 19 questions (out of 27) are comparable in the survey for this course and in AUSSE or NSSE, ACER (2009) provides the data from 30 universities in Australia (dark grey bars) and 617 institutions in the US (light grey bars). Some caution should be exercised in comparing these sets of data as the context and the scope are different. The data for PBI 1032 was obtained from a class-wide survey while that for Australia and USA was from an institution-wide survey. In addition to that, there were only 179 students in 9 small classes responding to PBI 1032 survey compared to more than 25,000 students filling in the Australian’s AUSSE (ACER, 2009) and over 360,000 students participating in the US’ NSSE (NSSE, 2009a).

![Figure 1. The level of engagement in PBI course and at institutions in Western countries](image)

The numbers indicating the level of engagement are derived from 4-point Likert scales where 1 = never or rarely, 2 = sometimes, 3 = often, and 4 = always. In some questions in PBI survey, the response alternatives are different although they have the same degree of quality, for example 1 = very little to 4 = very much, 1 = uncomfortable to 4 = comfortable, or 1 = difficult to 4 = easy. For most of the questions shown in Figure 1, the level of engagement in PBI 1032 course is comparable to that at some institutions in Western countries. The activities which were rated more than 0.5 point lower compared to that in the other two groups are:

- Q1&2: Asked questions or contributed to class discussion
- Q4: Made a class presentation
- Q6: Prepared for the class
- Q8: Discussed ideas from the class with others outside the class
- Q16: Discussed grades or assignments with the instructor
- Q17: Received prompt written or oral feedback on academic performance from the instructor
- Q19: Analysing the basic elements of an idea, experience or theory

Page 159
Q22: Applying theories or concepts to practical problems or in new solutions

Some of these differences may be suggestive of the nature of the English course which mainly focuses on developing specific skills of reading and writing academic text types. Lessons typically comprised a selection of written texts followed by explanation of language structures, comprehension questions and grammar exercises. Thus, there were limited opportunities for class presentations whereas there are ample opportunities for these across the curriculum for the two western universities. The discrepancies in levels of engagement between the two groups also suggest that PBI students were less active in class compared to their western counterparts. Asian students are typically claimed to be more passive in the classroom due to socio-cultural factors. In the context of second language learning, Fauziah, Parilah and Samsuddeen (2005) suggested that Malaysian university students’ limited language proficiency, lack of confidence and negative attitude towards learning English language and literature, and the tradition of unconditional obedience to authority are among the reasons that hinder their autonomy or independence in learning. Accordingly, Sarjit and Salasiah (cited in Norizah, 2006) found that most Malaysian students typically expect to be “spoon-fed” by the lecturers with information and notes thus causing them to come to class ill-prepared. A survey done on final year students in a local tertiary institution found that undergraduates reported lower levels of engagement in active and collaborative learning (Norzaini Azman, Manisah Mohd Ali, Abd Halim Tamuri, & Zalizan Mohd Jelas, 2005). Additionally, as cited in Norizah (2006), Mashkuri maintained that students were better at memorizing facts rather than applying the principles that they have learned because their lack of proficiency. This may be able to explain the reason for the differences in level for Q19 and Q22.

2. The correlation between the level of engagement and learning achievement in PBI 1032 course

![Figure 2](image)

Figure 2 presents the scatter plot that shows the relation between the level of engagement and the course grade. The average level of engagement in PBI course as measured by the survey is 2.43 (out of maximum 4.00) and its standard deviation is 0.34. The learning achievement is indicated by the course grade which consists of two group assignments (each is worth 15%), an in-class individual assessment (20%) and a final exam (50%). The average course grade for the class is 68.95 and the standard deviation is 9.29. In order to evaluate the linear association between the level of engagement and learning achievement, Pearson r is employed after ascertaining that the assumptions (Warner, 2008) have been observed. Using SPSS to calculate the correlation coefficient, it was found that $r = +0.074$ which indicates a very weak but positive relationship between the level of engagement and learning achievement. This finding is in line with what others (Carini, Kuh, & Klein, 2006; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008) confirmed in their studies. The NSSE or AUSSE surveys, from which the PBI course survey was derived, are indeed not a direct measure of outcomes of learning. The main purpose is more to help instructors explore aspects of teaching and learning that can be improved. The answer to the third research question will serve the intention as is elaborated below.

3. The instructors’ expectations of the level of engagement in PBI course

The comparison between the students’ reports of their level of engagement and the lecturers’ notion of the importance of each item is illustrated in Figure 3. The horizontal axis represents the average rating for the
student perception, the scale of which has been described earlier. The vertical axis signifies the value indicated by the lecturers, it uses 4-point Likert scale where 1 = not important to 4 = very important.

Quadrant analysis is employed to determine the survey items which student reports match the lecturer intention. Items in concordant occupy the top right quadrant where student reports and lecturer intention are high and the bottom left quadrant where both are low. Those in the two other quadrants are regarded as discordant. Items in the top left quadrant are particularly interesting to scrutinise as the student rating is low despite the high importance value attributed by the lecturers. Some of these items are listed in the following, L indicates the lecturer rating and S indicates the average student rating. The order of the questions presented below reflects the gap between the lecturers’ indication of value and the students’ rating reports, the first question being the greatest.

Q1: Asked questions during your class? (L = 3.83, S = 1.88)
Q2: Contributed to a class discussion that occurred during class? (L = 3.67, S = 2.27)
Q17: Received prompt written or oral feedback on your academic performance from your instructor? (L = 3.33, S = 2.19)
Q7: Reviewed your notes prior to the next scheduled class in your course? (L = 3.00, S = 1.97)
Q6: Prepared for your class (e.g. studying, reading, writing, doing homework and other academic activities)? (L = 3.17, S = 2.34)
Q22: Applying theories or concepts to practical problems or in new solutions (L = 2.83, S = 2.47)
Q25: How difficult is the course material in your class? (L = 2.67, S = 2.18)

It is interesting to note that there are some overlaps between the items rated more than 0.5 point lower shown in Figure 1 and those that are incompatible in terms of the lecturers’ and students’ rating shown in Figure 3. These items comprise Q1, Q2, Q6, Q17 and Q22. It may be argued that the students’ ratings are relatively low for these items, although other items with even lower rating do not present a similar issue. On the other hand, there is a strong suggestion that these items require special attention from instructors and indicate the aspects of teaching that need improving. Generally, these discrepancies again point towards a passive learning approach on the part of the students while instructors were naturally expecting students to participate more actively in class and be well-prepared prior to it despite the teacher-centered approach they practised for the course. On a larger scale, research by Thang (cited in Thang & Azarina, 2007) suggested that undergraduates (including distance learners) of the National University of Malaysia are very much teacher-centered. Similarly, Thang and Azarina (2007) found this to be true although the students are not fully teacher-dependent. They prefer their teachers to be in-charge; pointing out their mistakes, guiding and motivating them. A wash-back effect of the ‘spoon-feed’
system operating in most Malaysian schools was cited as a possible reason for the preference. In order to reduce the gaps between the lecturers’ value and students’ experience, instructors are called for more effort to encourage students to perform at least the seven activities mentioned above on a more frequent basis. More specific recommendations will be presented in the next section.

Conclusions and Recommendations

Using a survey derived from an engagement measurement widely employed by hundreds of higher institutions in the US and Australia, this study sought to find out how much students were engaged in a generic language course in a Malaysian university. The level of student engagement was relatively comparable to that at universities in the US and Australia. Some areas where students were less engaged than their counterparts included asking questions or discussing in the class, preparing for the class, interacting with the instructor, and applying theories. This may be due to the nature of the subject matter which is Academic Reading and Writing and the teacher-centered approach employed by most of the lecturers. The latter is associated with students’ preference for teacher-oriented and guided learning. How much students were engaged in the course, however, was not correlated to their course grades. Students with higher level of engagement did not always get higher grades than those with lower level of engagement. Carini, et al. (2006) admit that there are many “undiscovered factors” of learning affecting student achievement (p. 23) where engagement is one of them. Nevertheless, the comparison between student report of their engagement and instructor value on specific activities revealed aspects of teaching and learning which can be improved. A significant discrepancy was observed in a number of activities including asking questions, discussing in the class, reviewing notes before class, preparing for the class, getting feedback from instructor and applying theories.

Based on this study, we propose the following recommendations which will help enhance the level of engagement and learning outcomes for the course:

- Instructors need to encourage students to ask questions or to be involved in class discussion. There are many ways to achieve this, for example, providing incentive for asking questions, organising small group discussion where each member taking turn for specific roles, assigning students to write possible test or exam questions, and so on.
- Student preparedness needs to be acknowledged, otherwise students do not see the value of being prepared. This can be done by providing students with a pre-lecture reading list. Various strategies can be employed for making sure that students do the required reading, for example, asking them to write a summary of what they read, administering short quizzes on the reading topics, and leaving out portions of material that are included in the reading requirement.
- It takes only a little more time to provide written feedback on assignment or test scripts, but the impact can be significantly encouraging to the students. Not only do they perceive the willingness of the instructors to be involved in their learning, the feedback also serves as suggestions for the students to do better next time.

In the future, it would be useful to carry out a study of comparable scale and orientation to those that have been done in western universities in order to improve the teaching and learning in local higher learning institutions.

We are indebted to The Trustees of Indiana University, Centre for Postsecondary Research for their permission to use the National Survey of Student Engagement’s (NSSE) survey instrument, The College Student Report.

References


Anxious Attachment in Micronesia: An Examination of Arrested Exploration and Resignation to Place

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Research on familial experiences has documented several stressors that individuals experience in response to difficult life circumstances. This study examines the prevalence of anxious attachment among college students in the Micronesian region, composed of Yapese, Kosraean, Chuukese and Pohpeian. It made use of the Anxious Attachment Inventory developed by Kane that is scored on a 4-point scale ranging from all the time with a numerical value of 4 to never with a value of 1. The results show that Micronesian students are concerned with leaving home (highest mean) because they feel they are important in the day to day family functioning (second highest mean), and the fear they are not equipped to handle the rigors of life away from home (third highest mean). The overall experience of worry and demands by parents and family members put these students at-risk. Teaching strategies to weaken maladaptive schemas of pressures to remain at home and fears of leaving home are discussed.

Keywords: Familial stressors, anxious attachment, maladaptive schema, affective learning

Introduction

Anxious attachment is a condition of worry or preoccupation amongst family members about the family’s collective resilience to sustain an intact unit (Bowlby, 1978). Various measures in the form of family roles have been identified and defined as preventative efforts to prevent the erosion, dissolution or loss of these relationships. The Anxious Attachment Inventory measures the prevalence and degree of anxious attempts to keep an intact unit. This study presents and defines anxious Micronesian strategies for maintaining an intact unit and how teachers may translate their family fears by interventions to weaken their cognitive beliefs or schemas that disable their attempts to leave home or be away from home on their own.

Objective of the Study

The purpose of this study was to investigate the familial factors that that challenge the students’ ability to successfully complete their academic program. Equip with the knowledge of familial stressors that may affect the academic achievement of students, a research agenda with the following objective has been established - to apply the knowledge gained from this investigation to the creation of intervention strategies designed to reduce or eliminate the obstacles brought about by factors that stress students as they struggle to meet family demands.

Methodology

A total of 161 students from the Micronesian region participated in this study. Of this number 69 were males and 92 females. They were from the four Federated States of Micronesia – Phonpei, Chuuk, Kosrae and Yap. The table below shows the distribution of the subjects by gender and ethnicity.
Table 1: Subjects’ Distribution by Gender and Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonpeian</td>
<td>18</td>
<td>32</td>
<td>50</td>
</tr>
<tr>
<td>Yapese</td>
<td>16</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>Chuukese</td>
<td>23</td>
<td>27</td>
<td>50</td>
</tr>
<tr>
<td>Kosraean</td>
<td>12</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>69</td>
<td>92</td>
<td>161</td>
</tr>
</tbody>
</table>

The Anxious Attachment Inventory (AAI) by Kane, 2006 was administered to a convenience sample of 161 freshmen college students in the College of Micronesia in the Federated States of Micronesia. The AAI is a 16-item self-report measure of frequency of occurrence of familial stressors. Respondents use a four-point Likert-type scale ranging from 1 (never) to 4 (always or all the time) to respond to the items. Higher scores of respondents in this instrument indicate higher levels of attachment anxiety. The 16 items were subjected to factor analysis. Four factors with items whose eigen values of 0.30 or better were considered. The four factors describe the respondent as a hopeless victim, confidante, self-destructor and referee. The final version of the instrument has three items for every factor.

The items that were not considered in the first draft were items 1, 6, 12 and 14. The table of specifications below shows the final items in Kane’s AAI.

Table 2: The AAI Table of Specifications

<table>
<thead>
<tr>
<th>Categories</th>
<th>Item Placement</th>
<th>New Item Placement</th>
<th>No. of Items</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV: Hopeless Victim</td>
<td>5, 9, 13</td>
<td>4, 7, 10</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>C: Confidante</td>
<td>8, 15, 16</td>
<td>6, 11, 12</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>SD: Self-Destructor</td>
<td>2, 4, 10</td>
<td>1, 3, 8</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>R: Referee</td>
<td>3, 7, 11</td>
<td>2, 5, 9</td>
<td>3</td>
<td>25</td>
</tr>
</tbody>
</table>

To examine which items in the AAI signify the most common stressors, those who indicated 4 (true all the time) were noted and then ranked. The means and standard deviations of the items were also obtained for males and females as well as for the different ethnic groups.

**Results**

The following table shows the most common familial stressors indicated by the respondents in this study. They were ranked according to number of respondents who have indicated that these stressors were true all the time for them and given a numerical equivalent of 4.

The means for males and females across ethnicity are shown in Figure 1 that follows Table 3. They show no difference in gender as far as the common familial stressors are concerned.

Table 3: Frequencies, Means and Standard Deviations of Common Stressors

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency Count</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. I wish I could be there when things go wrong at home.</td>
<td>84</td>
<td>3.2</td>
<td>0.94</td>
</tr>
<tr>
<td>7. I am important in the day to day family functioning.</td>
<td>58</td>
<td>3.1</td>
<td>0.82</td>
</tr>
<tr>
<td>9. My parents were preoccupied with protecting me from the world.</td>
<td>46</td>
<td>2.8</td>
<td>0.99</td>
</tr>
<tr>
<td>5. I was allowed to stay home even though mildly ill.</td>
<td>44</td>
<td>2.6</td>
<td>0.98</td>
</tr>
</tbody>
</table>
The results show that Micronesian students are so concerned with leaving home (highest mean) because they feel they are important in the day to day family functioning (second highest mean). The same items – 3 and 7 that obtained the two highest means also had the most number of respondents having high levels of attachment anxiety.

Items 9 and 5 are all about parents’ over protection. Too much family involvement can be viewed as a source of stress where a negative feeling of worthlessness is developed. Overprotective behaviors might reinforce misperceptions of inability to cope.

In terms of gender, the male and female Micronesian respondents do not differ significantly in the common familial stressors noted above, although the means of the males are slightly higher than their female counterpart in three out of the four commonly identified familial stressors. Their t-values of 1.32 (item 3), 0.55 (item 7), 1.02 (item 9) and 0.60 (item 5) are all non-significant.

Similarly with ethnicity, no significant differences were noted for all the items representing familial stressors. This means that Phonpeians, Yapese, Chuukese and Kosraeans share the same attachment anxiety involving their respective families.
Discussion

Anxious attachment (Bowlby, 1988, Kane, 1989) is described as a chronic preoccupation or worry about the integrity of the family unit and its collective ability to remain securely intact. Anxiously attached families fear the erosion and possible dissolution of relationships in the family and consequently agree to carry out certain roles to prevent that from happening. The more anxious the prediction of threat, the more likely that the agreed upon role(s) will have a strident dimension (Kane & Ferrer, 2010).

These roles elaborated by Kane, (1989) represent attempts to prevent anxieties related to the experience of loss and reflect Freud’s final theory of anxiety. Freud stated that anxiety is generated when an individual anticipates or experiences loss. The four categories of loss include: loss of the relationship, loss of control, loss of love and loss of competency. Each of the roles and the loss they attempt to prevent are listed below:

Active Anxious Roles: (1) Confidante / Loss of Relationship - in this anxious arrangement an offspring is appointed to tend to a fragile parent in a role reversal. It is a symbiotic use of the child to meet the adult’s needs for attention, approval and nurturance. The child grows older to become over-preoccupied with the well being of others at his own expense of personal development; (2) Referee / Loss of Control - an offspring is expected to monitor the emotional and conduct escalations of family members in an attempt maintain equanimity and stasis. The Referee in many cases fears what parents/siblings may do to each other or themselves in his absence. He has a strong need to be close to home to respond to possible emergencies.

Confidantes and Referees are able to ward off anxiety if their provisions are successful at preserving and controlling the relationship and the familial temperament. They become psychologically symptomatic if their provisions are not effective.

Passive Anxious Roles: (1) Self Destructor / Loss of Love - an offspring who fears he is not loved becomes distanced, symptomatic and used to scapegoat attention away from parental insufficiencies vis-à-vis their ability to provide care and protection. The Self Destructor often claims to be not worthy of love and the family unit is benefitted by having its weakness identified in one member as a safety valve – “the problem”. The Self Destructor suffers from anxiety but unconsciously submits to playing out the compromised role for the well being of the system for the collective release of stress for everyone that is accomplished and to keep the unit intact; (2) Hopeless Victim / Loss of Competency - an offspring is over protected by parent(s) to dismiss his frailties and in-competencies. This dismissal assuages parental anxious fears of sudden loss and likewise deflects attention away from their insecurities about the erosion of the intact unit that the offspring’s individuation represents.

Self Destructors and Hopeless Victims passively accept their symptomatic roles in subservience to the threats of parental inability to provide love and protection in their families to prop up an artificial image of love and protection nevertheless. These parental strategies may sustain the appearance of an intact family but only at the expense of criticism, threats and omission of support should the anxious offspring fail to comply and the offspring’s goal of healthy personal individuation.

Micronesian Anxious Attachment

In this study Micronesian adolescents responded to the AAI to measure the prevalence and category of anxious attachment in their families. Two prominent family roles emerged for these participants regardless of their island of residence or gender which lends credence to an understanding of the ethos of Micronesians and their family lives.

These Micronesian participants’ four most common indicators of attachment arrangements in their families included two active Referee categories and two passive Hopeless Victim categories. The familial messages and expectations that accompany these roles indicate alternating and active/passive responses from the offspring to include a demand for them to “be there” for routine family obligations along with the inference that they also do not measure up to be able to handle responsibilities outside the family and in a hostile and threatening world.

Both roles – Referee and Hopeless Victim – contain threatening possibilities of emergencies or crises. For example the parental injunction in the Referee’s family arrangement suggests that not only is he necessary to handle the family’s daily routines, he should likewise be on the alert for possible escalations of temperament and threats family members may make against each other or to themselves. In the Hopeless Victim’s
arrangement the forecast of success at separation and individuation is discounted because of the threatening hostile vagaries of a cruel and unforgiving world. In both situations the offspring is fearful of what may happen at home and fearful of the obstacles he will face in the real world should he attempt to leave. These fears keep him at home and enmeshed in the family system.

**Arrested Exploration**

Rapprochement, or reconciliation, is a concept at the core of Margaret Mahler’s (1939) foundation of object relations theory. The quality of the mother – toddler experience at this stage of development later affects his adolescent and adult requirements to stay attached to family while successfully separating and achieving individuation. These two achievements, staying attached to family while becoming one’s unique self are the benchmarks of positive mental health in the object relations context. They are contingent upon mother’s provision of a secure base from which the toddler can explore the appealing novelties of the environment while remaining confidently assured of the availability of the base upon his return, or reconciliation.

The messages imparted in the Micronesian family generated from the sample in this study suggests an insecure base (“it’s not safe without you here”) which likewise operates to sabotage his attraction to life outside the family and off-island (“you’ll never make it out there”) in the rest of the world. The two motivations of a healthy offspring, to explore the appealing attractions of novel situations and to achieve autonomous competency in these new and novel environs are constrained by the Micronesians’ family requirements and by the geographical constraints of island existence.

**An Island Psychology**

The presence of these two anxiously attached roles, Referee and Hopeless Victim in Micronesian family life are exacerbated by the remote locations of their islands in the western Pacific and the isolated nature of their resignation to place as indicated by Kane & Ferrer (2009).

While attachment and object relation theories argue for the significant impact family dynamics have on an offspring’s sense of personal competency at home and away from home, it may be for these Micronesian inhabitants of Chuuk, Yap, Pohnpei and Kosrae that the overriding environmental reality of their existence is their entrapment by the surrounding Pacific seas and the necessity to travel thousands of miles to arrive at the nearest continent which will be culturally different from them when they arrive. These factors further conflict an already burdened adolescent who has self doubts about his ability to make it on his own away from home and may reinforce a significant sense of his being very “different” from all others in the rest of the world.

And while these patterns – Referee, Hopeless Victim – are considered dysfunctional by western standards of family functioning, it may be for these Micronesians, a more protective family strategy based on their remote locations, their sense of being “different” and the enormous amount of travel required for any capricious exploratory ventures or more serious attempts for individuation and autonomy away from home. In this case the price for individuation far outweighs any benefits derived and reinforces resignation to place.

**Implications for Teaching and Learning**

In any event, whether dysfunctional or protective, the psychological effects of above-mentioned roles may be mitigated by teaching strategies that take into consideration the cognitive schemas attached to the anxiously attached roles. For example Young (1999) has defined eighteen maladaptive schemas or cognitive beliefs that become engrained in offspring as a result of the anxious arrangements in their families. The two schemas implicated by the Referee and the Hopeless Victim are, “I am afraid to leave home because of what may happen” and “I’ll never make it on my own” respectively. While the intractability of schemas can be treated in psychotherapy for adults, the following classroom strategies may be a useful way to didactically address and weaken the development of these schemas at the elementary and middle school levels.

1. Presenting a story where the main character displays the role of a Referee is one intervention strategy. At the core of this role is the conviction that the troubled family member is responsible to take care of his parents to please them. This is the schema that needs to be confronted through group discussion. This approach will enable the students to see how the schema negates positive information and then learn how to reclaim the positive information through reason and logic.
Another alternative is making a balancing-off list after discussing the story. A list of what the Referee gives to his parents and a list of what he receives from the relationship can be drawn out individually. Making this list will help the student see how the relationship is off-balance. To achieve a balance between what one gives and what one gets from a relationship a flashcard is recommended to be developed as a reminder of what needs to be done. This flashcard is valuable in making the slow transition from an understanding of oneself to emotional acceptance of what need to be changed.

2. To counter the feeling of hopelessness the cognitive conflict strategy can be used effectively by asking students to experiment with new ways of behaving that are more expressive of one’s needs. Changing one’s behavior changes the way that one thinks about himself. Positive behavior change creates self-confidence and self-esteem. To achieve this positive change in behavior, have the students list the people that they are attracted most. Have them identify their assets and capabilities that are needed to compare with people they are attracted most. Writing those lists can help the Hopeless Victim see that there are positive things about him that he tends to discount.

Another strategy is to have students write a letter to a critical parent and express their feelings. The purpose is to vent the sadness and anger for having been invalidated. This is a ‘talking back’ technique. With this technique the students are urged to express the good qualities that critical parents overlooked or downplayed.

To focus on the positive, students can draw pictures of themselves depicting what they want to be. The teacher can put their drawings on the bulletin board to constantly remind them of what they want to be. Their drawing is a weapon against the voice of their parents deep inside telling them ‘that they can’t do it and that they just have to stay at home. But there is also the vulnerable person inside who wants to turn things around and this voice inside is made stronger by the students’ drawing. The drawings help the students remember to give themselves the chance to follow their dreams.

The above-mentioned strategies are embedded in the facilitator role of the teacher. As a facilitator, the teacher needs to find out ways to help the troubled students in class discover themselves – who they are and what makes them happy without relying solely on what makes their family happy. The teacher can only guide these students in their journey towards change and individualization.

References

The Use of Learner-Development Activities in ESL Classrooms; The Correlation Between Learner Autonomy and Students’ English Writing Proficiency

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This study focuses on the effort to foster learner autonomy in an Intensive English Program through the activities suggested in the three learners’ development stages promoting learner autonomy and its result in developing the students’ learner autonomy as well as their English proficiency level. The levels of perceived learner autonomy are measured by a questionnaire; while their levels of English proficiency are evaluated through the pre and post test of essay writing assessments. There have been quite a few definitions of learner autonomy suggested by different learner autonomy scholars and the one that this research project uses as a conceptual framework is that of Littlewood (1996, p. 428) who defines autonomy as “…independent capacity to make and carry out the choices which govern his or her action…” The findings indicates that despite the fact that there is no significant correlation between the students’ perceived learner autonomy and the students’ performance, the result of their post test indicates otherwise. The verification from their writing proficiency as well as teachers’ reflective journals indicates that the activities suggested by Scharle and Szabo (2000) do make a positive impact, with or without the recognition from the students.

Keywords: Learner autonomy, learner-development activities, writing proficiency, reflective journals

1.0 Introduction

There have been various readings that emphasized the fostering and development of learner autonomy and in the language classroom. Shaw (2008) for one has argued between what it is meant by having autonomy in the classroom and practically implementing it. As he suggested, learner autonomy, as good as it sounds, is not really an idea that can be easily executed per se. It requires a lot of negotiation between teachers and students, as the teachers would also not want to sacrifice the value of teacher autonomy.

This study branches from the inquisition whether learner autonomy can be nurtured in students, specifically with the use of Learner-Development activities suggested by and adapted from Scharle and Szabo (2000). By means of educational experimentation as parameter, 3 groups of students had simultaneously a pre-post test session, and inculcated an interval of a whole series of selected activities proposed in “Learner Autonomy: A guide to developing learner responsibility”. In addition, the student’s level of learner autonomy was studied via pre-post questionnaire, adapted from Deng (2007). Based on the details mentioned by Nunan (1992), this experiment attempts to explore the relationship between the independent variable, Learner-Development activities to two dependent variables, which are writing proficiency and level of perceived learner autonomy. In addition, reflective journals were used as an insight on what the researchers have perceived the development of learner autonomy is (Harrison, MacGibbon, & Morton, 2001).
2.0 Literature review

In the field of language teaching, ‘learner autonomy’ has been a ‘buzz-word’ since the 1990s (Little, 1991). Cotterall (1995) suggests that numerous language educators believe in the significance of applying the idea of learner autonomy on their language teaching process. As mentioned by Chan (2001) and Fenner (2001), the definition of autonomous language learners that has been quoted the most is of that of Holec (1981), who introduced the term ‘learner autonomy’ into language learning, which describes the autonomous learners as those who are in control of all the components of their own learning process including the learning objectives, strategies, plan, resources and progress. Similarly, David Little’s version of autonomy states that it is actually a matter of a learner’s psychological reaction to the process of learning and it has nothing to do with something that is done to the learner. Little and Dam (1998) interpreted autonomy as a conscious intention from the learner to initiate and direct the learning process, monitor progress, and evaluate achievement. Little (2003) also offers an argument on learner autonomy in terms of language learning. He states that it should be easier for the language learners to use the learned language if they are more autonomous in their learning. Therefore, the language learners who are more autonomous will enjoy the ease of learning the language more effectively.

However, Deng (2007) argued that despite the fact that autonomy is now considered as part and parcel of language learning, most research conducted on the area treated autonomy and language learning as two different and separated fields of thought. He highlighted a few neglected areas. For instance, there is no solid theory on autonomous language learning in linguistics or applied linguistics (Benson & Voller, 1997). Furthermore, there has been very little research on how effective a self-instruction language learning technique is in a classroom (Little, 1991) and very little attention has been given to the development of autonomous learning materials, albeit the continuous growing acceptance that autonomy is strongly induced when learners find the materials interesting and useful for them. Deng (2007) further stated that more and more researchers have started to realize that autonomy and effective learning are closely related. Still, most explorations of the relationship so far are still at the level of theory only without much substantial evidence coming from the classroom. Thus, there is a pressing need for more research that looks into the relationship between the development of learner autonomy and language acquisition learner.

Based on the notions that the development of autonomous learning materials in language learning needs to be given more attention, and also more research on the relationship between the development of learner autonomy and learner language acquisition need to be conducted, this project aims to address these two notions. The definition that this research project will use as a conceptual framework is that of Littlewood who defines autonomy as “…independent capacity to make and carry out the choices which govern his or her action …” (Littlewood, 1996, p. 428). He further elaborated that autonomy depends on ability and willingness. Ability constitutes knowledge of available choices and skills for carrying out the choice. Willingness occurs from motivation and confidence so that choices will be made. All the four components need to be present in an autonomous learner.

3.0 Research design and methodology

As the project involves numerous types of data, this particular paper will include quantitative data, which is supported by qualitative discussion. This section will illuminate on the sample and profile of respondents, research instruments, data collection procedure and analysis of data. The research was conducted from mid 2008 to the end of 2009. The data gathering per se was done in Term 4 (late September to December 2008).

3.1 The sample and profile of respondents

The study was conducted in a private university in Malaysia with the chosen sample based on a convenient sample taken from an Intensive English Program. Although it is more desirable to use probability sampling for the research, it was of the best interest of the study for the control group to be students taught by the researchers as some specific activities may have not been done by other teachers. The participants in the study, which comprised non English native speakers, were from diverse cultural background, gender and age, came from Pre-intermediate, Intermediate as well as Advanced level of English proficiency. At the earliest stage of the study, participants were given the explanation of the purpose of the study and the procedures they would be involved in, and they were requested to sign a consent form. The participation was on voluntary basis as they could opt for their data not to be used in the study. However, their participation as students in the classroom activity was compulsory.
3.2 Research design and instruments

In order to strengthen the design methodology of the study, few research instruments were utilized. They included a Writing pre test and post test to determine the students’ development and proficiency level, questionnaires related to their current learning styles and attitudes towards learning and their past experience in their language learning activity (adapted from Scharle and Szabo 2000), IMI questionnaire (‘Self Determination Theory,’ n.d.) to determine whether the students favour the given activities in the second stage of development, and teaching procedures, supported by the researchers’ reflective journals. The distribution of the questionnaires is embedded in students’ classroom activities. The questionnaire on the level of students’ learner autonomy, adapted from Deng (2007), was distributed during the first and the last stage. The choice of these multiple data collections is in view of Guba’s relativist ontology belief (Willis, 2007).

Data collection was conducted in one term. The given term consisted of nine study weeks and one exam week. The research design was divided into three stages, based on the core ideas of Scharle and Szabo (2000). It is expected that by the end of the three stages, the students will be able to demonstrate their confidence in choosing the right skills in approaching certain tasks, monitor their own learning and activities as well as fostering minimal dependency on teachers as givers of knowledge. For this particular paper, the illustration of such criteria will be based on their attempt in completing their final writing exam, with the results compared to the pre test and correlated to the respective questionnaires prearranged to indicate their level of learner’s autonomy. The teacher journal will act as additional data.

3.3.1 Three stages of development

The first stage is raising awareness. This stage is still very much a teacher-centre approach, with highly-structured activities (Scharle and Szabo (2002), which was later identified as Learner-Development activities, based on the assumption that the learners are not ready to take on the responsibility over their own learning. The activities focus on presenting new viewpoints and experiences to the learners and at the same time make them aware of their inner learning process. As these activities are short and various, the researchers chose different activities to suit the learners’ needs and skills focus. This stage is where motivation, confidence, and knowledge of available choices mentioned by Littlewood (1996) are introduced. In the second stage, based on the targeted skills to be taught, each researcher chose activities suggested by Scharle and Szabo (2000) to meet the learners’ needs in fostering learner autonomy in language learning. These activities included approaches, whereby the students were given more freedom in managing and experiencing their own learning process. For example, the students were asked to do group writing and peer checking, pastimes and even singing songs. The last stage, transferring role, gives the most freedom for students to choose strategies in accomplishing tasks, or maybe, in deciding task type. This is when a learner is expected to show all the four components of learner autonomy. A learner should be able to develop through the stages naturally, although, the time for transition from one stage to another differs from one learner to another. In this stage the students had to undertake a mini project (a project that can be completed within one hour) resulting in a short class presentation. The selection of topics, strategies applied to complete task and the class presentation of the task are the elements of learner autonomy that would be evaluated. Apart from the aforementioned guidelines, the teachers did not provide the learners with any other kind of guidance. The aims was to see if the learners were willing to take the initiatives, were able to apply the right skills and had the confidence to execute the project without depending on the teachers. Therefore, the teachers’ task was only to observe students’ progression towards the completion and delivery of the project.

The use of teacher’s reflective journals plays a role in describing the process in which the students and researchers might have to go through while undergoing the activities. These may include, but not restricted to, discussions of students’ verbal and non verbal expressions towards the activities, specific issues or problems that were encountered, and measures taken to remedy the situation, as well as the teachers’ thoughts and reflection before, during and after the execution of each activity in every stage.

3.3 Analysis of data

In this paper, the direct result of stage three, which was the mini project, will be briefly discussed towards the end of the paper. The marks from the final exam test as well as the result from the learner autonomy questionnaire were analysed and cross referenced through paired t-test and Pearson correlation, mainly, to
investigate the availability of ‘ability and willingness’ (Littlewood, 1996) in supporting learner autonomy as perceived through their response in the learner autonomy questionnaire. In addition, the researchers maintained reflective journals to take note of the class environment during the activities. Furthermore the teachers-researchers were expected to monitor their teaching and to engage in professional discussions with fellow teachers-researchers involved in this particular research, as highlighted by Goodwin (2001, cited in Good & Brophy, 2003). Throughout the term, the researchers also collected samples of students’ work as artefacts of students’ progress during the three previously mentioned stages. This evidence, however, will not be available for discussion in this paper.

4.0 Results and Discussion

4.1 Statistical analysis

Given is the statistical analyses based on paired t-test for English proficiency and learner autonomy. Later, tabulated information on the correlation between the learner’s proficiency and their learner autonomy will also be revealed. Analysis based on the questionnaires that involve Likert scale response (adapted from Deng, 2007) as well as the writing marks of the students will be highlighted. The aim is to find out the efficiency of the Learner-Development activities in supporting learners in improving their writing proficiency. In addition, Pearson Correlation was used to compare the points between students’ level of learner autonomy as well as their writing performance before and after the given treatment. Though it does not directly prove whether improvement in learner autonomy relates directly to students’ performance, it does indicate that there might be some correlation between the two items. For the purpose of identification, the total sample group of 54 consisted of 13 students from pre-intermediate level (PI), 21 from intermediate level (I) and 20 advanced learners (A). The groups will be individually analyzed, and later combined to see an overall result.

Table 1: Paired t-test Analysis of the scores of English and Learner Autonomy (pre and post treatment) for the entire sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Std. Error Of Dev.</th>
<th>95% Confidence Interval of Differences</th>
<th>t</th>
<th>df</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner Autonomy (pre)</td>
<td>67.35</td>
<td>6.78</td>
<td>1.216</td>
<td>-2.16 - 2.72</td>
<td>0.2284</td>
<td>53</td>
<td>0.8202</td>
</tr>
<tr>
<td>Learner Autonomy (post)</td>
<td>67.07</td>
<td>7.38</td>
<td></td>
<td>-2.16 - 2.72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Proficiency (pre)</td>
<td>7.64</td>
<td>2.87</td>
<td>0.323</td>
<td>-3.69 - 2.39</td>
<td>9.4302</td>
<td>53</td>
<td>0.0001</td>
</tr>
<tr>
<td>English Proficiency (post)</td>
<td>10.68</td>
<td>3.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1a: Paired t-test Analysis of the scores of English and Learner Autonomy (pre and post treatment) for the pre-intermediate.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Std. Error Of Dev.</th>
<th>95% Confidence Interval of Differences</th>
<th>t</th>
<th>df</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner Autonomy (pre)</td>
<td>64.92</td>
<td>7.17</td>
<td>2.390</td>
<td>-9.75 - 0.52</td>
<td>1.8988</td>
<td>12</td>
<td>0.0819</td>
</tr>
<tr>
<td>Learner Autonomy (post)</td>
<td>69.46</td>
<td>8.42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Proficiency (pre)</td>
<td>6.46</td>
<td>2.26</td>
<td>0.645</td>
<td>-3.33 - 0.52</td>
<td>2.9810</td>
<td>12</td>
<td>0.0115</td>
</tr>
<tr>
<td>English Proficiency (post)</td>
<td>10.68</td>
<td>3.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1b: Paired t-test Analysis of the scores of English and Learner Autonomy (pre and post treatment) for intermediate level students.
Table 1c: Paired t-test Analysis of the scores of English and Learner Autonomy (pre and post treatment) for advanced level.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Std. Error Of Dev.</th>
<th>95% Confidence Interval of Differences</th>
<th>t</th>
<th>df</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner Autonomy (pre)</td>
<td>66.45</td>
<td>7.00</td>
<td>1.596</td>
<td>-1.59</td>
<td>5.09</td>
<td>1.0966</td>
<td>0.2865</td>
</tr>
<tr>
<td>Learner Autonomy (post)</td>
<td>64.70</td>
<td>6.04</td>
<td>1.596</td>
<td>-2.793</td>
<td>7.9321</td>
<td>19</td>
<td>0.0001</td>
</tr>
<tr>
<td>English Proficiency (pre)</td>
<td>7.52</td>
<td>1.77</td>
<td>0.279</td>
<td>-2.793</td>
<td>7.9321</td>
<td>19</td>
<td>0.0001</td>
</tr>
<tr>
<td>English Proficiency (post)</td>
<td>10.68</td>
<td>3.07</td>
<td>0.279</td>
<td>-2.793</td>
<td>7.9321</td>
<td>19</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Table 2: Pearson Correlation between results for Learner Autonomy points and Writing Test Marks (English Proficiency) for both pre and post treatment (overall and individual level)

<table>
<thead>
<tr>
<th>Overall</th>
<th>Pre treatment</th>
<th>Post treatment</th>
<th>Pre intermediate group</th>
<th>Intermediate group</th>
<th>Advanced group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre treatment</td>
<td>0.178127</td>
<td>0.032999</td>
<td>Pre treatment</td>
<td>Post treatment</td>
<td>Pre treatment</td>
</tr>
<tr>
<td>Pre intermediate group</td>
<td>0.228446</td>
<td>0.337334</td>
<td>-0.11704</td>
<td>0.15035</td>
<td>0.346385</td>
</tr>
</tbody>
</table>

Legend for P value:
- P value Wording
  - >0.05 Not significant
  - 0.01 to 0.05 Significant
  - 0.0001 to 0.01 Very significant
  - <0.0001 Extremely significant

4.2 Reflective journals

The following discussion is based on the teachers-researchers’ reflective journals, which may indicate the existence and growth based on the two characteristics of learning autonomy. For a more practical purpose of comparison, the two pre-intermediate (PI) and intermediate (I) classes are highlighted and compared. Such comparison plays to part, whereby:

i) The focus is more on the development of the group with the lowest proficiency (the Pre-Intermediate group), as this is the group that indicated the lowest improvement in their perceived learner autonomy (based on statistical analysis’ result) and

ii) The analysis is compared to that of the Intermediate group to see if there is similar pattern and trend between these two groups.

For this paper, only one activity is focused on, which is First Words (Scharle & Szabo, 2000) as this particular activity has become the stanch of the progress throughout the data gathering stage. Based on the comparisons on this particular activity, it has been found that the initial feedbacks from the students are rather contradictory. In Pre intermediate group, this activity did not start positively, as they do not seem to be enthusiastic in sharing knowledge, while for the Intermediate group, the students prepared and presented the First Words ‘seriously’.

In the second and third attempts of this activity, again, both groups seemed to be indicating different trait. One pattern that is perceived to have possibly influenced the difference was the fact that these two groups started with different level of English proficiency. For pre-intermediate group, as an example, it was found that the students did not choose their level appropriate words, such as “halcyon”, “Labrador” and “omnipotent”. Some of these words were quite abstract and might have been too difficult for the students to explain and for the peer to comprehend. In addition, the students did not provide any pictures or any visual aid to assist their peers’ understanding. In addition, it was detected that, at this initial stage, the students seem to face difficulty in explaining the words that the students tend to resolved to their own mother tongue. The teachers, on the other hand, faced a dilemma as there was not much time to allow the students ‘develop’ their proficiency without any
interference since it is intensive English program which runs in the course of 10 weeks. At that point, the fear of compromising the learning autonomy to students’ level of comprehension was eminent.

The First Words activity was carried on until the end of the term. From the reflective journals, it was realized that the students did progress as times went by. What is better, being reflective writers made the teachers-researchers realize that as teachers, they may have not been as encouraging as they should have been. Nonetheless, the reflective journals assisted the teachers to understand that, to fully allow the students to be learner autonomous, the teachers have to learn to let go of the students in terms of allowing them to be more independent in their learning. The feedback and the discussion also further improved the approach in allowing the students to build their confidence and skills to transfer their knowledge to their peers.

As the course venture to week nine, teachers reported progress, whereby, for Pre intermediate, the performance of the students was observed by other researchers, which later indicated that they found the students performed well, even though, this was initially one of the students with the lowest proficiency. Meanwhile, the teacher indicated that Intermediate students seem to enjoy the presentation and do not continually seek for approval from her (personal reflections, November 2008).

4.3 What does this mean?

The result of the study implies that although the learners’ perception on their level of learner autonomy may not be statistically significant, the writing marks generally show very positive traits and the reflective journals have supported this notion.

On one hand, the statistical analysis may suggest that learners’ performance indicates a strong positive correlation between the activities and the students’ proficiency. On the other hand, after the treatment, the level of autonomy as indicated in the questionnaire has no statistical significance evidence. At the initial point, this may contradicts our assumption which aims to prove that there is correlation between students’ performance and learner autonomy as a result of the Learner Development Activities. Nevertheless, our theory would be that there may be a lack of understanding of the students’ own concept of learner autonomy compared to their own performance. In another word, we recognize that these learners may not be aware that their learning potential was being tapped into their learning environment and state of mind through the Learner-Development activities. Despite the fact that there is no significant relationship between students’ perceived autonomy and their progress in their proficiency, the researchers note that there are indications of learner autonomy, specifically, willingness and skills as illustrated in the reflective journals.

By the end of the term, the teacher-researchers observed students taking initiatives to learn and making sure that they understand the words before presenting it to the class. “For me, this illustrates willingness and skills” (personal reflection, Pre intermediate, December 2008). In addition, students now know how to or at least take initiatives to correct their own mistakes. Thus, the teacher researchers wish to continue this activity in subsequent terms. These selections of reflections focusing on First Words activity indicated the fulfillment that the teacher’s improvement may be due to the heighten level of learner autonomy, even if the learners do not realize it nor is it reflected through Deng’s questionnaire (2007). Furthermore, during the final stage of the teaching process which was the mini project, it was observed that many of the students showed a considerably higher level of enthusiasm and interest in selecting their own topics and preparing materials. They even created posters and PowerPoint slides, and they presented their chosen topics with confidence.

5.0 Conclusion

Based on the data obtained, it has been observed that the activities, suggested by Scharle and Szabo (2000) such as First Words, grouping words, singing song activity, group work analysis and essay writing in pairs did succeed in improving the students’ level of proficiency as can be seen in the progress in the comparison of their pre-post test result.
There seems to be a discrepancy between the successes of implementing the three levels of autonomous learner development activities and the learners’ perception of their level of learner autonomy, as reflected in the learner autonomy questionnaire. In contrast to what has been advocated by Deng (2007) in his paper, the analysis does not imply any positive correlation between students’ improvement in English language proficiency and their perception of their learner autonomy. The statistical data also demonstrates that the students who originally had higher level of proficiency displayed higher improvement in their writing skill by the end of the third development stage. This may suggest that activities promoting learner autonomy may work better for students with higher proficiency. Thus, this may be an instigation of a different area that researchers will be able to work more on. However, without discriminating the statistical analysis, an excerpt which was written by one of the researchers (Pre intermediate) is chosen to close this paper. Discussion on the given point was highlighted, leading to the conclusion that learner autonomy oriented activities are so priceless that teachers may wish to venture into. The teacher realized that she is bearing the fruits of learner autonomy as the students seem to be able to project themselves so confidently even though they started of with very limited English proficiency. In addition, there has also been an incident whereby a student of very limited English initially, took the initiatives to correct his own work on the board before it was commented or corrected by the teacher. Thus, the teacher believes that these are signs of learner autonomy in progress.

Of course, not all are in favour of glory. Towards the final stage, the same author wrote about her biggest concern, which was, some of these learners was still doing the final projects just for the sake of just doing. “One can see that neither willingness nor expertise is obvious in these learners” (PI, personal reflections December 2008). Thus, this is an issue to be analysed. To which extent can these activities help, and what can the teachers do to heighten its impact?

References


Comparison of Examination Questions Against Module Learning Outcomes Using Bloom’s Taxonomy

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Written examination is a conventional yet universal tool to evaluate the student’s performance in a subject area. Whether or not the written examination is able to assess the student’s ability very much depends on the questions presented in the examination paper. A good and reasonable examination paper must consist of various difficulty levels to accommodate the different capabilities of students. It is essential that questions set in examinations appropriately address the module’s Learning Outcomes in terms of difficulty level and subject content. Good examination papers should be at the correct Level for the module, whilst providing opportunities for students of varied abilities to demonstrate their mastery of the subject. This study examined aspects of the Learning Outcomes/assessment task/performance relationship in unseen examinations in a range of academic disciplines. The difficulty level of individual examination questions was ascertained using Bloom’s Taxonomy, which was used to classify the question’s cognitive demands upon students (lower/intermediate/higher order). Results indicate that there is evidence of good practice but also that there are improvements to be made. Further, the paper presents the cross-analysis between student performance, cognitive skill requirements, and module learning outcomes.

Keywords: Bloom’s Taxonomy, Examination Questions, Learning Outcomes

Introduction

In Higher Education (HE), the development of ‘good thinking skills’ in students has always been an important objective and is of particular importance if our graduates are to contribute to the global economy in the knowledge era. The construct does differ somewhat internationally, but in essence it refers to the need for graduates to be able to operate within increasing levels of ambiguity, to be intuitive and creative, and to be able to apply their cognitive skills to a range of problem solving tasks (Barera, 1996). The Dearing Report (1997) which deals with HE in general in the UK, specifies a number of skills that students should possess including “cognitive skills, such as an understanding of methodologies or ability in critical analysis”. Zoller & Tsaparlis (1997) defined higher order cognitive skills (HOCS) as “quantitative problems or qualitative conceptual questions, unfamiliar to the students, that require for their solution more than knowledge and application of known algorithms...Such an application may further require (partially or fully) the abilities of reasoning, decision making, analysis, synthesis, and critical thinking”.

Teaching and assessment activities are designed to facilitate the development of cognitive skills, whilst ultimately student performance in assessment tasks indicates whether the requisite cognitive skill level has been attained. Furthermore, assessment aims to make judgements and decisions about students’ and teachers’ effectiveness (Rosenshine, 1971). Since assessment has such a significant part in the future of students, there is little doubt that any assessment system will determine how and what students learn. Hence, the assessment system will also determine how and what we teach.

The UK’s Quality Assurance Agency (QAA) and Higher Education Funding Council for England (HEFCE) have identified a range of assessment types, including formal examinations, problem solving exercises,
laboratory reports, oral presentations and project work. Individual degree courses aim to employ a range of these approaches, adapted to match the Learning Outcomes of individual modules whilst maintaining an appropriate balance across the course. The latter objective, balanced across a course, is readily and regularly evaluated – for example, by External Examiners and by internal and external quality review processes. The former objective, matched to learning outcomes, is perhaps more difficult to demonstrate and to evaluate, since specific assessment tasks might change from year to year. Similarly, the weighting of Learning Outcomes in the assessment tasks is not always evaluated, such that some Learning Outcomes could be over-assessed whilst others are under-assessed or even overlooked. This leaves one asking questions such as ‘Are we teaching what we think we are teaching?’ and ‘Are students learning what we think they are learning?’

This study examines the relationship between a module’s Learning Outcomes and the cognitive level of examination questions used to assess the module. In addition, student’s choice (where applicable) of examination questions and student performance are considered.

**Assessment Questions**

Questions are an essential element of effective teaching. Daily academics use questions to stimulate students’ thinking and reasoning, while final examination papers assess the retention and application skills. Examination is one of the common methods to assess the knowledge of the students. The examination could be viewed as a feature of social life (Berger and Luckmann, 1966), or as a relatively enduring “social practice” (Fairclough, 2000). The assumption exists that questions relating to application skills should start to dominate the higher academic levels in education, with a corresponding reduction in questions requiring retention skills. Brualdi (1998) suggests that teachers who set HOCS questions foster interaction between themselves and their students. Effective questions should help raise issues that need feedback or about which students need to think (Black et al., 2003), should include informational or problem-solving elements (Leeds, 2000), and require significantly more complex thinking stimulating a student’s mental activities (Chin and Langsford, 2004). Questions cannot be unclear and ambiguous by nature, and should not contain difficult vocabulary, complex syntax or unintentional clues (Popham, 1995).

Biggs (2001) talks about ‘constructive alignment’ where academics support students by aligning teaching methods, assessment tasks, and classroom environment to attain the skills and understanding required of them. When assessing the acquired skills of final-year students, academics cannot create an examination using numerous Lower Order Cognitive Questions (LOCQ - simple recall of information). Similarly, first-year students cannot be expected to answer many Higher Order Cognitive Questions (HOCQ - evaluation of complex problems) and would struggle with Intermediate Order Cognitive Questions (IOCQ – application and analysis), as they are still assimilating new information. Therefore examination papers must be given appropriate attention in terms of maintaining the correct balance between lower, intermediate and higher order cognitive questions. The work presented attempts to distinguish between the different types of questions (namely LOCQ, IOCQ and HOCQ) in light of Bloom’s taxonomy, in an attempt to ascertain whether academics are assessing critical-thinking and problem-solving skills by using effective questions.

**Bloom’s Taxonomy**

Bloom’s taxonomy (1956) is an educational objectives classification system based on the level of student understanding necessary for achievement or mastery of a subject. It contains six levels (Figure 1), with the principle that competence at a higher level implies a reasonable degree of competence at the lower levels. It is possible to pair successive levels to form three groups (lower, intermediate and higher), with qualitatively different assessment standards expected between them:

- **Knowledge and Comprehension.** Informal descriptions of the taxonomy frequently confuse the two lowest levels of the taxonomy. At the lowest “knowledge” level, a student can, when prompted, regurgitate a fact without necessarily understanding its significance. The next level is “comprehension”, which is higher because a student competent at this level understands the significance of a fact. A student manifests that understanding by supplying knowledge differently from how the material was taught. For example, in the case of computer programming, a student could demonstrate their mastery of a concept by correctly identifying its use in computer code not previously seen. This group will be referred to as LOCQ (Lower Order Cognitive Questions).

- **Application and Analysis.** At these intermediate levels, students are able to create and analyse artefacts, but within a well-defined context. For example, in the case of control engineering, a student might consider the
salient features of a given process, and then tune a PID controller. This group will be referred to as IOCQ (Intermediate Order Cognitive Questions).

**Synthesis and Evaluation.** At these highest levels, students are expected to show considerable skill in setting and achieving their own goals, with minimal assistance from an academic, and also show critical evaluation skills. For example, in the case of electronic engineering, students operating at this level are expected to choose their own design project that demonstrates the key concepts of their specialised topic, and then design, implement and test the system against a defined specification. This group will be referred to as HOCQ (Higher Order Cognitive Questions).

![Figure 1. Bloom’s Taxonomy Levels.](image)

**Module Learning Outcomes**

The QAA defines Learning Outcomes as ‘statements that predict what learners have gained as a result of learning’ and the ‘...achievement of which a student should be able to demonstrate’. A Learning Outcome (LO) is a statement of learning accomplishment, which may be the acquisition of knowledge, understanding, or an intellectual/practical skill (Dodridge, 1999). Well articulated statements of intended LOs help both lecturers and students, since they provide a clear explanation of what is required to successfully complete a module: provided there are strong links between the LOs and the assessment.

As long as we can define appropriate LOs, we should see students being motivated to focus on the skills and knowledge that a module is expected to deliver. A module proforma will have its LOs stated similar to that shown in Table 1. The action verb is the important element in stating the LOs that define student learning. In choosing action verbs to define LOs, one should consider those that (a) clearly express instructional intent, and (b) most precisely specify the student performance to evidence that learning has taken place. Unfortunately, action verbs vary widely in their ability to meet both criteria.

<table>
<thead>
<tr>
<th>Table 1 Exemplar Module Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module: Electronic Devices and Systems</strong></td>
</tr>
<tr>
<td><strong>Learning Outcomes:</strong> After completing the module the student should be able to:</td>
</tr>
<tr>
<td>1 Demonstrate knowledge of modern electronic devices and systems</td>
</tr>
<tr>
<td>2 Analyse the performance of advanced devices and systems</td>
</tr>
<tr>
<td>3 Select components and systems for engineering applications</td>
</tr>
<tr>
<td>4 Recognise the future challenge and opportunity in this rapidly changing area</td>
</tr>
</tbody>
</table>

**Comparison Method and Results**

Examination papers provided to second and final-year students were evaluated and categorised into low, intermediate or higher order cognitive questions using the verb list provided by Dalton and Smith (1986). These degree courses considered comprise BEng degrees and BSc degrees in a range of electronic engineering and technology subjects, as well BSc in Psychology, BSc in Dentistry and BSc in the areas of Biomedical and Biochemical.

Jordan (1997), when referring to Liz Hamp-Lyons’ (1990) model of examination questions, highlights four main areas: topic, focus, comment and perspective. For example a question might read as follows:

<table>
<thead>
<tr>
<th>Evaluate</th>
<th>the use of</th>
<th>PIC microcontrollers</th>
<th>in safety critical systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verb</strong></td>
<td><strong>focus</strong></td>
<td><strong>topic</strong></td>
<td><strong>perspective</strong></td>
</tr>
</tbody>
</table>
The verb becomes the attention for this work, owing to its strong link with a cognitive level. However, in some cases the verb does not provide the full picture and one should consider the focus and perspective to fully ascertain the question’s cognitive level. Questions were reviewed to determine the verb in use and thus identify the cognitive level. Examination questions were often assembled from a number of sub-questions, thus the cognitive level identified here was recorded in terms of the marks available for questions or part-questions. Across an examination paper, the marks available for each cognitive level were summed and scaled with respect to the total paper marks. Table 3 provides the results for a representative set of examination papers.

The next analysis conducted was the cognitive level suggested in the module LOs. As with the examination questions, the verb becomes the focal-point. Only LOs associated with the examination were reviewed, thus, for the example module of Table 1 from the four LOs, only LO1, LO2 and LO4 are considered (Table 2), giving results of 0%, 67% and 33% for LOCQ, IOCQ and HOCQ respectively. Thus Table 3 also presents the percentage results for the cognitive levels (LOCQ, IOCQ and HOCQ). The final column of Table 3 offers a suggestion of the match between the expected cognitive levels (from the module LOs) and those assessed in the examination. The amount of agreement has been classified quantitatively as ‘Ideal’, ‘Close’, ‘Acceptable’ or ‘Not matched’, which relates to ≤5, ≤15, ≤25 and ≥25 points difference in terms of the largest value.

Table 2 Link Between Learning Outcomes and Assessment in a Module

<table>
<thead>
<tr>
<th>Assessment Details:</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination: 80%</td>
<td>2.5(hrs)</td>
</tr>
<tr>
<td>Coursework: 20%</td>
<td>Lab. work</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship between learning outcomes and assessment tasks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcomes</td>
</tr>
<tr>
<td>Component 1</td>
</tr>
<tr>
<td>Component 2</td>
</tr>
</tbody>
</table>

The final investigation was conducted on the examination answer books completed by students. For each examination question, the number of students attempting the question and its mean mark were calculated. Table 4 provides the figures for the representative modules in Table 3. Also recorded are the cognitive levels for each question, given as x%:y%:z% for Lower, Intermediate and Higher respectively.

Table 3 Comparison of Cognitive Level of Module Learning Outcomes and Examination Questions

<table>
<thead>
<tr>
<th>Module</th>
<th>LOCQ</th>
<th>IOCQ</th>
<th>HOCQ</th>
<th>LOCQ</th>
<th>IOCQ</th>
<th>HOCQ</th>
<th>Quantitative Match</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example Engineering Modules</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Networks and Communication</td>
<td>83</td>
<td>17</td>
<td>0</td>
<td>75</td>
<td>25</td>
<td>0</td>
<td>Close</td>
</tr>
<tr>
<td>Maths, Signals and Simulation</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>Ideal</td>
</tr>
<tr>
<td>Microprocessor Based Systems</td>
<td>79</td>
<td>21</td>
<td>0</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>Not matched</td>
</tr>
<tr>
<td>Programming and Operating Systems</td>
<td>49</td>
<td>51</td>
<td>0</td>
<td>33</td>
<td>67</td>
<td>0</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Example Biomedical and Biochemical modules</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunology</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>Ideal</td>
</tr>
<tr>
<td>Medical Biochemistry</td>
<td>40</td>
<td>60</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>Not matched</td>
</tr>
<tr>
<td>Medical and Clinical Genetics</td>
<td>40</td>
<td>0</td>
<td>60</td>
<td>10</td>
<td>15</td>
<td>75</td>
<td>Close</td>
</tr>
<tr>
<td>Example Psychology modules</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forensic Psychology</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>25</td>
<td>75</td>
<td>0</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Cognitive Neuropsychology</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>40</td>
<td>60</td>
<td>0</td>
<td>Not matched</td>
</tr>
<tr>
<td>Consciousness and Transpersonal Psychology</td>
<td>17</td>
<td>83</td>
<td>0</td>
<td>40</td>
<td>60</td>
<td>0</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Example Dental Surgery modules</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Diseases</td>
<td>62</td>
<td>38</td>
<td>0</td>
<td>8</td>
<td>28</td>
<td>64</td>
<td>Not matched</td>
</tr>
<tr>
<td>Paediatric Oral Health</td>
<td>17</td>
<td>83</td>
<td>0</td>
<td>0</td>
<td>35</td>
<td>65</td>
<td>Not matched</td>
</tr>
<tr>
<td>Restorative Dentistry</td>
<td>38</td>
<td>62</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>Not matched</td>
</tr>
</tbody>
</table>
Discussion

The work undertaken considered a large number of modules across all the programmes. The results shown in Table 3 and Table 4 are only a sample selection. The results of the cognitive level analysis show that there are examples of good practice in obtaining an excellent match between examination question levels and required LOs. There are occasions where the amount of matching could be enhanced slightly, as well as significant instances where there is little association taking place between questions and LOs.

The work revealed that in terms of examination questions there are few LOs in the Higher Order area, this might appear wrong. However, on reflection this situation can be deemed appropriate since to be successful in the Higher band, students must demonstrate evaluation and creativity which can be rather difficult in an examination if only because of the limited time available. Probably it is more appropriate to assess HOCS through extended coursework and/or projects – which have not been considered in this work so far. There is considerable evidence of the questions on an examination paper being equal to each other in cognitive terms, which is more suitable for testing students.

Table 4 Student Performance on Examinations (with Cognitive Levels per Question)
The rationale for considering which optional examination questions students selected was to ascertain any link
between choice and cognitive level: in effect the research question was “are students choosing the lower
cognitive questions rather than Intermediate or Higher skilled questions?”. For some examinations, the questions
were nicely balanced against each other (for example ‘Cognitive Neuropsychology’ in Table 4) where all
questions were IOCQ. Thus choice was down to question topic. In cases of differences between question levels,
such as ‘Oral Diseases’ (Table 4), a significant majority of students chose Q2 (some 90%) which is Intermediate
& Lower order (60:40) and a majority selected Q3 (67%) which is predominantly Intermediate level, while
Lower order question Q1 was chosen by only 6% of the class. In these instances, there seems to be no obvious
link between student’s choice and the question’s cognitive level.

In terms of student performance on examinations (Table 4), again there appears to be no direct correlation
between question level and the mean mark. For example, ‘Medical and Clinical Genetics’ has a similar mean
mark for Higher order question Q3 and Intermediate order Q4, with 52.1% and 58.2% respectively. This type of
non-conclusive result was frequently found across all the examinations considered. One area that this work has
not considered is whether the module learning outcomes are set appropriately. Quality assurance processes in
Universities should ensure that appropriate learning outcomes are defined. Furthermore, we only considered
examinations and there was no requirement that every module be assessed by examination.

Conclusion

For a graduate, the ability to solve problems creatively and to reason effectively are skills which must be
acquired through appropriate instruction and training. Academics can provide this type of instruction and
training by using a blend of Higher, Intermediate and Lower Order Cognitive Questions in their assessments.
The work presented suggests that on occasions academics are preparing examination questions that match the
required cognitive skills, although there is still much work to be done. At this stage, the work has highlighted
more questions that need to be considered than it has answered.

As stated earlier there was no consideration of the appropriateness of module LOs, which is a major factor in
aligning questions to required skills. Additionally, the raison d'être for students choosing particular questions
needs some investigation, since their selection might be affected not by cognitive level but through other factors
such as the topic, or by the personality of the academic, or a host of other factors.

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An academic literacy approach frames students as active participants in their own learning as they develop their voice and identity. This paper describes teachers’ perceptions of developing and delivering an academic literacies program to TESOL pre-service teachers in a B.Ed twinning program. Data indicates that an academic literacies program is a dynamic process that is ever evolving in order to meet students’ needs. A cornerstone of the program was the continual and open communication between teachers to ensure that students’ needs were met. Additionally, a collaborative approach between twinning partners needs to occur in order for the benefits of the academic literacies program to continue for students.

Keywords: Academic literacies, teacher communication, twinning program

Introduction

This paper describes the perspectives of teaching staff on how processes of academic literacy support have been embedded into the coursework for first year students in a teacher education program in Malaysia, thereby transforming educational practice. The context for this study is a Bachelor of Education twinning program for pre-service TESOL primary teachers, which is jointly organised between an institute of higher education in Kuala Lumpur and a university in Brisbane, Australia. In this twinning program the students complete their foundation year and the first year of their course in Malaysia, followed by two years of study in Australia, concluding with their fourth year of studies in Malaysia. This paper outlines the context and nature of the academic literacy support program which has been developed to assist students to transition from their foundation year into their first year of degree studies within Malaysia. The focus of this research is on how educational practice has been transformed through transnational partnership, leading to the embedding of academic literacy support within the teacher education program.

Literature Review

Key elements of a successful twinning program include good communication, mutual trust and an on-going commitment to the program by both partners (Heffernan & Poole, 2005; Hussin, 2007; McBurnie & Ziguras, 2007). Paramount to fulfilling these key elements is having a clear vision about the on-going needs of the students as they progress through the program. Student needs include developing their academic capabilities to...
complete studies in two different countries and two different cultures. In order to provide the best possible learning experiences for the students, staff in the twinning program need to work closely together to create a seamless transition from learning in one institute to learning in the other. An important area of learning that needs to be targeted by both teaching groups is the development of academic literacy.

Academic literacy can be understood from three overlapping perspectives: as skills, socialisation and academic literacies (Lea & Street, 1998, 2006). The difference between these three models lies in the importance placed upon context and culture. The study skills model treats literacy as a set of cognitive skills to be acquired, so that writing and reading skills are seen as universally transferrable from one context to another. At this level, academic writing is seen as the ability to manipulate particular linguistic elements, such as use of passive voice to achieve an impersonal tone in an essay. From an academic socialisation viewpoint, literacy is understood as a social practice where members are acculturated into the socially accepted conventions regarding academic reading and writing processes valued by that particular community. From this perspective at a Higher Education level, attention will focus on the discourse practices associated with a particular discipline, the expected content and organisation of an educational literature review in TESOL, for example. The academic socialisation approach has the benefit of explicitly teaching the features of academic genres rather than leaving the student to deduce these through their own investigations. However, it also has the risk of becoming an apprenticeship model encouraging students to reproduce conventional genres without question or individual inflections (Lillis, 2003).

By contrast, an academic literacies approach frames students as active participants in the meaning-making process who are mastering socially accepted academic practices in order to then imbue them with their own voice and identity (Hyland, 2002; Kettle, 2005; Leah, 2004). Students become collaborators with their tutors and work closely together with their tutors as part of a dialogic process aimed at increasing the student’s abilities to engage with texts and express their meanings in a range of academic genres (Bakhtin, 1981, 1986; Ball & Freedman, 2004). This scaffolding allows students to engage more fully with their higher education studies and is an empowering process (Devereux & Wilson, 2008; Vygotsky, 1976). From this perspective, all students who have to make the transition between different cultures – both academic and social cultures - can benefit from an academic literacies approach (Gee, 2000, 2005; Cope & Kalantzis, 2008). The academic literacies approach is the approach which informs the academic support program outlined in this study.

The Program

The academic support program described below was developed for 58 first-year students in a 4-year Bachelor of Education twinning degree program. On completion of the Foundation Year of study, it was agreed by the joint Examination Board, comprising both Australian and Malaysian teaching staff that a number of students would benefit from further scaffolding to continue through their program with ease. The academic support program was developed in response to this recommendation. Two different kinds of support were offered in the program: 1) academic support for core units and complementary studies; and 2) language support for students deemed at risk of failing. The academic support component was offered to all students in the program whereas the specific language support applied to only those 12 identified students deemed at-risk. For the language support program, each of the 12 students was assigned an academic tutor from amongst the lecturing staff in Malaysia as specialists to monitor and help them with their language development. Students were advised that they could meet with their tutors at any time for support. The individualised language support program was offered in addition to, and concurrently with, the broader academic support program which, as mentioned above, was offered to all students. The participation of the Australian teaching team in the academic support program took the form of providing a number of academic literacy workshops for students when visiting the Malaysian campus, for example, sessions on plagiarism and deconstructing a research article, and maintained an on-going dialogue with academic support tutors through emails and a wiki.

At the commencement of their Year 1 studies in 2009, the 58 students in the B.Ed program completed a survey to determine particular areas of need for academic and language support. The data from this survey, along with the final examination results from Foundation Year formed the basis of the support program. Four areas of support in particular were identified as areas where students needed extra tuition: critical reading practices, accessing information competencies, academic writing genres, and referencing and paraphrasing. Accordingly a program was set up in which students would attend a series of 2-hour weekly workshops, which would be delivered throughout the two semesters of Year 1. Topics for the workshops included such areas as critically reading a literature review, structuring an essay, reflective writing and using APA referencing. Tutors applied a range of strategies to support academic and language development such as identifying and discussing main points of a reading, brainstorming ideas on the requirements of an assignment, accessing and analysing relevant
information, developing appropriate academic structure in writing assignments, and responding to tutor feedback to improve academic skills.

A key aspect of their academic and language support was the establishment of a drafting process with the students, which allowed tutors to cater for individual differences in their feedback sessions. In the drafting process, students were encouraged to submit a draft of their assignment to their tutor to read. Students would then make an appointment with their tutor to discuss how they could improve their drafts with suggestions (scaffolding) from their tutors (for example, with language errors). Tutors consciously made the decision not to edit students’ work. Instead they took the stance that it was the students’ responsibility to identify areas where improvements could be made. The students then had the further responsibility to revise their drafts, incorporating the targeted improvements. Such tutor support was designed to look at students’ academic and literacies capabilities in a holistic rather than fragmented way where students were encouraged to see how their skills and abilities could be transferred from one subject to another and from one assignment to another. There was no attempt in the language support program to discuss the academic content of assignments as this was the academic tutor’s territory. The academic and language support programs were aimed at achieving two main objectives: 1) scaffolding students in their learning; and 2) developing students’ identities as undergraduates with the needed attributes to achieve success in their studies.

Whilst these two programs offered a number of innovations, it is not the intent to discuss the content of the academic support program in more detail here. Instead we wish to focus on an often ignored aspect of the academic support dialogue; that is, the insight and understandings of the tutors as participants in the academic support process. As explained at the outset of this paper, the focus in this study is on how embedding academic literacy support within the B.Ed twinning program represents a change of educational practice. However it is also important to determine the effectiveness of the program. Therefore, documentary analysis of the Academic Support Program Report (Teo, 2009) was conducted as was written feedback from tutors and students in the program. A purposely written questionnaire on academic and information literacy was delivered to the 58 students at the beginning of the school year and again mid-year after students had completed one semester of the program. Results from the survey indicated that there was a general improvement in students’ academic and literacies capabilities.

Our interest for this paper is, however, in exploring how this new practice of academic and language support was conceived and instituted by the teaching team in conjunction with the twinning partners. In order to explore these aspects, the teaching staff in Malaysia participated in a group interview with the teaching staff visiting from Australia, at the end of the Year 1 program in 2009. In all 6 Malaysian lecturers participated in the focus group interview. Questions were open-ended asking such things as: What planning did you do to prepare for the academic and language support program? How did you control for consistency when students came for support? What areas did you find where students improved and in what areas might they need further help? Does the program need to be adjusted in any way? An interpretivist stance (Williams, 2008) was taken wherein the personal perspectives of participants were central to understanding the program. The group interview allowed tutors to disseminate their teaching practices as a way to share their ideas, beliefs, motivation and attitudes about being in the program. The research seeks to explore the ‘how’ and ‘why’ in relation to the development of the program.

**Gathering Tutors’ Feedback – Dialogue between Partners**

The focus of the group interview was to gather the tutors’ feedback about the academic and language support programs. All the teaching staff from Malaysia in the interview had been tutors in both the academic support and language support streams. In this dual role tutors were able to identify more general areas of needed support as well as individual areas. Below are data gleaned from this end-of-year interview.

One tutor described the two streams of the program as running parallel with each other in that whilst the academic support program supported students in understanding the content of subjects and assignments, the language support program provided specific help for the 12 students at-risk in developing appropriate reading and writing skills for their studies. Rather than taking a generic one-size-fits-all approach for language support, one tutor described their program delivery as catering to the individual needs of students. In other words, students were different in their level and type of needs. Tutors worked individually with each student according to the student’s problem area, for example, their inability to express ideas coherently in English. Tutors then worked out strategies to assist students depending on their needs.
A specific aim of the tutors was to encourage students to become independent in their learning. To accomplish this end several of the tutors mentioned how they refused to do the work for students (for example, editing draft copies of assignments). Instead different strategies were used to allow students to take responsibility for their work. One strategy was to write comments on students’ drafts, suggesting points that students needed to attend to, but not fixing the work per se:

I make comments. Because I want them to be independent in their editing...I just make comments...make sure your tenses are not jumbled up, reports are supposed to be in the past tense, you know, things like that

[Academic Support Tutor 4]

The initiative has to come from them to improve the language, so we can’t be...correcting every sentence. You won’t actually help them; it won’t help

[Academic Support Tutor 4]

Other tutors described how they made students become more responsible for their learning by setting time limits on the help they could offer. It was up to the students to meet these time limits or not:

I’m not going to accept last minute drafts, I mean like the day before submission date...it’s impossible for me to read

[Academic Support Tutor 5]

Another strategy used was to have students compare their first draft of work with an edited draft and discuss with their tutors where they see they have made improvements:

They take away the draft with my written comments and they come back with that new draft and we talk about how he has improved or whether he has, you know, whether it does not respond to the comments in the right way

[Academic Support Tutor 2]

I read the sentence [to the student] which I couldn’t understand and I asked the student to read the same sentence together. Then, I...tell her, “I don’t understand what you are trying to tell me so what is it you are trying to say?” So when she tells me verbally I could understand, so I will tell her, “That’s exactly the thing you should write.” So that’s my approach because I don’t want to write it for her.

[Academic Support Tutor 3]

I think in the discussion, rather than telling them – this is what I mean – I think the question would be to actually get them to think about things

[Academic Support Tutor 2]

Some tutors described having the students working in small groups to offer peer tutoring and support:

They write essays and they make copies and everyone [in the group] looks at it and everybody identifies, you know, what’s good, what’s bad and how to improve expression for example. I think it’s good, you know, peer learning

[Academic Support Tutor 1]

All the tutors agreed that the support program was holistic in that the students were able to identify that the skills they developed for one unit of study could be applied to other units. It was suggested that because the workshops for the academic program were closely tailored to the assignments in each unit, students were able to see how their learning could be applied in real world situations, rather than learning abstract theory or abstract ideas then having to try to work out for themselves how these concepts fit into the work they needed to produce for assignments.

Tutors expressed that the workshops they offered to students were beneficial in improving students’ standard of work:

...In semester 2 [2009] we started off with the referencing skills and did it in stages. I thought that those workshops actually helped them to organise [their ideas] because it was very clear in the assignments and also the exams – you can see that they have these clear thoughts now

[Academic Support Tutor 3]

They are growing, I mean, they have become more conscious and that before they submit the draft they have gone through a series of self-editing, peer editing so by the time it comes to us...it’s easy to read as compared to. I think, the earlier part where you spend time wondering how much time you need to spend on correcting the errors

[Academic Support Tutor 2]
From the comments of the tutors during the interview, it became clear that they invested not only their time and expertise, but also shared the students’ sense of achievement as they saw benefits accruing from the academic support program:

*I keep telling [name of tutor] that actually I’m very proud because I think I’ve seen the growth, that with the subsequent assignments you see that there is that conscious effort*

[Academic Support Tutor 5]

One of the tutors attributed one of the key strengths of the program to the fact that the tutors cooperated as a group, sharing their insights and confirming their strategies with one another. This cooperation and group focus on the role of the academic tutor was seen as a beneficial change from the usual educational practice:

*the difference - what we have done, what we are doing right now, is actually clarifying the expectation of the academic tutor and when we carry out workshops for different assignments for the unit it is done as a team and its done with a whole cohort so everyone has equal access to the key information*

[Academic Support Tutor 1]

In all, the tutors agreed that the academic literacy program was beneficial not only for improving student capabilities but also in achieving overall greater success in the B.Ed program. Based on the success of the academic and language support program in Malaysia, the Australian teaching partners asked what recommendations the Malaysian team could offer in regards to offering students similar support for their 2nd and 3rd years of study in Australia. The Malaysian teachers suggested several things to consider, in particular the benefit of having Malaysian students working with local students as part of the support program:

*Perhaps to get the local students to mix with them, and when you have the support program you bring in the local students, sit with them in a group or maybe you divide them into two or three students...so maybe that will help because they have that immediate relationship*

[Academic Support Tutor 3]

Yeah, because I believe that in the library there is final year students [Australian] appointed as peer tutors; yea, the PAL system. I think that would be a good idea

[Academic Support Tutor 2]

The Malaysian teachers also emphasised the importance of maximising opportunities for using the second language within the immersion experience:

*What I notice about students is that among themselves they would lapse into Malay language and I think you would just have to keep on reminding them that they should actually immerse themselves in the [English] language*

[Academic Support Tutor 2]

Other suggestions included connecting students with foster (host) families, host lecturers or the idea of staying with weekend families to help students adjust to living in a new country. Whilst the idea of having students living with host families is not feasible due to the requirements that they live on campus for their first year in Australia, the Australian twinning partners have included other recommendations in their programming. In particular the academic literacies program in Australia will continue to focus on developing students’ voices as an essential element of their growing academic identities. It is expected that continuing students’ academic and language support will assist in helping them transition into their Year 2 studies in the Australian context. Indeed, this process has already begun with academic support structures in place.

**Conclusion**

This paper has discussed how the teaching teams of the partner institutions, one in Malaysia and one in Australia, collaborated to embed academic literacy support within the first year of a B.Ed twinning program. Collaboration took the form of initially proposing the academic literacy program during joint examination board comments. The content and focus of the program were developed in joint consultations at scheduled meetings throughout the year, whilst the day-to-day organisation of the program was devised and organised by the Malaysian teaching team. Members of the Australian teaching team also took part in the program, leading several workshops for the students targeting academic literacy. These workshops were shared with other departments and other ITEs which proved to be one of the fruitful results of this joint venture between the twinning partners. Feedback from the Malaysian tutors indicated that an effective academic and language support program needs to be flexible and continually evolving to meet the ever-changing needs of students. Whilst this study explores the context of only one particular twinning partnership, we feel that this approach can
be applied to other international partnership degree program. The academic literacies approach has allowed teaching staff to develop a productive relationship with students in encouraging them to become independent and responsible learners, developing their voices in diverse academic and cultural contexts.

References

The Contribution of Listening Comprehension to Second Language (L2) and Foreign Language (FL) Learning

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Listening comprehension is a central aspect of learning a language. Yet of the four dominant macro-skills, it is often difficult and inaccessible for second and foreign language learners due to its implicit process. The secondary skill, speaking, emerges as listening is processed cognitively. Aural/oral skills precede the graphic skills, such as reading and writing, as they form building blocks in language learning process. Issues related to linguistic skills such as parsing, encoding and decoding units enable interpretations, and pausing (reflections) bequeathed to spoken language have received considerable attention in language learning literature over the years. However, despite the importance, listening comprehension as a foundational skill is still a neglected area of research. Comparing with other language skills, listening controls more than half of our daily communications but gains the least attention in classrooms. The literature in language learning has revealed that listening has a primary importance in both first and second language learning. To investigate the role of listening comprehension skill, the outcome of 701 Iranian students undertaking International English Language Testing System (IELTS) in Tehran demonstrates the correlation between listening comprehension and language learning proficiency. A positive correlation appears between listening performance and with other skills. In other words, the higher listening scores the better foreign/second language proficiency.

Keywords: Listening comprehension, Foreign language, Second language, IELTS, Language learning skills

Introduction

Whilst a substantial amount of research has been conducted in reading and writing skills, investigators (Hunsaker, 1990; Linebarger, 2001; Morris & Leavey, 2006) have underscored the role of listening skill in human learning and development. Indeed, listening skill provides the primary impetus to initiate first, second and foreign language learning and later the medium of communication to sustain the long and often tedious learning process. Without adequate listening input, it is more likely for individuals not to accomplish long-term goals. The perception of the world and interpretation of experience occurs through listening (Linebarger, 2001). As they grow to school age, the dominance of this skill appears noticeable. Hunsaker (1990) found that more than three quarters of what children learn in school happens through listening in the classroom. Closely aligned with this, is the study conducted by Gilbert (2005), which demonstrated the prominence of listening in schools. The researcher found that K–12 students spend between 65% and 90% of their school time in learning, which is achieved, in fact, through listening trajectory. Thus, the current study addresses the importance of listening comprehension widely in human learning and narrowly in second language acquisition. Hereafter, the significant association of listening with other language skill – speaking, reading and writing is described. This paper begins with a broad discussion of background on listening research and then ends with the role of listening in second and foreign language learning.

Background

Research has found that improvement in listening skill has a positive effect on other language skills - reading, writing and speaking. To illustrate, Morris and Leavey (2006) conducted a study focusing on preschoolers’ phonological development. The study reveals that listening skill instruction improve preschoolers’ phonological awareness. Similarly, two other studies found out that the listening skill instruction assists middle school students to improve their reading comprehension (Badian, 1999; Bergman, 1999). In addition, the outcome of Bergman’s (1999) study revealed that listening and reading stories at the same time lead students to improve their reading comprehension scores. In addition to the impact of listening skill on reading comprehension, a study reported by Berminger (2000) showed that students in Grades 1 – 6 improve their spelling significantly.
through aural skill instruction whereas there is a high correlation between Grades 1 - 3 and the improvement of narrative and expository composition in Grades 2 and 3 through listening instruction.

Given the prominence of listening comprehension in human learning, in general and with a particular focus on language learning, many investigators, such as Goh (2008), Feyten (1991), Pinell and Jaggar (2003), Janusk (2002), Mendelsohn (1998), Swanson (1997) and Vandergrift (2007) demonstrate that listening skill is tested rather than taught in classrooms. A study conducted by Feyten (1991) focused on three enquiries (i) whether listening skill is worth paying more attention in foreign language learning (ii) or improving listening skill leads to higher achievements in language learning and (iii) if there is a relationship exists between listening ability and oral proficiency skills. The results showed that the relationship between the overall listening ability and effective foreign language acquisition is statistically significant. Particularly, a statistically significant relationship exists between listening ability and overall foreign language proficiency; between listening ability and foreign language listening comprehension skills; and between listening ability and foreign language oral proficiency skills. Listening is at the heart of language learning, but it is the least understood and least researched skill in language learning and is often disregarded by foreign and second language instructors (Field, 2008). As Oxford (1993) appropriately notes, “in many instances listening is treated like a neglected stepchild” (p. 205). The studies presented above shows multiple significances of listening skill in learning in general with a particular focus on second and foreign language learning. Now that listening is crucial for human learning, it is worthwhile to seek the origin of this fundamental skill.

The Origin of Listening Skill Studies

The significance of listening skill in effective communication has been recognised for a century. Rankin (1926) conducted a study and found that listening skill was the most dominant skill for the mode of human communication. However, there were no more similar studies until the 1940s. The base of listening inquiry was primarily laid academically in the late 1940s and the founders (James Brown, Ralph Nichols and Carl Weaver) of the listening skill were considered as the “fathers of listening” (Vocile, 1987). Listening skill was taken into the second and foreign language research field in the mid 20th Century and many researchers put listening as the focus of their studies. After half a century, a professional committee International Listening Association (ILA) was established in 1979 to develop listening skill (Feyten, 1991). Knowing how to entail listening instruction and assessment in the school syllabi was the main target of the pedagogy. Steven (1987) pointed out that many studies provide a focus on either understanding listening comprehension or listening critically – agree or disagree with oral input.

Similarly, Floyd (1985) defines listening as a process entailing hearing, attending to, understanding, evaluating and responding to spoken messages. He further believes that listeners should be active participants in communication process. The nature/purpose of listening skills varies as the context of communication differs. Wolvin and Coakley (1988) propose five different kinds of listening. First, discriminative listening helps listeners draw a distinction between facts and opinions. Second, comprehensive listening facilitates understanding oral input. Third, critical listening allows listeners to analyse the incoming message before accepting and rejecting it. Fourth, therapeutic listening serves as a sounding board and lack any critiques, e.g., advising. Finally, appreciative listening contributes listeners to enjoy and receives emotional impressions. All the varieties of listening help to demonstrate that listening is an active process rather than a passive product. The authors define the process of listening as making sense of oral input by attending to the message. Thus, this study adopts the second definition of listening - understand the oral input mentioned by Wolvin and Coakley as a tool to evaluate the research assumption. The current study seeks to delve into the correlation between listening and other skills in International English Language Testing System.

The Role of Listening in Second/Foreign Language Learning

Language development involves four fundamental and interactive abilities: listening, speaking, reading and writing. The attempt has widely been made to teach four macro skills in second and foreign language for more than 60 years. Berminger and Winn (2006) emphasise that external and internal environment interacts with functional systems to a certain extent, which the nature-nurture interaction at birth evolves over the course of time. The question is how much and how long the basic skill of listening gains attention in second and foreign language learning while listening is recognised to play a significant role in primary and secondary language acquisition (Ellis, 1994; Faerch & Kasper, 1986). In the 1970s, Communicative Language Teaching (CLT) method was introduced to develop language learning proficiency. Some prominent researchers (Asher, 1977; Krashen, 1982; Omaggio, 1986; Postovsky, 1975) highlighted the significance of listening in the pedagogy. Krashen (1992) argues that language acquisition highly depends on the decoding process of making sense of
incoming messages. Language acquisition never occurs without access to the comprehensible language input (Rost, 1994) because in addition to visual learning, more than three quarters (80%) of human learning occurs through listening direction (Hunsaker, 1990). Returning to language acquisition, Nunan (2003) suggested that listening is “the gasoline that fuels the acquisition process”. Thus, the main reason experts emphasise the significance of listening in language acquisition is the frequency of listening in language development. However, much of the relevant research incorporated listening as an inevitable medium to drive primary and secondary language acquisition. What is more, none of them focuses on the relationship between listening skill and other language skills – speaking, reading and writing in English as Foreign Language (EFL). The current research study aims to fill this gap by providing empirical data obtained in a large-scale investigation of around 750 applicants taking the international known language proficiency test – IELTS administered in the capital of Iran, Tehran. What follows are discussions about each single language skill associating with listening skill.

Much debate continued to prove the increasing influence of listening skill on the other three language skills – speaking, reading and writing. To illustrate, Rost (1994) proposed three reasons showing the essential role listening plays to improve speaking skill. First, spoken language provides a means of interaction for the learner. Because learners must interact to achieve understanding, access to speakers of the language is essential. Moreover, learners’ failure to understand the language they hear is an impetus, not an obstacle, to interaction and learning. Second, authentic spoken language presents a challenge for the learner to attempt to understand the language as native speakers actually use it. Third, listening exercises provide teachers with the means for drawing learners’ attention to new forms (vocabulary, grammar, new interaction patterns) in the language (pp. 141-142). Listening and reading have much in common in terms of input processing. Pearson and Fielding (1991) linked listening with reading skill. They argued that like reading, listening involves phonological, syntactic and semantic orchestration of skill and the knowledge controlled by cognitive processes at the same time. Further, very recently, a study conducted by Yalcinkaya, Muluk and Ashin (2009) shows that the foundation of receptive (reading) and expressive (writing) skills is built upon aural (speaking) and oral (listening) skills. They argue that written language skills hardly develop without realising the infrastructure of a language - the sounds. They conclude that listening ability strongly influences speaking, reading and writing ability.

This review of the research argues that limited evidence has been found in assessing the significance of listening at large and various listening effectiveness in foreign language learning, in particular. The review also demonstrates that there are inadequate investigations focusing on the contributions of listening skill bestowing to other language skills. Afterward, having created these composite IELTS’ discrete and overall scores, I followed a correlation design to measure the relationship between listening and other language skills – speaking, reading and writing.

**Research Question**

In light of the above discussions on the significance of listening skill in language learning, in general and second and foreign language, in particular, the limitation still exists on acknowledging listening skill in English as Foreign Language (EFL) learning in Iran. Thus, the purpose of the current study is to examine the relationship between listening scores and speaking, reading and writing scores in IELTS. In particular, the proposed research addressed the following question:

- What is the relationship like between listening skill proficiency and that of speaking, reading, and writing proficiency skills in English as Foreign Language (EFL) through IELTS assessment?

**The Purpose of the Proposed Study**

This paper brings the attention to rarefied and critical skill in language learning, namely listening with a particular focus on EFL learning in Iran. There is some initial evidence demonstrating the development of listening skill, which leads to the efficiency of second and foreign language development. However, more research is needed on examining the significance of listening skill in improving other skills, such as speaking, reading and writing in second and foreign language learning, which indeed assists language instructors in drawing particular attention to this basic skill in the classroom. In what follows, I ask the proceeding question: What is the relationship like between listening skill proficiency and that of speaking, reading, and writing proficiency skills in English as Foreign Language (EFL) through IELTS assessment?
METHOD

All of the participants were Iranian and spoke Persian as their first language. To test the research assumptions, all the participants undertook the academic training for International English Language Testing System (IELTS).

Participants and Context

The participants in the study were 701\(^2\) English for Speakers of Other Language (ESOL) applicants, with an age range of 24 - 37 in the capital of Iran, Tehran, who were planning for either continuing their college education or beginning their professional careers in an English speaking country in spring 2009. The participants IELTS scores in detail were downloaded from www.ieltstehran.com. As a perennial education curriculum in middle and high school, all students practice English reading and writing skills for three hours per week. All students in Universities in Iran depending on the course of studying must pass 3-5 English courses in reading skill in light of improving scientific English literature in their specialised fields.

Instrument

International English Language Testing System (IELTS) was the only research instrument measuring the relationship between listening skill and other language skills – speaking, reading and writing in EFL.

IELTS

IELTS provides a profile of a candidate’s ability to use English language. Candidates received scores on a Band from 1 (Non User) to 9 (Expert User). Candidates received a score for each test component – Listening, Reading, Writing and Speaking.

Data Analysis

Calculating simple correlations examining the relations between listening as a basic skill and speaking, reading and writing, the current study used SPSS 17 for windows for the statistical analysis. The aim of correlation analysis in this proposed study is that examining applicants IELTS scores in Iran confirms the research hypothesis, which is a relation exists between listening and other language skill e.g., speaking, reading, and writing or otherwise. As part of descriptive data analysis, an ANOVA, Post hog Comparisons, a Pairwise Correlation Coefficient and a Scatter plot were used to measure the relationship between listening skill scores and other language skills scores – speaking, reading and writing as well as the overall scores.

Results

A summary of the IELTS scores analysis is presented in this section. The Table 2 displays the descriptive statistics for each language skill. The lowest attainment is for speaking with a mean of (5.350) and standard deviation (.993). In contrast, reading with the mean (6.679), and standard deviation (.797) shows the highest achievement. As indicated on Table 2, listening entailing the mean (5.515), standard deviation (1.069) places one before the last skill – writing score with the mean (6.130) and standard deviation (.813). In brief, participants scored lower on aural/oral skills than orthographic skills in IELTS.

| Table 1. |
|---|---|---|---|---|---|---|
| Descriptive analysis of all language skills |
| N | Mean | Std. Deviation | Std. Error | Minimum | Maximum |
| Listening | 701 | 5.514 | 1.069 | .040 | 1.00 | 9.00 |
| Speaking | 701 | 5.350 | .993 | .037 | 1.00 | 9.00 |
| Reading | 701 | 6.679 | .797 | .030 | 3.50 | 9.00 |
| Writing | 701 | 6.130 | .813 | .030 | 1.50 | 9.00 |

A one-way between – group analysis of variance (see table 2) was conducted to explore the relationship between listening and speaking, reading and writing skills. IELTS’ scores are divided into three groups according to different language skills (listening and speaking, listening and reading and listening and writing). There is a

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\(^2\) There were actually 746 participants, but 45 discrete and overall IELTS scores were deleted due to their extreme scores.
statistically significant difference at the \( p \leq .05 \) level in scores within three groups: \( F (2800) = 302.780, p = .000 \).

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>( F )</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>778.672</td>
<td>3</td>
<td>259.557</td>
<td>302.780</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2400.289</td>
<td>2800</td>
<td>.857</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3178.961</td>
<td>2803</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The post hoc comparisons using the Tukey HSD test in Table 3 indicates that the mean score for the three groups (see also, table, 1) - Listening (\( M = 5.515, SD = 1.069 \)) was significantly different from Speaking (\( M = 5.350, SD = .993 \)), Reading (\( M = 6.679, SD = .797 \)) and Writing (\( M = 6.130, SD = .813 \)).

<table>
<thead>
<tr>
<th>Categories</th>
<th>Categories</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening</td>
<td>Speaking</td>
<td>.16405*</td>
<td>.04945</td>
<td>.005</td>
<td>.0369 .2912</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reading</td>
<td>-1.16548*</td>
<td>.04945</td>
<td>.000</td>
<td>-1.2926 -1.0384</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Writing</td>
<td>-.61626*</td>
<td>.04945</td>
<td>.000</td>
<td>-.7434 -.4891</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

However, the relationship between listening and other language skills is closely intertwined. As Table 4 indicates, the relationship between listening scores and speaking, reading and writing skill scores was investigated using Pairwise correlation coefficient in table 4. Preliminary analyses were performed to ensure the violation of assumptions. There was a strong, positive correlation between the variables, listening and speaking \( (r = .629, n = 701, p \leq .000) \), reading \( (r = .729, n = 701, p \leq .000) \) and writing \( (r = .631, n = 701, p \leq .000) \). The correlation between listening and the overall IELTS scores \( (r = .893, n = 701, p \leq .000) \) is even stronger.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening</td>
<td></td>
<td>.729**</td>
<td>.000</td>
</tr>
<tr>
<td>Reading</td>
<td>.631**</td>
<td>.000</td>
<td>701</td>
</tr>
<tr>
<td>Writing</td>
<td>.629**</td>
<td>.000</td>
<td>701</td>
</tr>
<tr>
<td>Speaking</td>
<td>.893**</td>
<td>.000</td>
<td>701</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td>701</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

**Discussion**

Listening is the basic bricks and mortar of a language acquisition. Within my research paradigm, I expected the listening scores in IELTS to have the stronger association with the second language proficiency in overall scores. Based on the results of the study, the correlation coefficients confirmed this prediction. The correlation between audio skill with other language systems – speaking, reading and writing as well as overall IELTS scores is large. Despite a close relationship between aural/oral skills in nature, the correlation between listening and reading, however, was stronger than listening and speaking skill scores. Writing is the last skill learned by first and second language learners. However, the correlation between listening and writing scores is very close and even more than the correlation between listening and speaking. Thus, reading, due to its common comprehension features with listening had the highest correlation score in IELTS.
Sub-theme A: Methodologies and Strategies in Learning, Teaching and Assessment

Given that I found many studies (Ellis, 1994; Nunan, 2003; Richards, 2005) showing the multiple influences of listening in primary and secondary language learning, the outcome of this study points out that listening scores have a large correlation with EFL proficiency. Emphasising the relationship between listening and writing skills – one starts acquiring at birth but the other at school age in first language, the EFL test result confirms the core of Shanahan’s (2006) discussion about the impact of listening skill instruction on writing development. The multiple correlations in the current study focussed on one dependent variable – listening and three independent variables – speaking, reading and writing as well as overall scores accounting for interrelationship of the independent variables. The analysis produced multiple coefficient of 0.893 (p ≤ .000). This result is remarkably high to consider the importance of listening skill in EFL classrooms. In the end, the finding – the higher the listening score, the better the speaking also supports James (1985) and Rost’s (1994) research suggesting three essential roles listening plays to improve speaking skill.

Returning to a high correlation between listening and reading, Dörnyei (2001) maintained that focusing on the situation contributes significantly to the motivation of a particular task. This opinion aligns with participants in this study who benefit from reading skill in English at middle, high schools and college as a subject. The finding of this study supports the fact that the situational environment is an important element influencing language learning. This could not be seen as a surprising result showing that participant, due to devoid of English language exposure in Iran, applicants score aural/oral skill less than orthographic and expressive skills in this study. Similarly, the result of this study confirms Hulstijn (2001) argument in psycholinguistic perspectives in that having access to basic knowledge of vocabulary stored in long-term memory contributes learners to the systematic rehearsal and other cognitive strategies. Further, the finding of this study demonstrating the close relationship between listening and reading scores is consistent with the results of Badian (1999) and Bergman’s (1999) research. Thus, applicants’ background knowledge of reading assisted them to score the highest in the reading band.

Conclusion and Future Research Direction

This study examined the relationship between listening and other EFL skills – speaking, reading and writing as well as overall scores in the International English Language Testing System. The data collected for the purpose of this study were the results announced on the IELTS centre site in Iran. The significant positive correlations I found between listening and other language skills are particularly strong within the context of EFL providing evidence that listening skill matters even in situation where English is not the primary language. This finding is important because there are few studies reporting the significant correlation between listening skill and EFL language proficiency. Closely aligned with the finding, there is a very strong body of support for syllabus designers and English language instructors to frame the domain of listening skill attention in the classroom instruction. Even though this study provided a focus on EFL listening relationship with other language skills without examining the impact of EFL listening skill instruction, the results are strong enough to guarantee further research looking at the impact of learning strategy on EFL language proficiency.

References


Reflective Thinking Among Teachers: A Way of Incorporating Critical Thinking in the Classroom?

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The concept of reflective thinking among teachers as a way of incorporating critical thinking in the classroom has not been fully explored. Teachers perceive that critical thinking skills need to be taught. However, research has shown that teachers may not know how to bring this about. In this study a total of 60 participants from institutions of higher learning volunteered to answer a questionnaire to determine the level at which they reflected on their teaching practices. It was found that most of the teachers were not reflective about their teaching practices. They did not seem to practise the four learning processes: assumption analysis, contextual awareness, imaginative speculation and reflective skepticism which were indicative of thinking practices that research have found to enhance critical thinking. Further studies need to be carried out on how to bring about reflective practices among teachers and how it would enhance the quality of their lessons.

Keywords: Reflective Teaching, Critical Thinking

Introduction

There has been a concerted effort among universities and institutions of higher learning to encourage students to think critically. However, as evidenced by researches (Choy & Cheah, 2009; Rudd, 2007; Black, 2005; Vaske, 2001), students may not be able to think critically because their teachers are not able to think critically themselves. Added to this, critical thinking is often equated to higher order thinking skills and is within the last steps of Bloom’s Taxonomy: analysis, synthesis and evaluation (Bloom, 1976). Teachers often find difficulty actually incorporating these higher levels of learning into their lessons. (Choy & Cheah, 2009). In order to help with the process of critical thinking, reflective thinking is thought to enhance this process. Reflective thinking (Dewey, 1933) is part of the critical thinking process specifically referring to the processes of analysing and making judgments about what has happened. Dewey suggests that this form of thinking is an active, persistent consideration of a belief or suggested form of knowledge, of the grounds that support that knowledge, and the further conclusions to which that knowledge leads.

Learners who think reflectively become aware of and control their learning by actively accessing what they know, what they need to know and how they bridge that gap during learning situations (Sezer, 2008). Therefore, critical thinking involves a wide range of thinking skills leading towards desirable outcomes and reflective thinking helps to integrate these thinking skills by making judgments about what has happened (Shermis, 1999). An important role played by reflective thinking is to act as a means to prompt the thinker during complex problem solving situations because it provides students an opportunity to step back and think about how they actually solve problems and to use the best set of strategies to achieve their goals (Rudd, 2007). Therefore teachers who are able to use reflective practices will themselves be more attuned to using this strategy to help students think critically (Shermis, 1999). However, it must be noted that reflective thinking will facilitate critical thinking and is a practice that must be encouraged among students. Critical thinking does not happen as a result of reflective thinking.
Teacher Reflective Thinking Practices

According to Boody (2008), teacher reflection can generally be characterized as: retrospection, problem-solving, critical analysis and putting thoughts into action. For this review, we will discuss reflective thinking based on the characteristics suggested by Boody: a) reflection as retrospective analysis, b) reflection as problem solving, c) critical reflection of self, and d) reflection on beliefs about self. Each of these will be discussed in turn.

Teacher reflection as retrospective analysis (ability to self-assess).
This approach takes reflection as bending thoughts to incorporate prior experiences and how these experiences could influence the current practices of teachers. This retrospective analysis also includes the ability to self-assess which is based on a model of development in reflective thinking by Hamilton (2005).

Teacher Reflection as a problem solving process (awareness of how one learns)
Teacher reflection can also be thought of as taking the necessary steps to analyse and articulate problems that a teacher may be having in the classroom before taking action on the problems. This could also allow for more constructive action to be taken rather than implementing a quick fix to the problem (Boody, 2008). Schon (1987) talked about teacher reflection as reflection-in-action and reflection-on-action. Many teachers fail to connect between their teaching and what they are actually practicing and vice versa (Rudd, 2007). These teachers can often teach the facts of a subject well but will often not be able to make a bridge for students between what they learn and how it is used in practice.

Critical reflection of self (developing continuous self improvement)
According to Brookfield (1988), in order to be a critically reflective teacher there are four learning processes that can be engaged: assumption analysis, contextual awareness, imaginative speculation, and reflective skepticism. In summary, critical reflection can also be thought of as the process of analysing, reconsidering and questioning experiences within a broad context of issues like ethical practices, learning theories and use of technologies (Boody, 2008). Riddell (2007) noted that examination of one’s assumptions is not a simple task and teachers must be able to ask themselves critical questions about their assumptions and actions.

Reflection on beliefs about the self
According to Choy and Oo (2007), the feelings and beliefs that teachers have towards themselves and others will play a part in how they teach. According to Williams and Burden (1997), teachers are highly influenced by their beliefs, which are closely linked to their values and their world views. These beliefs have great influence in the way they plan their lessons and deliver them.

The Present Study

Many researchers have highlighted that reflective teachers encourage students to think critically. The current investigation focuses on the reflective practices of teachers when planning their lessons, the assumptions these teachers have of their students and their work. However, there is little attention given to the type of reflective thinking that teachers have of themselves. Therefore, this research attempts to study the reflective practices used by teachers and how it influences their teaching.

The research questions underpinning this study are:
1) Are teachers practising reflective teaching?
2) How do teachers think of themselves and their teaching practices?

The research questions led us to the use of both the interpretive approach as well as statistical analysis of the data obtained. The responses to the questions were analysed and interpreted by allowing the personal ‘grasping of meaning’ from the data generated (Radnor, 2002). The statistical analysis was done with a frequency count of the responses to the questionnaire.

A questionnaire with Likert scale was used to generate data in this investigation. The questionnaire consisted of 33 questions where participants were asked to rate on a scale of 1-5(1=strongly disagree and 5=strongly agree). The topics for the questionnaire were created based on research by Hamilton (2005) on the development of reflective thinking. The statements covered three major areas of development: ability to self-express, awareness of how one learns and developing lifelong learning skills. We decided to add another area which we perceived as important: influence of belief about self. Each of the four areas of development was further broken down into sub-sections. The statements on the questionnaire were structured to express the four areas of development.
Each statement was then categorised to reflect if the statement was at the introductory level (I), of reflective thinking, intermediate level (In) or advanced level (A).

The sample taken for this study was made up of teachers teaching in institutions of higher learning in Malaysia. They were asked during the teacher development workshops conducted by us and also through e-mails. The teachers came from various disciplines. There were a total of 60 participants who responded to our questionnaire.

Results

Analysis of the data was done using the frequency of responses to each of the 1-5 scale on the questionnaire. The results were used to answer the three research questions (RQ). Only responses with a rating of 5 will be discussed as this shows strong agreement with the statement used to express a particular aspect of reflective thinking.

RQ1. Are teachers practicing reflective teaching?
The results obtained from the analysis of two sections: ability to self-assess and awareness of how one learns was used to answer this research question. It was found in each of the sub-sections that teachers were generally more concerned about their performance in their own area of expertise, rather than seeking to enhance their teaching by reflecting on their practices and how this had influenced student’s attitudes and behavior towards their area of discipline.

Ability to self-assess
Observing Own Performance
About 22% seemed to perceive that teachers were more concerned about their own areas of discipline and their own performance in the classroom. The second highest response showed that teachers were also concerned about reflecting on their performance in their lessons and how to improve it. In total, only about 20% of the responses seemed to be very concerned with their own area of discipline and at the same time also wanted to provide continued improvement in teaching their lessons. These teachers seemed to be concerned about following orders so as not to get into trouble.

Using Feedback and Evidence
15% felt that they were being judged by their students. Another 15% perceived that student’s feedback was important as it helped them understand their students better. However, it is interesting to note that very few (3%) perceived that they did not feel that students’ feedback helped them to identify their strengths and weaknesses, and thus need not be taken seriously.

Finding and Analysing Patterns
About 20% of the responses seemed to view that a lesson’s quality would be determined by the content and context of a lesson. The teachers were not of the opinion that what they did during their lessons was an important indicator of their effectiveness and they did not seem to view that how they taught in the classroom was affected by their life experiences. This would imply that they held their life experiences as separate from their work of teaching students.

Making Judgments
About 20% of the teachers seemed to perceive that they were helpless over making mistakes and they were not able to do anything about it. Many did not agree that they could learn from their mistakes and move forward.

Awareness of How One Learns
Concepts and Misconceptions
19% of the responses did not seem too concerned about students’ feedback as long as they felt that they were doing their jobs. 14% seemed open to learn from past experiences and were willing to use it to help improve their lessons in future. 13% seemed to perceive student feedback as important in helping them enhance their lessons.

Knowledge Construction
There were 19% of responses who perceived they needed guidance from a supervisor to help point out problems they were having with their lessons. 16% of them seemed to understand that students learned differently and they needed to look into new strategies to deliver their lessons. It is interesting to note that only 2% did not perceive themselves as only wanting to get the job done.
Metacognition
About 10% of the responses seemed to be open to reflecting on what they had done in their lessons and exploring strategies to help them teach better. 8% also seemed to be open to using self-discovery to help them hone their skills when teaching.

Discussion
The overall responses to the statements on the questionnaire showed a higher frequency of responses for statements classified as introductory and intermediate levels for most of the categories except for three: concepts and misconceptions, knowledge construction and metacognition. In these three categories, the advanced statements had the most responses. It would seem from the responses that the teachers thought that it was important they learn from past experiences to help enhance their performance in the future. Added to this, they were of the opinion that students learned differently and they needed new strategies that would help them keep abreast of strategies in teaching. They were also reflective of the way they taught their lessons and would look to colleagues for help.

From the responses, it is interesting to note that the teachers did not perceive that students’ feedback was helpful and thought that feedback from students were a form of judgment, although some of them felt that the feedback was helpful for them to understand their students better. It would be interesting to investigate further the perceptions teachers have on feedback from peers, superiors and students as a tool to help them to be more reflective in their teaching practices.

Generally, based on the results, it would seem that teachers were using reflective thinking to help them enhance their teaching but many were thinking in terms of personal performance and expectations rather than using it as a tool for personal growth. They did not seem open to the idea of using feedback from students which is part of the assessment criteria based on a model developed by Hamilton (2005) to develop reflective thinking practices for teachers. The teachers by not being comfortable with feedback from students, may not be able to see a connection between what they are teaching and what they are actually practising (Rudd, 2007) as part of the process of helping them be more reflective practitioners.

RQ 2. How do teachers think of themselves and their teaching practices?
The results obtained from the analysis of two sections: developing lifelong learning skills and influence of belief about self were used to answer this research question. It was found in each of the sub-sections that teachers generally accepted the idea that they were still learning to develop their skills as teachers. However, it is interesting to know that in general, teachers were of the opinion that they needed to put their own needs first over the needs of others.

Developing lifelong learning skills
Developing identity as a learner
12% were of the opinion that they were still learning to be better teachers and were open to feedback from supervisors and students. Only 6% were of the opinion that they had an established set of practices that they were comfortable with and they were open to feed back from their students and supervisors to help them improve these practices.

Transferring Learning to Other Contexts
14% of the teachers seemed to be aware that they made assumptions about many things and that they should take the feedback from others in perspective and learn from the feedback they were given. 10% of the teachers were of the opinion that they were doing well because the overall comments from students were positive.

Understands learning as a lifelong process
About 20% did not seem to spend time on reflecting their practices as a teacher. Only 5% were aware that their actions will have an influence on how their students responded to them in their classes and realise that reflection of their practices were important.

Influence of Belief about Self
Developing a Personal Belief System
16% of the teachers believed that they need to take care of their own needs first before they could take care of others. 9% of the teachers were aware that their beliefs would influence their own behaviours towards others.
Discussion

The overall responses to the statements were in the introductory and intermediate level of reflective thinking in most of the categories, with the exception of transferring learning to other contexts which had more responses in the advanced category. The teachers seemed on the whole interested in developing themselves but they did not seem to be interested in reflecting on their teaching skills. They were open to getting feedback from their supervisors and students to help them improve in their teaching skills in the future. This contrasts with their response where they expressed that they were not taking student feedback seriously. It must be noted that the teachers did not seem to perceive that their own assumptions were important and had an influence on their teaching practices. They were more concerned about the feedback they received from students, these assumptions could be culturally and historically driven (Shermis, 1999). The teachers would have problems using reflection-on-action (Schon, 1987) which advocated that there need to be intellectualisation of teaching that require teachers to be able to demonstrate this skill in their teaching. They also perceived that they need to take care of their own needs first before tending to the needs of others.

The teachers seemed to be interested in developing themselves to be better at teaching. However, they do not seem to be open to using reflection as a tool to help them achieve this goal. They were satisfied with getting good comments from students on their teaching. They were of the opinion that they were competent in what they were doing and did not see a need to spend time on reflection.

Conclusion

The results showed that a majority of the teachers were on the whole not critically reflective as their responses did not show that they practised any of the four learning processes: assumption analysis, contextual awareness, imaginative speculation and reflective scepticism, which, according to Brookfield (1988), were indicative of such practices. They were more interested in how they were assessed by their students and superiors. The results showed ambiguity about their feelings towards feedback from students. They perceived that feedback from students was important but similarly they also perceived that the feedback need not be taken seriously as they were just opinions of others. According to Sezer (2008), in order to become reflective thinkers, awareness of what is known and what is needed is essential to bridging the gap between learning situations. It is also interesting to note that these teachers perceived that getting feedback from students is like being judged by them. This is reflected in their belief that they must see to their own needs first before the needs of others. Such beliefs of these teachers would influence the way they teach (Choy & Oo, 2007; Williams & Burden, 1997). As such, these teachers may have problems incorporating critical thinking into their lessons, as well as bringing about effective learning experience for students in this area.

There were many avenues that open up for further research from this study. This study did not address how to bring about the practice of reflective teaching among teachers and how such practices enhanced the lessons for both students and teachers. Added to this it did not study student’s experiences as the focus here was on teacher practice. However, the student’s experience will be the focus of future studies. It would also be interesting to further research into the type of reflective practices that would enhance the quality of delivery of lesson for these teachers in particular, to bring about critical thinking.

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The Effects of Integrating Mobile and CAD Technology in Teaching Architectural Design Process for Malaysian Polytechnics Architectural Students in Producing Creative Product

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The purpose of this research is to examine the effect of integrating the mobile and CAD technology on teaching architectural design process for Malaysian polytechnic architectural students in producing a creative product. The website is set up based on Caroll’s minimal theory, while mobile and CAD technology integration is based on Brown and Campione’s technology of learning theory. This study utilized a quasi-experimental method. Final semester students from four (4) polytechnics were used as research samples where sixty (60) students were in the treatment group and another sixty (60) students were in the control group. Final products were evaluated by experts in the architectural field using the validated instrument developed by researchers based on Creative Product Analysis Model (CPAM). The inferential statistics namely T-Test and Pearson Correlation Analysis with a significant level p = 0.01 were utilized. Research outcome shows that there is a significant difference between the treatment group product (M=79.1) and control group product (M=70.5). It also shows that there is a significant correlation between CPAM creative model details and the final product designed using mobile and CAD technology integration where r(unique)= 0.905, r(practical)= 0.857 and r(details)= 0.758. This research contributes to the use of real case in the development of an architectural website, in the use of mobile technology as a media information source, the use of CAD technology integration in designing process and in the construction of validated instrument which is used to evaluate creative architectural products.

Keywords: Real case, mobile technology, CAD technology, design, creative product

1.0 Introduction

Architectural design is a complex and open process. Designing process starts from abstract which had a problem to be developed stage by stage until a level where it can be produced as a product. Designing activities is a repetitive problem-solving process (Demirkan 1998). According to French (1998), architecture design is a response to human’s special needs which are refuge and comfort. Lawson (1997) states that architectural design is a process where an architect has produced a space, place and building which has a big effect on the quality of human life. Most architects agreed with Sanders (1996) who states that architectural design is a repetitive process where the process scheme can be recognized, valued, repeated, explored and repaired until the best solution is achieved. In the context of this research, architectural design is a systematic process through a few stages in producing a new product that can be valued from the physical aspect and providing benefits to human life and environment. Decision-making activities in architectural design process happen at the sketching stage, the schematic design stage and the final design stage. At the details stage, design process is focused on producing drawings documents and planned building construction activity. This research concentrates on the schematic stage of the design process which involves sketching and schematic design. As a conclusion, the beginning stages of the design process involve collecting the information needed in the design process and in producing new ideas.
Technological development nowadays, has given chances for mobile and CAD technology to be integrated in design process.

Mobile technology gives chances for students to have access to the information without time and place limits. Websites referring to real cases provide opportunity to gather quick information for the purpose of the design process. Media variety in design process also can give more choices to designer in creating new ideas. According to Dong & Gibson (1998), CAD technological development in three dimensional drawings, three dimensional digital model and computer simulation can provide new methods for designers to find more solution in schematic design process.

1.1 The purpose of the research

The purposes of the research are as follows:

i. To prepare an interactive multimedia web mobile base on a real case
ii. To identify the interest of the student in finding information needed in the design process through web mobile or conventional methods
iii. To study the effect of integrating mobile technology at the analysis stage in the design process
iv. To study the effect of integrating CAD technology at the synthesis stage in the design process
v. To study the effect of integrating CAD technology at the simulation stage in the design process
vi. To study the effect of integrating mobile and CAD technology in producing the final product of architectural design
vii. To see the relationship between the integration of mobile and CAD technology in the design process with the creative product of architectural design

1.2 Conceptual framework

The conceptual framework used for this research as shown in figure 1.1

![Conceptual Framework](image)

Figure 1.1 Conceptual Framework

1.3 Real case as a design educational method

With architecture being a much more complex career, real case study as a lecturing method has started to be an effective method amongst the lecturers. According to Vijayalakshmi (1997), real architecture cases involve construction and designing process of a completed building. Oren (1990) says that information usages based on real projects will help students to analyse, make comparisons and validate important aspects from studied buildings. With the use of real case method, the researcher will develop a website which is related to the same building type that will be built by students. Important links from this website will be connected to additional information for students. According to Oren (1990), links from a website can increase students’ knowledge.
towards issues that are being studied. For this research, the use of real case in the development of the website is expected to make the students’ information searching easier and focus on the project needs. Focused information searching is suitable to be used in a website based on a mobile technology with regards to the proven ability of the mobile technology today.

1.4 Website in mobile technology

There were different opinions in defining mobile knowledge. Lehner and Nosekabel (2002) describe mobile knowledge as a service that provides electronic information generally and educational content which helps information searching without time and place limits. Vavoula and Sharples (2002) explains that there are three ways where learning can be mobile which are, learning is mobile in a space, learning is mobile in different aspects of life and learning is mobile without time and places limits. According to Anna et al. (2003) education based on mobile technology is a learning method using small device, mobile and become convenient in every aspect of life. From the definition above, a conclusion can be made, that education based on mobile technology is an educational approach that is capable of conveying information at every time and place based on student needs. Learning activities can be achieved even when students and lecturers are in mobile position. Referring to Chen and Kinshuk (2005), educational service based on mobile technology is a movable learning source and can be accessed by students without time and place constraints. In order to make a dynamic mobile technology based learning atmosphere, learning system has to be made ready in providing information without time and place constraints (Chen and Kinshuk 2005). Learning system also has to be designed, where the information provided can be chosen by students according to their needs. The system also has to be able to change the information based on student needs (Chen and Kinshuk 2005). Educational system design based on mobile technology has to be dynamic, can be changed easily and can be used at any time and any place. As a conclusion, educational system design based on mobile technology has to be adapted by users at every time and situation. According to Bottentuista et al. (2007), website usage through mobile technology can attract more students to use the internet. In conclusion, if interactive multimedia website that refers to real case is developed using mobile technology, information searching process will be easier where information can be reached by students without time and place constraints. Through faster information reaching process, students’ creativity can be generated with sufficient amount of information and it can also hasten the students’ skill in creating new ideas in the design process.

1.5 Computer aided design (CAD) in architecture

CAD technology enables people who are involved in the architectural design industry to sketch and develop their work on computer screen, it can be saved and printed for future use in making changes and editing. According to Husain (2007), nowadays, CAD is recognized as computer aided design and not as computer aided drafting anymore. This is because of the fact that CAD technology can actually do more than drawing. A close relationship exists between CAD software developer and architect, in order to build user-friendly CAD software for architectural design (Vijayalakshmi 1997). CAD technology also enables the production of high visual impact digital model and gives freedom to the architect to think about object, space and shape in the same screen. Refering to Salman (2004), rapid development for CAD technology has changed the stages in concept development from two dimensional to three dimensional. CAD technology development today has proven that the real strength of today’s technology is not towards the drawing process but in creating new ideas using visual CAD technological impact (Dong & Gibson 1998). CAD technology’s existence in architecture has two primary objectives which are to applied human cognitive design process through the computing smart technology and to become an idea representative media in architectural design process (Koutamanis 2003).

1.6 Three dimensional digital model

Three dimensional digital model is another representation media that can be built using CAD technology. According to Wei Dong and Gibson (1998), digital model gives chances for architects to think, pictures, communicate and making assumptions in designing process. At concept development stage, digital model design can be used to analyse overall shape, space planning and to decide space height. In schematic stage, digital model can be used to study the suitable type of construction material, colour and lighting for the designed buildings. At the final stage of schematic, digital model can be used to produce a high visual impact design representation. Digital model with the use of CAD technology can produce a visual impact similar to real environment in construction sites. According to Jiangyin (2003), digital model has the ability to represent photo realistic situation with regards to environment details. As a conclusion, compared to conventional model, digital model give chances for architectural students to study about the designed building component in detail, suitable finishing materials for each space designed and lighting condition for building’s interior. With the CAD
technology capabilities, designing process will be simpler, faster and it will give more chances for students to
develop their ideas in the designing process.

1.7 Computer simulation

Simulation is a popular teaching technique amongst educators. According to Micheal (2000), simulation helps
students to understand a situation, a process and the replication of real situation activities. Gokhale (1996)
believes that virtual experience can give chances for students to study while doing practical activities and not
only depending on lectures in the lecture room only. Menn (1993) says that 90% of the students learned by
doing the activities themselves even with the help of simulation methods. In architectural context, computer
simulation brings in the real situation in building design. With the capability of CAD technology nowadays,
students can use software such as 3D Studio Viz to observe building detailed effect, lighting and movement in a
space through animation just like in a real situation. Computer simulation helps students to choose suitable
building details, lighting and space arrangement for the designed building. The advantages of computer
simulation in the designing process are that it can boost the designers’ visual capabilities towards space and
help designers to quickly evaluate the quality of designed space. If computer simulation is integrated in the
learning design process at polytechnics, it is predicted that students can produce a much more creative space
design. There were not many empirical researches which can prove that computer simulation can increase
students’ creativity. However, there are several researchers such as Gokhale (1996), Micheal (2000) and
Lawson (2007) who has made assumptions that computer simulation can increase student creativity. Through
this research, researcher hopes that it can strengthen previous research outcomes on computer simulation
capabilities via three dimensional digital model which can produce a creative architectural design product.

2.0 Research methodology

This research consists of two main activities in designing process which is design’s information development
and creating new ideas. Information searching on website based on real case is provided by researchers using
mobile technology while for creating new ideas activity, CAD technology is used. Through this study,
researchers want to see the differences in final product designed using mobile and CAD technology integration
with the final product built using conventional method. Research has been made on semester six Diploma of
Architecture students from four (4) Polytechnics in Malaysia that offered diploma of architecture course.
Research duration is for six weeks between January and March 2009 involving one hundred and twenty students
(120) as research samples. This is a quantitative research to study the effects of integrating mobile and CAD
technology in teaching the design process to produce architectural creative product. Quasy experimental method
is used to study mobile and CAD technology integration effects in designing process. In this research, students
have been asked to design a kindergarten building. Sixty (60) students from POLIPD and PMM were selected
to perform mobile and CAD technology integrated design while the other half from PUO and POLISAS perform
the design process using conventional method. This research is conducted by two lecturers from selected
polytechnics. Design process for treatment group and control group is conducted simultaneously. This research
is evaluated in four stages which are analysis, synthesis, simulation and final product. In analysis stage, mobile
technology integration in designing process is measured. In synthesis and simulation stage, CAD technology
integration in designing process is measured. Then, the final product evaluation is used to measure mobile and
CAD technology integration on producing a creative product in designing process. Evaluation instrument for
analysis activity is prepared by researchers based on Laseau (2001) and Ching (1979), synthesis evaluation
instrument is based on Laseau (2001) and Koberg & Bagnall (1981) and simulation instrument is prepared by
researchers to study the students’ ability in providing alternative idea to be developed as a final design product.
The evaluation instrument for final product is developed by researchers based on Creative Product Analysis
Matric (CPAM) model (Besemer dan Treffingger 1991). Researchers have been using CPAM model as a
guidance to evaluate the creative architectural final product. Raw data from lecturers were used and analysed via
computer. The analysis is done using Statistical Package for Social Sciences (SPSS) version 11.5.

3.0 Analysis and findings

In identifying students’ interest to find information needed in designing process whether it is via mobile
technology based website or via conventional method, research outcomes show that the total number of student
searches in treatment group is 392 (M=6.53) and total searches in control group is 178 (M=2.97). This outcome
clearly shows that student searching activities increased with website integration related to real case based on
mobile technology. In evaluating student skills at synthesis stage, research has been made to determine whether
student using CAD technology integration in synthesis stage produce more schematic idea such as sketches and bubble diagram compared to conventional method. Research outcomes are as follows:

i. Total number of concept diagrams produced for treatment group is 229 (M=3.82) while total number of concept diagrams produced by control group is 150 (M=2.5).

ii. Total number of design ideas produced for treatment group is 243 (M=4.05) and for control group is 150 (M=2.5).

iii. This outcome clearly shows that treatment group produced more ideas and is actively involved in synthesis activities compared to the control group.

In determining student skills in synthesis stage in designing process with CAD integration, research has been made to decide whether students using CAD technology integration in synthesis stage has made more idea changes from two dimensional to three dimensional compared to students using conventional method in synthesis stage. Research outcomes show that sketching changes from 2D to 3D for treatment group is 235 (M=3.92) while total number of sketching changes from 2D to 3D for control group is 127 (M=2.12). It shows that treatment group is actively involved in synthesis activity compared to control group. To evaluate students’ skills in simulation stage in designing process with CAD technology integration, research has been made to determine whether students using CAD technology has made more simulations compared to students using conventional methods. The outcomes of the research are as follows:

i. Total number of finishing details simulation for treatment group is 256 (M=4.27) while total number of construction details simulation for control group is 114 (M=1.9).

ii. Total number of lighting simulation for treatment group is 211 (M=3.52) and total number of lighting simulation for control group is 90 (M=1.5).

iii. Total number of interior space movement simulation for treatment group is 219 (M=3.65) while total number of space movement simulation for control group is 83 (M=1.38).

Outcome shows that treatment group made more simulation compared to control group. As a conclusion, descriptive analysis shows that mobile technology integration in design process has increased the students’ information searching activities and it also shows that CAD technology integration in design process has increased student skills at synthesis and simulation stages. Inferential data is extracted from students work in analysis, synthesis, simulation and final product stages. This data is used to determine the mobile and CAD technology effects towards student product in design process. In deciding mobile technology integration effects at analysis stage, analysis is made to determine whether there is a difference in information between mobile technology integration and conventional method. In analysis stage, inferential data shows that there is a significant difference between the mobile technology integrated data (M=81.2) and conventional method (M=65.5) t(118) = 18.369, significant. Inferential data also shows that there is a positive relationship between design information produced by students through analysis activity with the creative product, r(118) = 0.666, p < 0.01. Correlation can be accepted and is significant because the value is p<0.01. Inferential data also shows significant difference between schematic idea produced in synthesis stage using CAD technology integration (M=80.6) compared to schematic idea produced using conventional method (M=67.1), t(118) = 15.910, significant. Then, the outcomes also show that there is a significant correlation between synthesis activity using CAD technology integration with the creative product r(118) = 0.610, p < 0.01. This correlation can be accepted and is significant because p<0.01. Inferential data also shows significant difference between designing ideas creation in simulation stage using CAD technology integration (M=80.5) compared to designing ideas creation using conventional method (M=66.9), t(118) = 12.267,significant. Then, the outcomes also show that there is a significant relationship between simulation activity using CAD technology integration with the creative product r(118) = 0.608, p < 0.01. Looking at the mobile and CAD technology integration effects on designing process in producing a creative product, researchers are looking at the integration effects from unique aspect, practicality and details based on CPAM model. Inferential data shows that there is a significant difference between design process integrated with mobile and CAD technology (M=78.0) compared to conventional method (M=68.5) in producing unique design product, t(118) = 7.134 significant. Inferential data also shows that there is a significant difference between design process integrated with mobile and CAD technology (M=78.0) compared to conventional design process (M=73.1) in producing a practical architectural design, t(118) = 6.901 significant. Inferential data also shows that there is a significant difference between design process integrated with mobile and CAD technology (M=81.5) compared to conventional design process (M=71.9) in producing high details architectural product, t(118) = 11.076, significant. As a conclusion, final product comparison from creativity aspect of treatment and control group show a significant difference. Research outcome also shows that there is a significant difference between final product produced by mobile and CAD technology (M=79.1) compared to final product produced using conventional design (M=70.5) from creativity aspect, t(118) = 10.610
significant. Overall, inferential outcome shows that there is a concrete effect on mobile and CAD technology integration in producing a creative architectural design product.

4.0 Conclusions and discussions

In this research, positive research results for mobile technology based website shows that learning approach using mobile technology can be a perfect replacement for computer based learning approach. Students and lecturers can gain benefits from easier and faster access of information sources. Rapid development in mobile technology has contributed to growth of faster and higher memory mobile equipment, so that this mobile equipment can be used to download data faster than before and it can also save a lot of information in the memory. Mobile technology offers an ideal educational approach in providing a unique learning community based on technology. In the future, graphic resolution and screen size for mobile equipment is expected to be better built. Furthermore, if internet surfing cost can be cut to a lower price, this mobile technology will definitely be useful for higher education students or off-campus students. From CAD technology design aspects, it is proven that CAD technology are able to give comfort for students to produce three dimensional digital model and also increases students understanding of space through good visual effect. This is because CAD technology enhances student creativity and it also encourages students to appreciate interior space when students are doing simulation using different details and lighting into the same space. Students also get excited with produced space via simulation increment with different details and lighting towards their three dimensional digital model. Students’ understanding towards space is increased with the ability to run a simple interior animation. With the animation, students can look at the space from a different perspective. Students give good response towards three dimensional digital model usage to produce good quality interior space design. Overall, CAD technology via three dimensional digital model helps students to produce a creative final product design. Digital model effects can be strengthened with the research done towards NBBJ firm by Mark Von Wodtke (2000) which shows that three dimensional digital model can give good design idea and it also helps the designer to validate the space, building shape and details of designed buildings. These research outcomes are also strengthened by Lawson’s (2007) research outcomes which state that architect Ian Ritchie has produced a creative gallery space in London Museum with the help of CAD technology integrated design. Lawson (2007) also says that the kindergarten design produced by kindergarten teachers with the help of CAD technology has higher aesthetic value than the one produced by an architect using conventional method. From this research, it is concluded that CAD technology is able to help an architectural student produce a much more creative product design. CAD technology, specifically via three dimensional digital model can boost student understanding towards space while they are in designing process through the use of good visual impact. Overall, mobile and CAD technology integration in design process is proven to have increased the quality of the final product designed by architectural students which has been achieved in the learning process via design module.

References


Researhing Professionals and Online Social Networking: Toward a Professional Doctorate

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The professional doctorate is a degree that is specifically designed for professionals investigating real-world problems and relevant issues for a profession, industry and/or the community. The study on which this paper is based sought to track the scholarly skill development of a cohort of professional doctoral students who commenced their course in January 2008 at an Australian university. Via an initial survey and two focus groups held six months apart, the study aimed to determine if there had been any qualitative shifts in students’ understandings, expectations and perceptions regarding their developing knowledge and skills. Three key findings that emerged from this study were: (i) the appropriateness of using a blended learning approach for this doctoral cohort; (ii) the challenges of using wikis as an online technology for creating communities of practice; and (iii) that the transition from student to scholar is a process that it unlikely to be achieved in a short time frame.

Keywords: Doctoral education, professional doctorate, blended learning, wikis

Introduction

The professional doctorate is specifically designed for professionals investigating real-world problems and relevant issues for a profession, industry and/or the community. The focus is scholarly research into professional practices. The research programme bridges academia and the professions, and offers doctoral candidates the opportunity to investigate issues relevant to their own practices and to apply these understandings to their professional contexts. The study on which this article is based sought to track the scholarly skill development of
a cohort of professional doctoral students who commenced the course in January 2008 at an Australian university. Because they hold positions of responsibility and are time-poor, many doctoral students have difficulty transitioning from professional practitioner to researcher and scholar. The struggle many experience is in the development of a theoretical or conceptual standpoint for argumentation (Lesham, 2007; Weese et al., 1999). It was thought that the use of a scaffolded learning environment that drew upon a blended learning approach incorporating face to face intensive blocks and collaborative knowledge-building tools such as wikis would provide a data source for understanding the development of scholarly skills. Wikis, weblogs and similar social networking software have the potential to support communities to share, learn, create and collaborate.

The development of a wiki page by each candidate in the 2008 cohort was encouraged to provide the participants and the teaching team members with textual indicators of progress. Learning tasks were scaffolded with the expectation that the candidates would complete these tasks via the wikis. It was anticipated that cohort members would comment on each other's work, together with the supervisor and/or teaching team member who is allocated to each candidate. The supervisor is responsible for supervising the candidate’s work through to submission of the thesis for examination and the teaching team member provides support to both the supervisor and the candidate through to confirmation.

This paper reports on the learning journey of this cohort of doctoral students during the first seven months of their programme to determine if there had been any qualitative shifts in understandings, expectations and perceptions regarding their developing knowledge and skills. The paper is grounded in the literature pertaining to doctoral studies and examines the structure of the professional doctoral programme. Following this is a discussion of the qualitative study that helped to unearth key themes regarding the participants’ learning journey.

**The professional doctorate**

By their nature, professional doctorates are outcome and student driven with practitioners researching their own professional practice with outcomes evidenced by workplace innovations or advancement of practice (Fink, 2006; Tennant, 2004). In a professional doctorate, the workplace becomes the site of research with the knowledge produced within the context of application. Thus, professional doctorates, such as the Doctorate of Education, through their relevance (Tennant, 2004) and performative usefulness (Gilbert, 2005; Usher, 2002), are becoming increasingly important in contemporary society.

Students enter professional doctoral programmes through professional experience and higher degrees but not necessarily through research (Fink, 2006). This has led to professional doctoral students being described as 'researching professionals' rather than 'professional researchers' (Bourner et al., 2001; Tennant, 2004) as the focus of the professional doctoral research is on problems of direct relevance to the student's own professional contexts and working lives (Bourner et al., 2001). McWilliam et al. (2002) summarised the characteristics of professional doctoral students as mostly mid-career professionals; studying part-time while working full-time (Crossouard, 2008); having careers that make them experience-rich but time-poor; working in professions where there is little or no recognition or reward for postgraduate study; and undertaking further study for intrinsic reasons rather than for monetary gain or other extrinsic rewards.

While professional doctoral students have a wealth of professional experience, they do not necessarily have research skills or training. The transition from practising professional to scholar for these students may prove difficult as doctoral programmes require major changes in how students think and what students do. These transitions require paradigm shifts on several fronts: from social and psychological perspectives and also from an academic position (Ali & Kohun, 2007). From social and psychological perspectives, students are introduced to new forms of socialisation and to new contexts and cultures specific to doctoral programmes. Academically, doctoral programmes are geared towards research, with the key transformation for students, being from student to scholar. While Boote and Beile (2005) purport that doctoral students must be scholars before they can be researchers, Schulman et al. (2006) argue that as Doctor of Education students are experienced professionals, they are scholars first in that they are leaders of their profession who produce new knowledge and understandings and transform those understandings through their writings, teaching and practice.

On entry to a doctoral programme, students become aware of the magnitude and extended duration of doctoral studies (Fisher 2006). Doctoral programmes often lack a clear accountability framework so students must learn to self-manage their time and sustain momentum and motivation (Ali & Kohun, 2007; Fisher, 2006). These stresses contribute to feelings of social isolation (Ali & Kohun, 2007; Golde, 2005; Lovitts, 2001) and anxiety. It is little wonder that attrition rates for doctoral programmes are high (McAlpine & Norton, 2006) as students...
struggle to balance the competing demands of study and other life commitments such as family and friends. Social isolation may impede academic progression, particularly in the crucial first year of doctoral study (Ali and Kohun, 2007). One approach to reducing social isolation in doctoral programmes is by using a cohort approach (Bentley et al., 2004). In a cohort approach, students participate in coursework over an extended period of time with the cohort classes engaging in activities in group settings (Bentley et al., 2004) and, in the process, building a sense of community within the group. Some doctoral programmes using a cohort approach, such as the Doctorate of Education under scrutiny in this paper, further support students through the provision of blended learning opportunities.

Blended learning combines online instructional modes with face to face interactions (Ellis et al., 2006; Oravec, 2003). The use of well-designed and supported blended learning approaches combined with proactive help and support from tutors and peers have been linked to improved coursework submissions and to reduced rates of student attrition (Hughes, 2007). Apart from minimising social isolation, a collaborative cohort approach also assists students in making academic progression in their doctoral studies. Such an approach encourages the development of research communities, in which students provide support for each other, and call on the resources of the research community to assist them and to offer themselves as resources to others (Conrad 2006). This is significant as a strong sense of community leads to deep learning (Marton & Saljo, 1976). It is through the relationships within the learning community that academic progression occurs as students share similar problems including how to construct their research questions, how to use the literature to justify their study and how to develop a conceptual framework for their work (Conrad, 2006).

Related to research communities is the notion of ‘community of practice’ (COP) (Wenger, 1998; Wenger, 2000). According to Wenger (2000), communities of practice are made up of groups of people who share a similar concern or set of problems and who deepen their understandings by interacting on an ongoing basis. Central to this perspective is that knowledge construction is relational and dynamic, and learning is founded in relationships between and among people. COPs have been recognised as a significant aspect of doctoral programmes not only for their ability to reduce isolation but also as a means to empower and support their members’ learning (Lesham, 2007; Wisper et al. in Lesham, 2007). COPs can be face to face as well as virtual.

Online, e-learning or ‘virtual’ learning communities (Gan & Zhu, 2007; Rohleder et al., 2007) have been promoted as a valuable means of encouraging all students to actively share and construct knowledge (Chang et al. 2008). In a knowledge-building approach to education, the focus is on the construction and advancement of collective knowledge (Scardamalia & Bereiter, 2002) rather than personal knowledge, and on interactive and collaborative learning, instead of independent learning (Gan & Zhu, 2007). In essence, the knowledge the community produces is greater than the sum of each individual's contributions (Scardamalia & Bereiter, 2002). As virtual learning communities use knowledge-building principles and practices they provide powerful learning environments in which the advancement of knowledge building is promoted, and learning to a higher level is facilitated (Gan, 2005). Interactive computer-mediated communication tools, such as wikis and blogs, support the development of learning communities by providing opportunities for students to socialise, interact, enter into dialogue with each other, seek support and assistance and also express feelings and concerns (Dickey, 2004; Oravec, 2003). A wiki is a set of related web pages that allows users to view or change the content by editing the page online in a browser (Ebersbach et al., 2005). While wikis provide opportunities for collaboration and for peer editing, students are often hesitant to edit each other's pages and maintain strong ownership of their own pages (Ebersbach et al., 2005; Guth, 2007). Wikis also have archival and backtracking facilities through which students and teachers may examine their previous contributions (Guth, 2007) thus providing chronologically sequenced evidence of scholarly progression.

In the study the use of a blended learning approach, drawing upon intensive face to face study schools and online tools, was designed to assist students in the progression of their academic and social skills. Underpinning our pedagogical practices as teaching team members of the doctoral programme was a constructivist theoretical perspective which acknowledges that: learners are engaged in constructing meaning from their experiences; knowledge is constructed socially and through social interactions; and individuals and communities create knowledge and make sense of new knowledge (Elwood & Klenowski, 2002; Staver in Ferguson, 2007). This perspective reflected our commitment to promote and facilitate a collaborative, supportive and constructive COP (face to face and virtual) within which the cohort members could make a smooth transition from student to scholar in the professional doctoral programme.
The Professional Doctoral Programme

The professional doctoral coursework is designed as a programme of part-time study to parallel students’ ongoing professional work. The coursework involves three intensive on-campus schools. The first is a four-day summer block held in January of the candidate's commencing year. Candidates are inducted into the programme and prepared for the task of critically reviewing literature in a relevant chosen field. A four-day winter school is conducted in early July of the same year. During this course the candidates begin to consider the matter of research design. The third and last unit of coursework involves a continuation of the work commenced on methodology, in which the design of the particular research project is defined and refined. It is another four-day summer school in January of the second year of enrolment and student negotiation is a feature of this course. In evaluating the performance of candidates during each of the three coursework components of the professional doctorate, the objective is to provide clear and unambiguous feedback on progress and achievements. In this study, the focus was on students’ capacity to express written ideas in a scholarly way and to provide evidence of scholarship in terms of developing capacities as practitioner/researchers throughout this phase of the Doctor of Education programme.

Once these three units of coursework are completed, the candidate is well on the way to preparing for his or her confirmation. Over the next semester, the candidate works with the supervisors to finalise a confirmation portfolio which is submitted to the Faculty for review. A public seminar on its contents is given by the candidate. To achieve success at confirmation, the portfolio of work needs to meet the following criteria:

- The research aims and objectives are clearly defined.
- The research project is feasible and manageable.
- An appropriate research design and methodology have been developed.
- There is evidence that the research approach will achieve the objectives.
- There is evidence of familiarity with the literature in the chosen field and there is identification of the contribution of the proposed study to the field.
- There is evidence of a capacity to express written ideas in a scholarly way.

Once confirmation has been achieved, candidates work with their supervisors to enact the research and make it available as a thesis.

The Study

The focus of this study was on the candidates’ experiences during the first seven months of their enrolment in the professional doctoral programme and represents an important time in their learning, i.e. the timeframe between two key milestones – summer school in January and winter school in July. The methodological approach used in this study is a qualitative interpretive case study. Case study was chosen because it allows researchers to gather information based on a single entity (Cavana et al., 2001) such as a cohort of doctoral students. Qualitative enquiry is a suitable approach due to its focus on participants’ perceptions, experiences and meanings (Glesne, 1999). The participants are members of a cohort and a COP. Therefore, focus group interviews, rather than individual interviews, constituted the main data collection strategy and main data source. Focus group interviews or “a group conversation with a purpose” (Maykut & Morehouse, 1994, p. 104) are a valuable and dynamic means of eliciting information from participants who can listen to each other and respond to each others’ ideas and thoughts.

Data Sources

Two main sources of data were collected and analysed. These include a qualitative initial survey that participants completed before they commenced the first summer school, and focus group interviews held after the summer school and the winter school. The initial qualitative survey aimed to explore participants' perceptions of their roles and expectations of the degree, their knowledge and skills base regarding research and ICTs, and knowledge of and engagement with a COP. The eleven enrolled students completed the electronic surveys and emailed them as attachments to the research team. Responses were collated according to the questions asked. Questions asked during the first focus group were almost identical to those included in the initial survey and were structured in nature. Structured interviews are those with pre-determined questions that focus on a particular topic (Cavana et al., 2001). The main purpose of this focus group was to give participants an opportunity to discuss further the ideas they included on their surveys in the light of their recent summer school experience.
The second focus group interview asked participants a number of questions that went beyond earlier questions since it aimed to capture their perceptions of any marked shifts they may have noticed regarding their learning about themselves and their research as well as any successes and ongoing challenges. Eight respondents who attended the winter school participated in the focus group. Both focus groups were conducted by one of the researchers of this paper and both lasted about 40 minutes. They were tape-recorded and transcribed. Triangulation of the data was achieved by using two methods of data collection (i.e. survey and focus group interviews) and by ‘researcher convergence’ (Lee & Bisman, 2006). Researcher convergence refers to when two or more researchers analyse the same raw data independently and this analysis is compared to decide upon codes (Cavana et al., 2001).

**The participants**

Consistent with McWilliam et al.’s (2002) characteristics of professional doctoral students, the students enrolled in the 2008 cohort were mid-career, studying part-time while working full-time, experience rich and time poor and motivated to undertake the degree for intrinsic purposes. This cohort could be described also as ‘researching professionals’ rather than ‘professional researchers’ (Bourner et al., 2001; Tennant, 2004) because the focus of their studies were related closely to their professional contexts. In keeping with Fink’s (2006) ideas, participants in this cohort entered the programme through their professional experience and postgraduate degrees rather than through a research route. Many of them indicated that they had either no research skills or limited skills. In response to their expectations of participating in the doctoral programme, participants commented on their desire to complete the research within the appropriate timeframe and to improve their current research and writing skills. A couple of students indicated they wanted the results of their research to ‘add value to … industry’. This is not surprising given that professional doctoral students often engage in this type of study to make a contribution to improving practice (Fink, 2006; Tennant, 2004). A further expectation was working within ‘an academic community’ and ‘a cohort of peers’.

Since communities of practice is an idea that is pivotal to the functioning of this doctoral programme, the survey asked participants to explain their understanding of this term. It was evident by their responses they were familiar with this concept and had partaken in communities of practice in the past. The overwhelming majority of students indicated they had a high level of engagement with ICTs which suggested to us that they would be comfortable communicating with their peers and teaching team members via online technologies.

**Building a COP via face to face learning: The journey begins**

Immediately following the four day intensive summer school block, students participated in a focus group interview. Four key themes emerged from the analysis. These related to the benefits of the summer school; their changing expectations and roles; COP; and the use and benefits of the wiki as a means of communication. Participants discussed the benefits of the summer school in enhancing their knowledge and skills and in helping them identify areas they needed to further develop. One participant summarised it well: “I thought I had all the skills I was going to need…. But I am going to need to do a bit more synthesising”. Another mentioned the need for “critical reviewing” and “scholarly rigour”. A further key benefit of the summer school was increased confidence. Another student said, “I think that everybody has that same sort of feeling … it’s been overwhelming … but we can do it”. Participants indicated that their expectations of the teaching team had shifted as they saw teaching team members as guides rather than instructors. Another referred to them as ‘support mentors as well as colleagues’. Following on from this, one person recognised the strength in a ‘team approach’ where the teaching team members represent an eclectic body of experience and views and this would be of benefit. Not surprisingly, participants’ understandings of their role also changed. As one said, “my original expectation was that I wanted to have more data to help me in my practice, now I understand I’m a creator of knowledge as well”.

A key finding was that participants acknowledged the importance of face to face interaction in enabling the COP to work effectively. The opportunity to meet during the summer school gave them time to get to know their peers, the doctoral teaching team members and supervisors. One summed it up well: “I think I needed the face to face for the community of practice to work”. Related to this was the importance of being able to trust their peers. There was a consensus amongst participants that trust had been established during the summer school. One participant claimed that the size of the cohort “helped this group meld very quickly into a cohesive group”. A couple of others referred to the close knit nature of the group, “we’ve become a very robust group”.

The doctoral teaching team expected that participants would use the wiki as a central platform to build their COP. It was suggested to students that they structure their personal wiki pages in a specified way and publish
evolving drafts of their assessment items (e.g. annotated bibliography; critical literature review) as well as inviting comment and suggestions from others. Several students anticipated that over time, they would become more comfortable putting entries on to the wiki and would benefit by the breadth of feedback from others. Another commented that using the wiki would reduce the isolation of working on one’s own. Although participants indicated they had developed close and supportive relationships during the course of the summer school, the idea of using the wiki to share their own written work raised some anxieties. For instance, one said, “I’m very reluctant to expose my soul and my feelings … and stick them on a website”. Another said, “I … wasn’t in favour of it initially. I’m still not”. Two participants referred to previous unfortunate experiences where “the written word [was] used against me” and another said, “I felt very marginalised”.

Towards a ‘support network’ – six months later

By the time of the winter school, three students had left the programme. Eight candidates remained and constituted the focus group for the interview at the end of the winter school. Almost a quarter of the students leaving the programme in their first seven months is not surprising given the problem of attrition within doctoral programmes around the world (McAlpine & Norton, 2006). The focus of the content covered during winter school was research design and methodology. As with the summer school, participants again referred to the benefits of the winter school, their changing expectations, and their experiences of the COP. Apart from broadening their knowledge about methodology and theoretical frameworks, participants referred to gaining a range of valuable learning from the winter school. They referred to specific elements of the programme such as individual guest speakers, opportunities for interactions with teaching team members, networking with peers, presenting their works in progress to their peers, and generally a broadening of their knowledge about methodology and theoretical frameworks. Several participants alluded to the supportive and scaffolded structure of the doctoral programme in general characterised by its developmental focus. On reflecting on the winter school, one participant said, “after this week I now know what I don’t know,… this week has really crystallised”.

Participants’ expectations of themselves as learners and of the programme were couched in very positive terms. A key theme was that participants saw their role as a developing and ongoing one – one that was moving and had moved from being passive to becoming more active. As one participant said, “I’ve got more of a stance now” while another said, “it’s developed from a passive learner into a more critical and more active learning [role]”. Several students either implied or indicated they were now more confident to apply their understandings and set of critical tools to comment on their peers’ work even though the topic may be unfamiliar. One student put it thus: “it [the doctoral programme] gives you that vocabulary to discuss research on an equal level with anyone doing a project, whether they’re doing grounded theory… whatever”.

Participants referred to a number of external communities of practice in which they were engaging. Their views about whether they as a cohort had been operating as a COP were adamant. They claimed that their cohort was not a COP: ‘we are a support network’. This participant went on to say, ‘I don’t think we can ever be a community of practice because there are not enough points of intersection or commonalities’. Although all students were travelling on a doctoral journey, facing some similar challenges and needing to reach similar milestones, students’ research topics and designs were fundamentally different. Central to their operation as a support network was sharing and supportive feedback to one another rather than critique and critical comment. A couple of participants referred to potential ‘legal cases’ that could arise from writing something critical about another’s work. Furthermore, participants alluded to not feeling comfortable engaging in critique because they did not have the conceptual tools or knowledge of the content area or research design to do so. Yet, evident in their responses was the expectation that they would provide more critical feedback in the future due to their recent experience of winter school. For instance, one said, “I think after this week ... now that I kind of understand where people are coming from I can actually give some comment”. Another said she would be giving ‘constructive feedback’ to her peers.

Of interest was that participants utilised email as their main point of contact and avoided using the wiki. Participants referred to the email as ‘the unofficial wiki’ and ‘the underground wiki’. After the summer school, one participant established an email list as a means of everyone keeping in touch. Highlighting the importance of email communication, one participant said that unless ‘we had the underground wiki, we all would have dropped our bundles’. As it turned out, participants used the wiki only to upload drafts of their work since this was a requirement stipulated by the teaching team. There was little or no feedback provided by students on other students’ written work. Reluctance to use wiki seemed related to participants’ unwillingness to provide critical feedback to others. One participant said, “I was a little bit scared to actually write anything – comment on the wiki because I knew that there was surveillance”. In contrast to her peers, one participant who was using wikis as part of her research study claimed that her wiki site was ‘shared with the entire world’.

Sub-theme B: Technology and Its Impact on Learning, Teaching and Assessment Environments

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Discussion and Conclusion

Three main issues emerged from this research and these include (i) the appropriateness of using a blended learning approach for a doctoral cohort; (ii) the challenges of using wikis as an online technology for creating communities of practice; and (iii) that the transition from student to scholar is a process that is unlikely to be achieved or recognised in a short timeframe. In the wider literature, blended learning approaches comprising face to face interactions and online technologies (Oravec, 2003) have been associated with many positive outcomes for learners (Hughes, 2007). In the current study, participants particularly appreciated the face to face interactions, via the summer and winter school classes, which are a central design of the doctor of education programme. Participants commented that their knowledge and skills both broadened and deepened and by the end of the second intensive class, they recognised a significant change in themselves. They had shifted from feelings of insecurity and anxiety due to the magnitude of the task that lay ahead (Fisher, 2006) to recognising they were more knowledgeable, confident and self-directing learners (Grover, 2007). It is not surprising that students indicated they developed greater conceptual tools, research skills and confidence, as findings in a study of doctoral students over a period of a year by Leshem (2007) were similar.

The face to face component of the programme also enabled respectful, supportive and trusting relationships to be forged amongst students, their peers and the teaching staff, thus setting up an environment where social isolation was reduced (Bentley et al., 2004). Noteworthy is that email, not wikis, was the online technology that students chose to use. Email was the major mode of communication that enabled students to share their feelings and concerns (Dickey, 2004; Oravec, 2003) about the tasks they faced as well as providing a forum where they could support each other and provide feedback and assistance. They described the way they worked as a cohort as a ‘support network’ rather than a COP. Yet we would argue that in some ways, the type of support network they established shares some key features of a COP. For instance, participants were passionate about their practice, they had a shared concern/problem (i.e. undertaking a professional doctorate) and they interacted on a regular basis (Wenger, 2000). In other ways, though, it appears that their support network was based on ‘support’ rather than collective knowledge advancement (Gan & Zhu, 2007; Scardamalia & Bereiter, 2002; Wenger, 2000) which lies at the heart of communities of practice.

While email was deemed to be a successful supportive online technology for this cohort, wikis were fraught with challenges. The teaching team intended that students would use the wikis not only to share opinions and resources but also to build knowledge (Gan & Zhu, 2007) and develop a powerful learning environment where collaborative knowledge creation was evident (Gan, 2005). Students used the wiki space to publish drafts of their work required by the teaching team, but they had little or no engagement with other student drafts. This was in contrast to the ideas of Scardamalia and Bereiter (2002) who argued that participants engage in communities to improve their artefacts not to simply complete the tasks. As discussed earlier, a number of factors stymied participants’ willingness to contribute to the wiki. One of these was a lack of expertise and confidence to provide critique on another’s work. Writers in the field (Ebersbach et al., 2005; Guth 2007) have also identified this as a reason for students’ reluctance to participate in wikis. That most of the teaching team and supervisors failed to use the wiki to provide written feedback on students’ work (instead they included their comments on students’ hard copies), did little to promote the wiki as a collaborative knowledge making tool.

Finally, the findings of the study reinforce the notion that making the transition from professional to scholar is unlikely to happen in a time frame as short as the first seven months of a programme. As Ali and Kohn (2007) indicate, this shift requires major changes, even paradigm shifts, to how students think. Via a blended learning approach, the teaching team endeavoured to scaffold student learning, setting up the conditions to assist them to make a shift in their journey. After seven months in the program, students indicated they had made a considerable shift in thinking. Yet that leap was still not considerable enough to encourage them to use the wiki to provide critical comment on their peers’ work. In retrospect, this is unsurprising given that students themselves were struggling to understand notions of critical writing and reading. It seems that it may be too early for the teaching team to make an evaluation based on how great that shift has been for students.

References


Meeting the learning needs of today’s digital students requires teachers to have more than subject specific content knowledge and computer skills. Secondary school teachers require ICT integration literacy that is that, they understand how to match appropriate educational technology to learning objectives, goals and outcomes. Pre-service teachers need to be prepared by university education programs to teach in classrooms that incorporate modern educational technologies. Effective integration of ICT across the curriculum requires pre-service teachers to develop an understanding of educational ICT’s, sound computer literacy and digital pedagogies that will engage and effectively teach digital students. This paper reports on the use of interactive whiteboard (IWB) technology in the Secondary Science Education program at Edith Cowan University, Western Australia. The large interactive screen of the IWB was used as a port for bringing together a range of ICTs and to embed them into the pre-service student teachers’ science learning experience. Key emerging issues in the development of these pre-service teachers’ ability to match appropriate use of ICT and educational technologies to science learning objectives and goals are discussed. Guiding principles are then suggested for informing the development of integration literacy in university teacher education programs.

Keywords: ICT, Integration Literacy and Interactive Whiteboard Technology

Introduction

The world in which students from developed countries live today is significantly different to the past. Many live in a technologically driven, shaped and connected society. They use digital technologies to communicate and access information from multiple sources. Often referred to as ‘digital students’, they can be described as technology consumers who have a positive attitude and disposition for exploring new technologies. The continually changing nature and use of information communications requires educators to explore new ways of meeting the learning needs and styles of digital students. Integrating Information and Communication Technologies (ICTs) into the classroom should support digital students when embedded in learning and teaching across the curriculum. This assumption is supported by the Melbourne Declaration on Educational Goals for Young Australians (MCEETYA, 2008) which, set out an agreed vision by all Australian state governments for high quality schooling.

“Rapid and continuing advances in information and communication technologies (ICT) are changing the ways people share, use, develop and process information and technology. In this digital age, young people need to be highly skilled in the use of ICT.” (p. 5).

Achieving this vision requires new educational environments that insure continuity in the learning experiences of students from their world outside the classroom to within. Teachers require an understanding of educational ICT’s, sound computer literacy and digital pedagogies to engage and effectively teach digital students.

The acronym ICT is increasingly used in everyday conversations when referring to any technology used for accessing, gathering, manipulating, presenting or communicating information. Educational technologies now available incorporate ICT hardware such as computers, scanners, printers, digital cameras and interactive whiteboards; softwares such as Microsoft word, excel, moviemaker, games, CD-ROMs and DVDs; forms of networking conductivity such as World Wide Web, video-conferencing and on-line learning management systems (LAMS). Mobile technologies are becoming more accessible such as mobile phones, MP3 players like
iPods and incorporate wireless technology. Digital publishing has entered the classroom with some teachers and students pod-casting, v-logging, contributing to a Wiki or keeping an e-portfolio. Yet, common sense tells us that what a teacher does with the technology is far more important than the technology itself. This understanding is having a pervasive influence on the direction of education research nationally and internationally, as illustrated by the following quote from U.K. researchers Higgins, Beachamp and Miller (2007) who investigated the impact of educational technology on students’ outcomes.

"Good teaching remains good teaching with or without the technology; the technology might enhance the pedagogy only if the teachers and pupils engaged with it and understood its potential in such a way that the technology is not seen as an end in itself but as another pedagogical means to achieve learning and teaching goals." (p. 217)

There is a need to go beyond understanding the technology changes and to further understand the impact of the change on learning and teaching. Research should inform developments in university teacher education programs to insure the teachers entering the profession are suitably equipped to meet the learning needs of digital students.

This paper documents the current Australian vision for a digital revolution in education. In this context, consideration is given to integrating ICT across the curriculum in order to engage and connect with the learning styles of digital students. Connectionist learning theory is presented as a conceptual framework for exploring and discussing the use of interactive whiteboard technology for embedding ICTs in pre-service teacher training units occurring in the secondary science education program at Edith Cowan University, Western Australia. Key emerging issues are identified in the development of these pre-service teachers’ ability to match appropriate use of ICT and educational technologies to learning objectives and goals. As an outcome, guiding principles are suggested for informing the development of integration literacy in university teacher education programs.

**The digital revolution**

The Australian Government’s current Digital Education Revolution initiative aims to provide Australian students with greater access to, and more sophisticated use of, ICT and well-trained teachers to integrate technology into teaching and learning (DEEWR, 2008a). It is stated that “The aim of the Digital Education Revolution (DER) is to contribute sustainable and meaningful change to teaching and learning in Australian schools that will prepare students for further education, training and to live and work in a digital world.” (DEEWR, online). Contemporary professional learning for educators must focus on learning how to effectively integrate ICT across the curriculum.

The implementation of the Australian Government’s Digital Education Revolution (DER) is being guided by the DER Strategic Plan and Roadmap (DEEWR on-line) which acknowledges that teachers are “critical to student learning” and need to “receive the necessary training and development to integrate ICT into their teaching practices”. The DER strategic plan titled *Success through partnership: Achieving a national vision for ICT in schools* states improvements in teachers’ capability to integrate ICT are necessary and would be supported by the following actions.

- Promote models of learning and teaching that effectively harness digital resources in the delivery of high quality education programs.
- ICT capability standards for teachers applied to pre-service training and in-service professional development
- Transfer of effective practice between schools, jurisdictions and sectors (DEEWR, 2008b, p.7).

**Learning theory and ICT integration**

Teachers’ use of ICT across the curriculum is influenced by their pedagogical content knowledge and their understanding of how students learn best. Early use of computers in classrooms targeted basic skills development through drill type activities and word processing. Quick expansion in the world outside the classroom to include the Internet and Web based tools has had an impact on the way students’ access and demonstrate knowledge and understanding. Creative and interactive applications of digital technologies are increasingly evident in today’s classroom. These diverse uses of digital technologies are valid depending on the teaching purpose and learning theory.

Behavioural learning theory argues learning occurs through the association of a stimulus to a response. Drill and practise activities, problem solving and games are widely used with the computer acting as the learning tool or
tutor. Mastery learning is encouraged, activities are often self-paced and feedback is provided automatically by the computer. Furthermore, the constructivist classroom that integrates ICTs emphasises learning with the technologies rather than learning about the technologies. Learning with ICTs creates an environment in which students can connect almost instantaneously with current information and social practise. In this setting they observe, question, practise and evaluate contemporary knowledge. Computer supported learning activities can potentially reveal students’ thinking processes and problem solving strategies as word processing encourages editing on screen, choices made about digital resources are obvious and internet search patterns can be tracked. Importantly, opportunities for social interaction contributing to construction of knowledge are broadened by digital technologies and can range from students’ peers to experts beyond the classroom. Thoughtfully structured learning activities can enable students to use ICTs to socially construct shared meaning as they work collaboratively on tasks (Krause, Bochner, Duchesne, 2003). There is a changing pedagogical role for the teacher in an ICT rich environment. Teachers are developing the ability to use digital tools for modelling inquiry processes and developing powerful explanations. In the classroom teachers are able to access multiple examples in rich multi-media formats, which generate opportunities for students to talk through their ideas, debate and negotiate ideas and understanding. Student learning is enhanced when individuals are given the opportunity to make their ideas public, participate in rich dialogic discourse in which concepts are shared and vocabulary is developed and practised (Warwick, Wilson and Winterbottom, 2006).

Yet, Siemens (2005) identifies some limitations in applying traditional learning theories to the digital environment. He argues that these theories are alone insufficient for exploring digital learning when knowledge is not acquired in a linear manner, or when technologies are used to perform cognitive tasks previously learned by individuals, such as information storage and retrieval. He proposes the learning theory of “connectionism” to assist in understanding the inclusion of technology and connection making as learning activities. He argues that in the digital age learners derive competence from forming connections and states the following.

“The pipe is more important than the content of the pipe. Our ability to learn what we need for tomorrow is more important than what we know today. When knowledge is needed but not known, the ability to plug into the sources to meet the requirements becomes a vital skill. As knowledge continues to grow and evolve, access to what is needed is more important than what the learner currently possesses.” (p. 5)

**e-Learning and e-Teaching**

Based on an extensive review of the literature Newhouse and Clarkson (2008) argued that the use of ICT to support teaching and learning, which improves learning outcomes is not a simple cause and effect relationship. It depends on how the technology is used rather than that it is used. Teachers with a sound foundation of computer and information literacy were found to be well placed to exploit the capacity in ICTs to transform classroom learning and teaching. They were developing integration literacy which is defined by Shelley, Cashman, Gunter and Gunter (2008) as,

“The ability to use computers and other technologies combined with a variety of teaching and learning strategies to enhance students’ learning. Integration literacy means that teachers understand how to match appropriate technology to learning objectives goals and outcomes.” (p. 4)

ICT enriched “connectionist” learning environments support students and teachers by creating opportunities for both e-learning and e-teaching. The act of learning using technology is referred to as e-learning and involves students using information and communication technologies to enhance the learning process. Active citizenship in developed countries arguably requires e-learning skills. Digital students not only require content knowledge and technical skills but also cognitive learning tools. Cognitive tools or abilities include critical thinking, habits of mind and the use of ICT to engage with and communicate about societal contexts. These cognitive tools come together as students develop meta-cognitive knowledge. Greater emphasis is required on meta-cognitive practises or more simply how students construct meanings and understandings in digital learning environments. Students’ e-learning is facilitated by effective e-teaching that sees educators using information and communication technologies to enhance the art of teaching. Using technology to lead the learning journey, exposing students to new ideas, packing and unpacking concepts, encouraging discussion, challenging preconceptions and building knowledge are all core business in e-teaching (Betcher & Lee, 2009). Accomplished teaching that effectively integrates ICT across the curriculum to meet digital students learning needs depends on contemporary pedagogical knowledge and skills, understanding of the potential use of current and emerging technologies and proficient use of ICT for learning, teaching and management (MCEETYA, 2005).
Modeling the integration of ICT across the curriculum in pre-service teacher education

Edith Cowan University in Western Australia aims to educate and prepare pre-service teachers for future practice in classrooms which are potentially equipped with modern educational technologies. In particular, the Secondary Science Education program provides units that required students to engage with ICT’s for learning and teaching science. Interactive Whiteboard (IWB) technology has been installed in the science curriculum teaching laboratory to support the integration of ICT’s into the curriculum. The IWB is used like a port, bringing together in a flexible and fluent way, a diverse range of ICTs. This interactive teaching tool allows the pre-service student teachers and their lecturers to interact with all the functions of the room’s single desktop computer through the IWB’s large, centrally located touch sensitive screen. The IWB software’s working space or ‘notebook’ supports the integration of multimedia resources such as written text, pictures, diagrams, photos, video and online websites into classroom teaching and learning activities. Engagement with ICT’s then occurs on the social learning plan, with whole group facilitated discussion being used to focus and enhance the students’ engagement with the multimedia resources shared on the IWB.

Pre-service student teachers also learn how to use ICT’s on the IWB for producing or interacting with multimodal representations of science ideas. ICT tools were used to support students’ production of drawings, tables, graphs, written text, verbal and video accounts, which brought together ideas, not just for summarising outcomes but for further developing understanding. Integrating ICT’s across the program with the use of the IWB encourages multimedia instruction and accessing of online information (Murcia, 2008). Lecturers and student teachers were using the IWB to capture or link with multimodal materials, to create visually stimulating interactive lessons. Activities such as interactive models, virtual experiments and simulations that can incorporate visual, auditory and kinaesthetic learning opportunities were brought into the learning experience through the IWB.

Teaching and learning experience and modelling the use of the IWB with the pre-service teachers highlighted that effective interactive pedagogy was dynamic, flexible and multimodal in nature. It was supported by higher order questioning aimed at promoting rich student centred discourse. This observation was supported by Higgins et al. (2007) in their review of the IWB research literature. They found consistent evidence showing that “interactivity is most effectively sustained through effective questioning as well as a wider range of activity” (p. 216). High quality public discourse was an integral aspect of the interactive pedagogy used in the secondary science workshops. It was the means for focussing students’ attention, provoking action and for making connections. A range of IWB tools available in the interactive software were found to enhance questioning techniques and to assist in sustaining quality intellectual classroom conversations. These included the use of the screen and spotlight functions. When applied over an interactive whiteboard they increased the wait time following a question and assist in focussing student teachers’ thinking and talking to the key ideas. In addition, embedded links in the interactive notebook lessons to selected on-line science sites shifted the role of the lecturer from the “giver of information” to the “co-constructor of understanding”. Student teachers were encouraged to ask questions and explore possible answers when exposed to multiple sources and representations of information available through the use of the IWB technology.

Taking an informed approach to planning for effective learning and teaching is important in any educational environment. However, planning took an even more important role when lecturers and student teachers were using and integrating technology across the curriculum with the IWB. A range of instructional models were found to assist in planning to integrate technology into the science curriculum. For example, the ASSURE model (Heinich, Molenda, Russell and Smaldino, 1999), which is a well known procedural guide for developing technology enriched lessons, supported connectionist and constructivist learning principles. It emphasised knowing students’ learning needs and insured the ICTs integrated fitted with the learning and teaching purpose of each workshop. The explicit stages in the ASSURE model found useful for developing interactive learning sequences in IWB notebook software were,

(i) Analyze Learners
(ii) State Objectives
(iii) Select Methods, Media, and Materials
(iv) Utilize Media and Materials
(v) Require Learner Participation
(vi) Evaluate and Revise.
Technology integration with an IWB: Emerging issues and ideas

Integrating the use of ICT successfully across the curriculum required easy access to a range of quality digital learning and teaching resources. Commercially produced digital resources were widely available but often require a commitment of significant funds. Alternatively, there are on-line national and international repositories available free of charge to educators; for example, the Gateway to 21st Century Skills (http://www.thegateway.org/). The site gives access to over 50,000 learning resources contributed to by over 700 education content providers such as NASA and the National Science Foundation (US). Reviews of on-line repositories and also the plethora of commercially produced or free on-line digital resources indicate the materials are of variable quality and relevance from one learning context to the next. As such, determining the appropriateness and effectiveness of digital resource is an important dimension to integrating ICTs across the curriculum. Critical engagement with the content and design of digital resources is required by lecturers, pre-service student teachers and students in the science classroom. This is particularly so when using web based materials as there is no required pre-publication review process for web authors. Pre-service teachers are encouraged to use be a rubric as a tool for evaluating web information and materials. Useful criteria for inclusion in an evaluation rubric included the authors’ authority and affiliation, the purpose of the site and its level of objectivity, the content and scaffolds for the learning process, suitability to the audience, design features, ease of use and its currency or how often it is updated (Shelley, Cashman, Gunter and Gunter, 2008).

Furthermore, an ICT rich learning environment that incorporates the use of IWB technology has been found to change the nature of lesson planning. Australian researchers Schuck & Kearney (2007) conducted 6 case studies in NSW schools and reported finding that teachers’ pre-planned lessons were strongly supported by the use of IWB technology. They stated, teachers “used the boards to collect resources, plan whole lessons and store past lessons for future review” (p. 5). They found that traditional lesson plans gained a new richness and flexibility as a range of choices could be attached or linked with an interactive notebook. Interactive resources can be stored in computer memory and accessed at any time from the IWB. Lewin, Somekh and Steadman’s (2008) study, which draws on educational research carried out for the UK government during 2004 to 2006 to evaluate the impact of IWB on teaching and learning refers to the ‘script’ that is embedded in IWB lessons. This represents a more complex idea with the aim of capturing a sense of the ‘interconnecting content’ and ‘higher degree of flexibility’ made possible in lessons planned with IWB technology. However, technology is only a tool to support or extend learning and teaching strategies. It is critical that the technology doesn’t drive the curriculum but rather it is used to enhance learning and teaching at appropriate times. The software and or online resources selected should match and facilitate the achievement of the lessons teaching and learning purpose. Selecting appropriate ICTs requires an understanding of the students’ prior knowledge, experiences and the way they learn best. The multimedia interactive activities and links to on-line sites embedded in IWB notebooks should encourage students to take different approaches to problem solving through the use a range of resources and representation types (multi-modal) such as simulations, modelling, virtual environments and links to community based facilities (eg. science museum).

Conclusion

Pre-service secondary school teachers can be motivated to learn about and with digital technologies if they understand how technology can boost their productivity and improve learning in their curriculum area. The use of IWB technology in the secondary science pre-service teaching units was found to facilitate the integration of ICT use in learning and teaching and promoted the development of student teachers’ integration literacy. There were increased opportunities, improved understanding and ability to match appropriate use of ICT and educational technologies to science learning objectives and goals. As an outcome of this learning and teaching experience and a review of the literature, the following guiding principles are suggested for informing the development of integration literacy in university teacher education programs.

1. Shift the focus from developing pre-service teachers ICT skills towards enhancing teachers’ capacities to integrate ICT’s across the curriculum.
2. Raise teachers’ awareness of the potential learning benefits from using digital technologies and their role in integrating ICTs into their curriculum area.
3. Scaffold the development of pre-service teachers’ integration literacy and model effective e-teaching so they are able to use a wide range of digital technologies and resources to enhance secondary school students learning of subject specific curriculum.
4. Provide strategies and guidelines for pre-service teachers’ critical engagement with digital technologies and choosing when to employ and when not to employ those technologies in relation to instructional purposes and student needs.
Research evidence and classroom experience suggest that using these guiding principles in pre-service teacher education will enhance teachers’ ability to make their subject content and pedagogy appropriate for engaging today’s digital students. Contemporary e-learning and e-teaching should build upon students’ existing knowledge, expand their thinking and provide opportunities for creativity through digitally connected educational experiences.

References

Using Blogs to Surface Evidence of Deep Learning Among College Students

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Teachers aim for their students to achieve deep learning. Evidence of deep learning is seen when students can explain new facts and ideas in their own words, can cite relevant examples or add context, and can relate new facts and ideas to their own experiences. Perhaps, the major influence on a student’s approach to learning is the assessment method. This paper presents initial results on the use of blogs to surface evidence of deep learning among students. Varying blog assignments were implemented on two groups of undergraduate students. Blog posts were analyzed based on the content generated and student writing style. Results show that an unstructured blog assignment design facilitates deeper learning compared to a structured blog assignment design.

Keywords: Deep learning, blogging, assessment methods, instructional design, blog analysis

Introduction

Teachers aim for their students to achieve deep learning. Deep learning is often associated with higher-order thinking skills where students are aiming towards individual understanding and reflection. Evidence of deep learning is seen when students can explain new facts and ideas in their own words, can cite relevant examples or add context, and can relate new facts and ideas to their own experiences.

Conversely, surface learning is at the other end of the spectrum where lower-order thinking skills are at play. Surface learning occurs when the student is focused on the amount of content to learn and aims to learn this by memorization. Evidence of surface learning is seen in students who passively accept information without much processing, analysis, or reflection upon what they are learning. These are students who aim to complete only the minimum necessary to meet assessment requirements. More dangerously, students simply study to pass the exam and avoid failure in a course.

However, how a student learns is not entirely dependent on the student alone. As students enroll in different courses, they typically decide how they should perform depending on what is expected of them by the teacher. Perhaps, the major influence on the students’ approach to learning is the assessment methods (Houghton, 2004) teachers define in class. Aiming for deep learning requires teachers to move beyond traditional forms of assessment, especially those focused factual recall or single-response answers. Although this might not always be the case, majority of students focus what they learn on what will come out in the exam. The notion of an “upcoming exam” immediately puts a boundary on what students choose to study. This is not to say that exams should no longer be used as a form of assessment, but rather that student assessment must come in multiple forms appropriate to achieving desired learning outcomes. If deeper learning is intended for students, then assessment methods that encourage deeper learning must be selected appropriately. Assessment methods that encourage deep learning include authentic assessment, performance assessment, criterion referenced assessment, systematic observations, portfolios and processfolios, and journals. Although, there is no right or wrong assessment method, teachers need to think carefully about their assessment method because this affects the students’ approaches to learning most.
Blogging is a form of journaling that would enable deeper learning in students. Research on using blogs as a strategy for learning indicate that blogs enrich the learning experience and provide an opportunity for learners to shift from surface to deeper levels of learning (Barlett-Bragg, 2003). The objective of this study is to determine to what extent blog assignments can bring about deeper learning among undergraduate students. Deep learning is evaluated based on the content written in their blogs and from the writing style of students.

**Methodology**

**A. Participants**

This paper presents two case studies named the Structured Group (SB) and Unstructured Group (USB). Participants in both groups consisted of undergraduate students enrolled in a Social Computing (SOCCOMP) course at the College of Computer Studies of De La Salle University-Manila, Philippines. Both groups of students were assigned to maintain a course blog for one trimester (13 weeks) using the Ning platform.

Description of each case:

1. **Unstructured Group (USB)**
   The first group, consisting of 38 students, was enrolled in the SOCCOMP course on January 7 to April 13, 2009 of SY 2008-2009. The blog assignment for this group was designed to be less structured giving more autonomy to the students. In this group, each student was instructed to write at least six blog posts on any social computing topic anytime within the trimester.

2. **Structured Group (SB)**
   The second group, consisting of 58 students, was enrolled in the SOCCOMP course on September 10 to December 13, 2008 of SY 2008-2009. The blog assignment for this group was designed to be more structured having stricter conditions. Each student in this group was instructed to write at least six blog posts on six pre-selected social computing topics on pre-selected weeks in the trimester (Table 1). Once the designated week was over, students were no longer allowed to blog about the topics assigned to that week.

   **Table 1 - Social Computing Topics for SB Assignment**

<table>
<thead>
<tr>
<th>BLOG POST 1</th>
<th>BLOG POST 2</th>
<th>BLOG POST 3</th>
<th>BLOG POST 4</th>
<th>BLOG POST 5</th>
<th>BLOG POST 6</th>
</tr>
</thead>
</table>

**B. Selecting an appropriate blogging tool**

Ning is an online platform for people to create their own social networks around specific interests. Every Ning network includes a common home page visible to each member of the social network. Ning also provides access to features that can be added or customized within the social network such as individual profile pages, individual member blogs, forums, chat, RSS, photo-uploads, video-uploads, music sharing, and event scheduling.

Ning was selected as the primary blog host to encourage students to write blogs related to Social Computing within a single online environment. At least half of the students already maintained their personal blog sites hosted by MySpace, Friendster, Multiply, Wordpress, LiveJournal, or Blogger, but for the purpose of the assignment, all students were required to join in the Ning network and maintain Ning blogs. Ning provided a professional space dedicated for the SOCCOMP class with all student blogs aggregated in a single site. From this, all student blog activity was reflected on the main Ning page and all students could read the blog post of one other. This set-up facilitated an environment where students could share content, comment, or react on each other’s blog posts easily.
If students were allowed to maintain their individual blogs with any blog host, then every student would need to worry about collecting their classmate’s URLs, adding these URLs to their own blogrolls, and viewing each blog individually. This set-up would be very time-consuming and will provide a weaker environment of knowledge sharing among students. This individual set-up was seen to be more difficult for the teacher to manage as well because it carries with it many logistical difficulties especially with large class sizes.

Other blog hosts like MySpace, Friendster, Multiply, Wordpress, LiveJournal, and Blogger were also evaluated before Ning was finally selected. Although MySpace, Friendster, Multiply each have a blog component, it was seen that blogging within these social networks would be more a leisure activity than an academic activity. Other blog hosts such as Wordpress, LiveJournal, and Blogger are options for students to use as well, but are better used for individual, personal blogs rather than a course blog.

C. Data Collection and Analysis

All blog posts generated from the two groups of SOCCOMP students were compiled by the teacher. Data collection included individual analysis of blog postings. Each blog post was analyzed in terms of its content and writing style. Note that blog posts that were meant for class announcements and those were written beyond the assignment period were not included in the analysis.

1. Content

Blog content was analyzed based on what the student wrote about in the blog post. Each blog post was categorized to have content that was either limited classroom discussion or went beyond classroom discussion. Between the two categories, blog posts that go beyond classroom discussion exhibit deeper learning.

- **Limited to Classroom Discussion** - in this category, the student writes about something discussed from a class lecture or student report.
- **Beyond Classroom Discussion** - in this category, the student writes about something beyond any class lecture or student report, typically referencing the Web or other information sources.

2. Writing Style

Writing style was analyzed based on how the student conveyed information in the blog post. Each blog post was categorized to have an informative style of writing or reflective style of writing. Between the two categories, blog posts that are reflective writing exhibit deeper learning.

- **Informative** - in this category, the student writes in a more formal, instructional, or explanatory tone. Typically, blog posts categorized as informational show students enumerating ideas or providing definitions, descriptions, summaries, or explanations about a concept or technology tool in their blog post.
- **Reflective** - in this category, the student writes in a personal tone, with reference to self. Typically, blog posts categorized as reflective show students relaying experiences and personal stories, or expressing personal opinions, viewpoints, realizations, feelings, preferences, observations, and reactions in their blog post.
3. Cross Analysis of Content and Writing Style

Further analysis was done on each blog post to determine the cross analysis of content and writing style. The quadrants on Figure 1 map out the two categories from each. From this, each blog post was categorized under a specific quadrant, where:

Quadrant 1. In this quadrant, the blog post is described to be informative about topics discussed within class;

Quadrant 2. In this quadrant, the blog post is described to be informative about topics beyond class discussion;

Quadrant 3. In this quadrant, the blog post is described to be reflective about topics discussed within class; and

Quadrant 4. In this quadrant, the blog post is described to be reflective about topics beyond class discussion.

Student blog posts that fall in quadrant 1, 2 or 3 exhibit more of surface learning, while blog posts that fall in quadrants 4 exhibit deeper learning.

Findings

The structured group comprising 58 students generated 241 blog posts, resulting in an average of approximately 4 blog posts per student. The unstructured group comprising of 38 students generated 203 blog posts, resulting in an average of approximately 5 posts per student. From the count alone, it is seen that the unstructured group had greater participation in the assignment indicated by the higher average of blog posts per student (Table 2).

The frequency of blog posting activity was also analyzed and tallied periodically for the trimester (Figure 2). It can be observed that students in the unstructured group started with low participation, but increased significantly towards the end of the term. The structured group, however, started with a higher participation compared to the unstructured group but mostly maintained a steady level of participation towards the end of the term.

A. Content

In analyzing student blogs for content, each blog post was categorized to have content that was either limited to classroom discussion or went beyond classroom discussion (Figure 3). Results show that the structured group (SB) generated 223 blog posts (93%) that were limited to classroom discussion and 18 blog posts (7%) that went beyond classroom discussion. The unstructured group (USB) generated 118 blog posts (58%) that were limited to classroom discussion and 85 blog posts (42%) that went beyond classroom discussion.

These results show that both groups had majority of blog posts limited to classroom discussion. However, the difference between the two groups on each category is significant. Students from the unstructured group have a
greater inclination towards associating classroom discussions to new content from the Web while students from the structured group have a greater inclination to writing about classroom topics. Students who wrote beyond classroom discussion accessed content from various information sources such as:

- Researched facts, concepts, and information from the web
- Related websites, web articles, blogs, videos (from YouTube), comics or jokes, news
- A research study / statistical research
- An application of the concept or topic learned in class to another area such as business, marketing, education, games, and politics
- Personal surveys / interviews / experiments
- Other technology tools

It was also very common for blog posts that go beyond class discussions to have a referenced website link or article, a quoted paragraph, an embedded video / image, or a name referring to an expert / author / researcher. Students were also relating Social Computing topics to other areas such as business, marketing, education, games and even politics.

B. Writing Style

In analyzing student blogs for the writing style, each blog post was categorized to be either informative or reflective (Figure 4). Results show that the structured group (SB) generated 42 blog posts (17%) that were informative in style and 199 blog posts (83%) that were reflective in style. The unstructured group (USB) generated 50 blog posts (25%) that were informative in style and 153 blog posts (75%) that were reflective in style.

Both groups of students maintained a more reflective style of writing. An analysis of the frequency of reflective blog posts of both groups (Figure 5 and 6) show that majority of blog posts maintained a reflective style throughout the term. However, it is interesting to note that the unstructured group has a higher percentage of informative writing compared to the structured group. This is an effect from the type of content generated by the unstructured group. Since this group had “newer” content (beyond classroom discussion) presented in their blog posts, students would usually explain or describe the new information they found.
C. Cross analysis of Content and Writing Style

Results in Figure 7 show that the majority of blog posts from both groups fall under Quadrant 3 classification. However, it is interesting to see that the structured group generated blog posts that were more informative (15%) and reflective (78%) about topics discussed within class. On the other hand, the unstructured group generated blog posts that were more informative (18%) and reflective about topics beyond class discussion (24%). This result gives a more precise comparison of each group.

Figure 7 – Results on the Cross-Analysis of Content and Writing Style

Discussion

Giving students opportunities to move towards deeper learning is something teachers must consciously think of. In this study, blogging assignments brought about deeper learning in students evidenced by the content they generate and their writing style. Findings reveal that students showed deeper learning with an unstructured blog assignment design compared to a structured blog assignment design. Teachers planning future blog assignments for their classes can take insight from this result however may expect the following outcomes:

Both groups of students in this study had a minimum of six blog postings required to complete the assignment. The difference, however, which generated points of comparison, would be the factor of time-pressure since pre-set deadlines were assigned to the structured group. Time pressure was greater for the students in the structured group, but interestingly, this did not influence them to write more blog posts. The average number of blog posts per student in the structured group was less compared to the unstructured group. It was observed that most students who did not meet the pre-set deadline would no longer write a blog post for that week. Instead, they would just wait to write a blog post for the next deadline. From this, it can be seen that adding time pressure has a negative impact on student participation. It hinders students from blogging naturally because the writing process becomes more of a class requirement.

On the other hand, it seems that applying no time pressure at all in blog assignments will lead to most students participating towards the end of the term (as seen in the results of the unstructured group). This might be seen as a negative impact as well. However, looking past blog counts to the content generated from the unstructured group, students were writing more blog posts that went beyond classroom discussions. This is a more significant finding because it shows that even if students were blogging late in the term, they were reading or researching more on their own time, looking for new information that they could share with the class in their blogs. Students took advantage of the Web looking for online articles, research work, comics, videos, other blogs, and news related to topics in Social Computing. This outcome is supported by O’Donnell (2006) that blogging encourages associative thinking, a process by which students create mental connections or relationships. The process of searching for articles alone, sifting through hundreds of search results, selecting a link, reading the article, then deciding whether the article is related to the topic discussed in class, is evidence of deeper learning taking place.
Results from the cross analysis of content and writing style also show that students with time pressure (structured group) result in a majority of students writing about topics discussed within class, while students without time pressure (unstructured group) result in a majority of students writing about topics discussed beyond class. From this, it can be seen that giving students autonomy to decide what to write about and when to post blogs has a positive influence on students’ learning. This supports the statement pointed out by Glogowsky in his post about blogtalk, “Blogging is not about choosing a topic and writing responses for the rest of the term. It is about meaningful, thoughtful engagement with ideas” (2008).

Moreover, looking at the results in writing style, both groups of students maintained a more reflective style of writing. Students would write in a more personal tone with more reference to the self, and maintain this writing style throughout the term. From this, it can be assumed that both groups of students treated their Ning blogs as “personal blogs” rather than a “course blog”. It would seem that since the Ning platform is able to aggregate all blogs to a single dedicated social for the Social Computing course, students would treat their blogs as a venue for generating informative content about Social Computing. However, as seen in the results, a dedicated network of blogs did not influence the natural style of how students write blogs. The reflective nature of blogs still maintains within the social network.

**Conclusion**

From this study, it can be concluded varying blog assignment designs have an effect on what students write in their blogs (content) and how they convey information in their blogs (writing style). Evidence of deeper learning is brought about within a less structured blogging assignment. In terms of content, students participating in a structured blog assignment tend to generate content that is limited to classroom discussions. However, students participating in an unstructured blog assignment have a greater inclination towards associating classroom discussions to new content from the Web, thus content goes beyond classroom discussions. In terms of writing style, students maintain a reflective style of writing in both blog assignment designs. The reflective nature of blogs remains even when student blogs are all aggregated to a single network like Ning. Students can move towards deeper learning if teachers carefully select and design assessment for their classes. With the target of deeper learning, a blog assignment that has less structure is recommended.

**Recommendations**

Further studies on blogging and blog assignment designs can be implemented looking into the following:

- Factors of blogging behavior such as peer pressure and social presence
- Social learning, interaction, and learning communities through blogs
- Capabilities of knowledge organization through blogs
References


This paper presents a case study of student perspectives about contemporary learning environments in higher education. The research question examined was whether an unrestricted blog space supported reflective and critical discussion leading to the construction of knowledge. An unrestricted blog is where students autonomously work in an unstructured online environment. Data was collected using an online survey with questions focused on student perceptions of the type, frequency and effectiveness of their strategy use. Analysis was conducted using Bloom’s revised taxonomy to determine whether student strategy use was sufficient to support the construction of knowledge. Implications are drawn for higher education pedagogy.

Keywords: Blog, higher education, cognitive investment

Introduction & Research Question

The current generation of higher-education students are familiar with Web 2.0 technologies and they are beginning to demand the use of complex and intelligent e-learning resources (Wang, Huang, Jeng, & Wang, 2008). This paper presents a case study of student perspectives about contemporary learning environments in higher education.

Blogs provide an environment that potentially supports an active process of thinking and learning (Goh, Dexter, & Murphy, 2007). They allow interactivity and, through the expression and discussion of individual ideas, a forum for learning (Williams & Jacobs, 2004). They can provide a record of conversation and evidence of collaboration that can be used by group members as a basis for thoughtful dialogue (Hanlin-Rowney, et al., 2006) allowing the development of common meaning to be constructed from multiple perspectives (Marshall, 1995).

The central question examined was whether an unrestricted blog space supported reflective and critical discussion leading to the construction of knowledge. An unrestricted blog is one where students are tasked as a group to independently solve a problem through online interaction. It is unrestricted in the sense that there is no input or oversight by a teacher during the discussion process, nor are students given a structure, such as being allocation of roles or provided with writing frames. They are responsible for deciding when, how and what they will interact in the blog environment. In other words, the participants are required to become active learners, engaging behaviourally and cognitively through an online discussion to describe, organise and process information. Of course, even within an unrestricted blog there are still definite boundaries provided by the students’ knowledge and perceptions of the task, context, peers and teacher expectations.

Nonetheless, we drew upon the idea of ‘unrestricted’ in order to construct a learning environment where students were able to personally construct meaning rather than being herded or constrained (Jonassen, Davidson, Collins, Campbell, & Haag, 1995). Our role was limited to observing and formally describing how the students made sense of working in this context.
This method was chosen deliberately because the apparent absence of formalised structure mimics to a certain extent how students engage with messaging and networking sites. This allowed us to explore how experience of virtual personal and group space, with its linguistic shorthand and associations with leisure and informality, supports academic exchange which requires precision and decision making based on evidence.

**Methodology**

A case study approach, as described by Yin (2003), was employed to generate quantitative and qualitative material for analysis. The case study involved a cohort of approximately two hundred students from La Trobe University in Australia. The students were in the second semester of their first year of a four year primary teaching degree.

The students were asked to work in small groups to explore an education related theme using a blog as their principal means of interaction. While face to face contact was allowed for an initial discussion, to set up the blog and to prepare any final submission, the majority of the work was expected to be done using the blog. Through it students were required to: discuss and debate the issue being scrutinised; determine cognitive strategies; work as a group with minimal input from lecturer; and make a group decision about any final conclusions or solutions.

Data collection and analysis was based on the cognitive process dimension based on the revised version of Bloom’s taxonomy (Krathwohl, 2002). Constructing knowledge assumes the use of complex, or higher order, cognitive strategies including analysis, evaluation and creativity (Anderson, et al., 2001). This is in line with established practice (Schrire, 2006). Table 1 outlines the categories used for the transcript analysis and to prompt students during the self-reporting of posts.

**Table 1. Categories for transcript analysis and student self-reporting (Based on Bloom’s revised taxonomy)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remembering</td>
<td>Making a post with a personal opinion or idea</td>
</tr>
<tr>
<td>Understanding</td>
<td>Asking clarifying questions</td>
</tr>
<tr>
<td>Applying</td>
<td>Extrapolating the group’s posts against the task requirements to see if the group is working effectively</td>
</tr>
<tr>
<td>Analysing</td>
<td>Finding coherence in the group’s posts</td>
</tr>
<tr>
<td></td>
<td>Distinguish between relevant and irrelevant material, important and less important ideas</td>
</tr>
<tr>
<td>Evaluating</td>
<td>Judging the potential effectiveness of an idea</td>
</tr>
<tr>
<td></td>
<td>Making the decision about which idea is best</td>
</tr>
<tr>
<td>Creating</td>
<td>Coming up with alternative ideas or solutions</td>
</tr>
<tr>
<td></td>
<td>Designing and constructing the final product</td>
</tr>
</tbody>
</table>

Data was collected through an online self-report questionnaire conducted after the task was completed. The questionnaire gathered self-reported information on student familiarity with technology, the cognitive strategies used and their effectiveness and some measure of engagement with the task. While student self reports cannot capture the ongoing fine grain detail of cognitive processes, they do indicate student propensity for strategy use (Pintrich, 2004).

The survey was in the form of an online (self reporting) questionnaire conducted after the task was completed. It focussed on: (1) student familiarity with the technology, access to both computer hardware and the internet, their familiarity with and frequency of use of Blogs, Wikis, Podcasts, YouTube and other social networks, and when they used email and their familiarity with the protocols associated with this form of communication. (2) The types, frequency and effectiveness of the post they made when undertaking the blogging task about their own or other group member’s ideas, and the groups progress and achievement. (3) The level of engagement with or anxiety about the task in relationship to how much time they devoted to it and whether it developed them academically or professionally. (4) What problems they encountered in making the technology work for them, making the group function, and addressing the task fully. (5) What were the perceived advantages of using the blog in relationship to providing access to each other, and helping to develop a common understanding? This was introduced both to collect important contextual data that would frame the transcript analysis and provide thematic trends for the discussion of findings.
Findings

The student participants were asked about their level of access to the internet and usage of Web 2.0 technology. Overall, students indicated a high level of internet access either at University (98.9%, n = 181) or at their current place of residence (90.6%).

Students were generally not regular users of Wiki’s (10.1% overall gave a positive response to the statement “I use a Wiki regularly”, n = 179) and Podcasts (10.6%). Students were more regular users of Social Networks (86.6%) or You Tube (62.6%) sites.

Students were not regular users of a blog (37.4%), implying that the majority of students were not familiar with the use of blogging as a communication media prior to the task being implemented.

Table 2, below, shows five statements about student effort, interest, involvement and perceptions of challenge and anxiety associated with the blogging task. In terms of rank order, students perceived that the task was interesting and required a significant investment of time and effort, although it did not induce a high level of anxiety.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean score (n = 179)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I invested significant time and effort in this task</td>
<td>4.26</td>
</tr>
<tr>
<td>This task was interesting</td>
<td>4.23</td>
</tr>
<tr>
<td>Overall I was deeply involved in learning</td>
<td>4.16</td>
</tr>
<tr>
<td>This task was challenging</td>
<td>3.89</td>
</tr>
<tr>
<td>This task made me anxious</td>
<td>2.59</td>
</tr>
</tbody>
</table>

Note 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree or disagree, 4 = Agree, 5 = Strongly agree

Table 3, below, shows the transcript analysis and mean scores for student perceptions of the frequency and effectiveness of their use of cognitive strategies. The tables are organised using a revised Bloom’s taxonomy, cognitive process dimension.

<table>
<thead>
<tr>
<th>Analytical category</th>
<th>Transcript analysis</th>
<th>Student perceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Zero Count (%)</td>
<td>Post Frequency (%)</td>
</tr>
<tr>
<td>Remembering</td>
<td>10.5</td>
<td>11</td>
</tr>
<tr>
<td>Understanding</td>
<td>0</td>
<td>25.1</td>
</tr>
<tr>
<td>Applying</td>
<td>63.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Analysing</td>
<td>5.3</td>
<td>35.6</td>
</tr>
<tr>
<td>Evaluating</td>
<td>15.8</td>
<td>10.3</td>
</tr>
<tr>
<td>Creating</td>
<td>5.5</td>
<td>15.1</td>
</tr>
</tbody>
</table>

Notes

a. Based on analysis of a sample of nineteen blog transcripts, the percentage of transcripts with no posts from this category

b. Based on analysis of a sample of nineteen blog transcripts and 582 posts, the percentage of post in this category

c. Mean scores for question ‘How frequently did you post …?’ 1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Frequently, 5 = Very Frequently (n = 179)
d. Mean scores for question ‘How effective do you think your post was about …?’ 1 = Extremely poor, 2 = Below average, 3 = Average, 4 = Above average, 5 = Excellent (n = 179)

The category of ‘evaluating’ is used as an example to describe the data. In the context of blogging, evaluating refers to checking the group’s ideas against the education literature, critically examining the final product by looking for inconsistencies and fallacies, judging the potential effectiveness of an idea, and making a decision about which idea is best. 15.8% of the transcripts examined had no posts related to this category. Postings that could be categorised as evaluating were only 10.3% of the 582 posts examined. Evaluating was the perceived by
students as the least frequently used post, and those posts that were made were perceived as being below average to average in terms of effectiveness. This indicates that students were not adept at making judgements or being critical of other group members’ posts.

The student perception columns show the most frequently used blogging strategies employed by students were attempting to explain a post in detail and posting a personal opinion or idea. The least frequently used strategies were coming up with alternative ideas, constructing a visual representation to show how the group’s ideas might work, and making a criticism of another group member’s idea.

Students generally regarded the effectiveness of their posts as average to above average. The ranking of the students’ perceptions of effectiveness generally follow the same pattern as frequency. For example, the most often used strategies have the highest effectiveness ranking. The least frequently used strategy of making a criticism of another group member’s idea was the lowest ranked both in terms of frequency of use and effectiveness.

It can be seen that the most frequent postings are in the categories that call for less complex cognitive processes. Posting an idea or explanation are less complex processes than making a criticism, connecting ideas to learning theory, or seeking alternative ideas from other sources. The data shows there was a tendency, although not significant, for students to use less complex processes to complete the task requirements.

Students were asked an open-ended question about the problems they had experienced when blogging. Four themes were identified during the analysis and the coding shown in Table 4.

Table 4. Student perceptions of problems when blogging

<table>
<thead>
<tr>
<th>Themes</th>
<th>% (n = 159)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing posts was slower and more confusing than face-to-face communication</td>
<td>19.4</td>
</tr>
<tr>
<td>Timing issues; waiting for others to respond to posting, simultaneous multiple postings</td>
<td>17.0</td>
</tr>
<tr>
<td>Unable to access or use features of blog, internet problems, uncertainty about how to use blog</td>
<td>15.8</td>
</tr>
<tr>
<td>Some group members did not participate, or under-performed</td>
<td>14.5</td>
</tr>
</tbody>
</table>

Note. 33% of students indicated they encountered no problems during this task.

Students indicated concerns about continuity and clarity while communicating and discussing ideas in a blog. Although blogging could replicate the interactivity of a face to face discussion, it only became conversational if the group members were able to respond to each other’s posts within a reasonable time period. These timing problems meant that the conversation within the blog environment was out of sequence, leading to a perception of confusion. This confusion was also related to a perception that it was difficult to clearly communicate an idea or indeed to explain, analyse, justify and apply the meaning of an idea solely in writing.

Part of the difficulty of making meaning clear was that students perceived writing as an inefficient method of getting an idea across. An academic conversation, with all its nuances can be multifaceted and encompass many levels of understanding very quickly. Students found blogging could not replace this immediacy.

The following selection of student responses illustrates these points:

- It takes a lot of fiddling around, rather than just sitting down with your peers and talking about your ideas. (Student 23)
- Hard to clearly express ideas and understand others (Student 48)
- Well it’s not a real conversation (Student 73)
- It’s hard to show excitement and enthusiasm in a blog post (Student 101)
- You can’t be as honest or open about things over blogs (Student 107)
Sub-theme B: Technology and Its Impact on Learning, Teaching and Assessment Environments

Two general solutions were used to resolve blogging problems. First, several groups used alternative methods to discuss and complete the task. These included email, phone, Facebook and face-to-face meetings. Secondly, some groups used other communication methods, including email and texting, to ensure that all group members were aware when and how the blog was to be used.

Students were asked an open-ended question about the advantages they perceived in blogging. Four themes were identified during the analysis and the coding shown in Table 5.

Table 5. Student perceptions of advantages of blogging

<table>
<thead>
<tr>
<th>Themes</th>
<th>% (n = 171)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility, allowing contributions to be made at any time and from any space</td>
<td>46.8</td>
</tr>
<tr>
<td>A visual process of description, clarification and discussion of ideas over time</td>
<td>21.6</td>
</tr>
<tr>
<td>Technology was easy to access and use</td>
<td>18.1</td>
</tr>
<tr>
<td>Provided a record of discussion that could act as a reminder of task progress and show contribution of each group member</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Students perceived that the flexibility of the blog allowed them to communicate and work on the task from any location and at any time. This was particularly important for those students who either lived off-campus or who had employment and family issues that limited their availability for face-to-face meetings. Students also appreciated the ease of use of the blog, some describing it as an interesting educational tool.

Students also perceived the blog as a visual record of the thoughts and discussion of the group. A student could contribute in a thoughtful way, and these ideas could then be considered and discussed by other group members. The process of writing down ideas also forced students to become more precise in the way they wrote about their ideas.

The following selection of student responses illustrates these points:

- The thoughts of group members are made clear and precise (Student 12)
- A great way to show a conversation and communication between group members (Student 35)
- Blogs force you into writing your ideas and encourages feedback (Student 55)
- Writing our ideas down gave me a much better understanding of learning theories (Student 66)
- You get to think in-depth about your response (Student 91)

Discussion

Blogs allow students, at any time and from almost anywhere, to think about, post, reflect, analyse and evaluate ideas (Mimirinis & Bhattacharya, 2007; Wu, 2003). In this case, these advantages were appreciated by the students, although we argue that the full potential of the blog was not achieved. While the collaborative process was purposeful in the sense the students found the task interesting and invested effort, the task’s purpose of critically constructing knowledge required a greater use of higher order strategies including evaluating and creating.

The students tended to post personal opinions, but struggled to collaboratively analyse or evaluate these opinions in order to construct knowledge. This is consistent with Thomas’ (2002) finding that it is difficult to have a written online conversation that is both academic and interactive. Thomas argues that while there may be attempts at online discussion, there is frequently no coherent structure between the posts, and a lack of real collaborative knowledge construction.

There are several possible explanations for this variation in cognitive investment. In particular, students may have felt overwhelmed when using a process where they are required to make autonomous choices about effort or lack the knowledge and skills for effective participation (Ploetzner, Bodemer, & Neudert, 2008). Further, there is perhaps an assumption on behalf of academics that because students are familiar with online communication they can also use these technologies for academic purposes. For blogs to achieve their potential
in terms of the critical construction of knowledge, educators need to explicitly structure the learning experience to match the student context including the appropriate use of the technology; and prepare students to engage in and manage and interpret multiple online conversations.

There are undoubtedly a number of different approaches and strategies to achieve the desired outcome in online contexts, some of which can legitimately developed by the students themselves. In this case students were able to exert some control over how the task is completed because the environment in which they're working was not heavily regulated. Whilst this offered the opportunity to be creative the lack of structure can also be problematic when combined with a poor motivation and/or experience. Educators need to provide support and scaffolding during the early phases of the task to overcome this issue. They must also be mindful that support can also stifle intellectual growth because if it is too structured and fails to recognise the contribution an individual makes to his or her own development. Students must be allowed to explore different strategies and construct their own meaning. They must have scope for making choices. While it is important to provide students with a framework to support the development of knowledge processes there is a need to balance providing structure with a working space for students to explore emerging meanings without explicit teacher direction.

Concluding comment

Publishing space, including blogs, have great potential to utilise and further develop communication skills, creativity, leadership, technological proficiency and provide opportunities for multiple forms of active learning, collaboration and partnership providing they are used appropriately (Garrison & Vaughan, 2008). We contend that effective e-learning will emerge from considered pedagogical design, informed by the student experience and perspective. It is clear that context and the point of application are equally important as the desired learning outcome.

The limitations of this study need to be taken into account. The analytical framework was a useful sensitising construct that allowed the basic categorisation of student strategy use in the blog environment. However, the researchers remained mindful throughout of the limitations of any taxonomy (For example see Chan, Tsui, Chan, & Hong, 2002). For example, this framework is underpinned by the notion that there is an effective and relatively concrete process that can be used as a basis for examining blogging transcripts for levels of behavioural and cognitive strategy use in order to construct knowledge. It focuses on the students’ actions rather than any deep analysis of the level of thinking apparent in the outcome. There is also a tendency to consider the act of making a post a relatively artificial process. By artificial we mean a form of exchange that can be technically analysed without consideration of the multi-dimensionality, immediacy, subtly and nuances of face to face communication. However, despite this pitfall our analytical framework does provide a reference point for further research, particularly in-depth case studies of how students are negotiating the use of online media in higher education.

References


Distance Learning by Webcam: Creating a Flatter World or Just a Bumpier Ride?

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Information Communication Technology (ICT) impacts all sectors of education by providing means of electronic communication between teachers and learners. With increasing developments in technology, we are seeing further opportunities to forge international links and deliver more effective teaching through distance learning in Higher Education (HE). This paper will review the literature relevant to technology in the distance learning field and investigate the use of web camera technology in the delivery of a distance learning course. The study hopes to support the development of an international collaborative partnership between Roehampton University, London, and the Universiti Pendidikan Sultan Idris (UPSI), Malaysia. All data collected in this study will represent the thoughts and feelings of the students who are enrolled on the International Post Graduate Certificate in Teaching and Learning in Higher Education (Int PgCert LTHE) course in the academic year 2009 – 2010. The research is small scale and qualitative in nature with data being collected through on-line discussion blogs, questionnaires and e-interviews over a five month period. This research seeks to explore the value of the web camera as a viable teaching and learning tool in the delivery of distance learning programmes in HE. Results of the study highlighted the positive impact that the web camera had on the students, but its value was not seen in light of its pedagogical contribution; more in relation to the impact it had on the student experience overall.

Keywords: Technology, distance learning, higher education, international collaboration, web cameras

The Context of the Study

Developments in technology have been marketed to provide teaching and learning with much promise, opportunity and benefit (Njenga and Fourie, 2010) however educational research cannot cope with the speed at which technology is advancing (Guri – Rosenblit and Robertson, 2005). With this in mind, there is need for further clarification and a clearer distinction between teaching with and teaching about technology. The term ‘Blended Learning’ is becoming a more visible feature in HE programmes. It has been described by Stacey and Gerbic, (2007) as “the combination of modes of learning and teaching that is made possible through the mediation of ICT” (p166). This term helps us to develop a clearer understanding about the differences regarding learning through, or learning about ICT. To date, much of the focus surrounding technology has been centred around the actual development of the technology itself rather than the effects it has had on teaching and learning and its contribution to pedagogy. The Higher Education Funding Council for England (HEFCE’s) (2009) strategy, places particular support on this with regard to research in learning and suggests that research development should focus on student learning rather than the developments of the technology per se, thereby enabling students to learn through and be supported by the technology. A core aim of this strategy will be to support the embedding of e – learning in practice in order transform higher education into a more student – focused system. From this strategy, we can adopt a broad definition that e-learning is “any form of ICT...that support students and improve the management of learning” (p5) This has been further substantiated by the Department for Education and Skills (DfES) (2003) by raising concerns that “Technology is leading change at a fast pace, with a result that there is too little attention to exploring pedagogy made possible by e–learning” (P13).
With such increasing developments in technology, conventional methods of teaching in HE are being challenged. We also find ourselves better positioned to seek opportunities in creating international links and delivering more effective tutoring through distance learning. In the current economic climate, the UK finds itself amidst funding cuts to HE and therefore threatening the existence of a number of undergraduate and postgraduate courses. There is a greater need for universities to explore different and varied approaches in delivering such courses. In addition to this, there are added pressures for institutions to provide a varied route for students who wish to embark into HE, thereby attracting a wider demographic of student and meeting the widening participation agenda. In an article by Harrison (2010) David Willets, the universities minister for the UK was quoted saying that universities face “tough times ahead” and he expressed that they must find cheaper and more flexible ways to teach. The use of technology, such as the web camera, has the potential to contribute to a dynamic shift in teaching pedagogy, whereby students no longer need to be present on campus in order to receive face – to –face teaching from a UK based establishment.

This paper attempts to discuss how HE institutions can move forward to improve the quality of delivery in such courses. The technology itself will become the main focus for enquiry with particular regard to the student experience. This in turn will support discussions and debates such as Guri – Rosenblit (2005) and Robertson’s (2003) whereby they suggest that HE institutions in this position need to take a step back and reflect critically on questions regarding the use of technology and its contribution to an effective teaching and learning environment. Dermo (2000), in discussing the importance of looking at the student experience, argues that “there is relatively little research into what students think” (p203) and whilst we often make anecdotal assumptions based on reflecting upon our practice, it would be useful and interesting to put the web camera lecture session under scrutiny and gain first – hand data from the learners themselves.

**Literature Review**

The use of ICT has already had an impact on all sectors of education by providing the means of electronic communication both for individuals and groups of learners. Following these advancements, the online environment is becoming widely accepted as a key medium for learning in HE (Stacey and Gerbic, 2007). As to whether these developments are considered in a techno positivist (where the individual holds compulsive enthusiasm for the use of technology) or in the techno sceptic paradigm (where the individual is more cynical of all the promise that the technology holds) (Njena and Fourie, 2010) there is no negating that the use of technology will play a key role in the distance learning environment in some form or guise for the foreseeable future.

While there is an abundance of literature regarding to the use digital technologies, such as “internet mediated teaching, web – based education, online education, computer-mediated communication (CMC), e-learning, virtual classrooms and ICT” (Guri-Rosenblit, 2009:106) there seems to be little with reference to the use of the web camera and how it is being used to support learning. The review of literature for this paper will therefore explore the use of similar technologies in order to gauge an understanding of how the use of web cameras can be embedded in distance learning environment as a viable tool for teaching pedagogy. Donohue and Howe-Steiger (2005) claim that the marketplace of ideas, related to applications of digital technology, have become a “cacophony of jargon” (p21). This can often lead to the ambiguity of their roles within the formal educational setting. In order to clarify the specific use of the technology for the purpose of this paper the term Web Camera lecture (WCL) will be used to refer to the formal teaching and learning setting which has been made possible by a live link via the use of the internet from the Roehampton University campus, London to UPSI, Malaysia, using the web camera to facilitate.

In relation to an international collaboration in distance learning courses and the worldwide expansion of distance education in general, it is also important to raise the issue and the importance of quality assurance. When working in a trans-national collaborative nature between different institutions and cultures (such as the one in this paper). There needs to be agreement and flexibility within the programme to meet individual student’s needs. We must therefore, take into account methods of teaching delivery to ensure a high quality student learning experience. Stewart, Hong and Strudler (2004) highlight concern by stating that “there is only a modest amount of research pertaining to the evaluation of distance education courses particularly web – based courses at present” (p131). Although the focus of this study is to investigate the effectiveness of using web camera technology, it also considers the evaluative process that is imperative for quality assurance purposes. Those of us currently working to improve student learning experiences and pedagogical approaches to ensure our university programmes are effective and meet the quality agenda, are also seeking to exploit various technologies in order to do so. In order to deliver its promise of an improved system for of HE, academics and
teachers involved in these programmes have to ensure such tools become embedded within the educational change process.

The integration of e-learning in higher education pedagogy however, is a complex one. Laurillard (2006) says “it has the potential to be highly disruptive if we allow it to be” (p73), this is because it serves the very paradigm shift that educators such as Dewy’s inquiry-based education, Piaget’s constructivism, Vygotsky’s social constructivism, Bruner’s discovery learning, Schank’s problem-based learning and Laves socio-cultural learning, have been looking to achieve through the last century. The introduction of WCL’s within distance learning programmes has the potential to ensure that student led, constructivist approaches to learning are still achieved. It allows for barriers such as distance to be broken down and for individuals and groups to interact and construct their own learning environments. Garrison et al (2003) describe a similar technology, that of videoconferencing (VC) as an educational technology that “overcomes many of the objectives that people have to education that occurs anywhere beyond the face-to-face classroom” (p112). Further suggestion is made, that such a tool can also overcome the lack of interaction associated with correspondence study, “it provides a richer repertoire of communication modes unlike computer conferencing and it allows teachers and students to engage in the types of classroom teaching and learning activities that they are used to” (p112). Guri-Rosenblit (2009) also supports the notion that new ICT can be an immense attraction to distance teaching institutions as “they offer solutions to three major obstacles that have historically occurred in distance education” (p106). They have the potential to rescue scattered students from the isolation that distance education can often bring, provide them with interaction with the teacher as well as other peers and in reference to the e-learning, provide easy access to libraries and other forms of resources which was nearly impossible in the past. However the reality of this is less straightforward. In order to facilitate this learning environment, distance teaching institutions must have the appropriate infrastructure and conditions necessary to make use of the full potential of these new technologies. With reference to VC, Carter and Heale (2010) state that “it is all about advance planning and multifaceted support – that is technical, pedagogical and human” (p115). Strong technical support is a must, with access to persons and resources at all times. This means that although in the long term WCL and VC can appear to be cost cutting and time effective methods of delivering distance learning, the institution embarking on the use of such technology must make a solid investment to ensure the correct resources are first in place. Therefore, the teacher cannot rely solely on sound pedagogical delivery to ensure the success of such lectures.

Garrison and Anderson (2003) state that “the educational community has barely begun to appreciate the collaborative capabilities of e-learning” (p22). They also believe that the use of e-learning and similar constructs can support “asynchronous, collaborative communication in a dynamic and adaptable educational context” (P22). There is an argument therefore, that e-learning re-values the traditional ideal of a community of learners. This is based on the core principle that a community of learners is an essential ingredient where higher order learning is a desired outcome. This clearly links to the existing ideals of HE where the learning experience will be meaningful, worthwhile and continuous (Garrison and Anderson, 2003). Garrison et al (2003) believe there to be three key elements needed in order to create such a community, these are; cognitive presence, social presence and teacher presence. Cognitive presence is defined by Garrison et al as being “the extent to which learners are able to construct meaning through sustained reflection and discourse within the community of inquiry” (p11). This highlights the importance of the intellectual presence of the student within the session and their engagement with the material combined with the ability to have a social presence, whereby the participants in the community of inquiry, project themselves socially and emotionally as ‘real’ people through whichever medium of communication is being used (Garrison and Anderson 2003). The final component part is of teacher presence, which has been defined as the “design, facilitation and direction of cognitive and social processes for the purposes of realizing personal and meaningful, educationally worthwhile learning outcomes” (Garrison and Anderson 2003:94).

The challenges faced by the teacher in the VC environment have been highlighted in work undertaken by Carter and Heale (2010). Through their experience of delivering VC’s to undergraduate nursing students they identified that the teacher will need to learn to manage a very different delivery experience they would need to continuously request feedback from the participants about a number of things, such as can they hear me and do they understand the concept I am presenting? There is also a greater need for the teacher who is delivering, to be brave and be more attuned to body language in order to gauge the student’s experience (Cater and Heale, 2010). Although you might argue these are all challenges faced by teacher’s who are in the on-campus classroom setting; the difference is that when teaching via VC, it is virtually impossible to know what type of experience the learner is receiving without asking, as you are unable to view the learning from their side of the camera.
Methodology

The major focus of this research considers the implications for practice within an international collaborative partnership between Roehampton University and the Universiti Pendidikan Sultan Idris in delivering the International Post Graduate Certificate in Teaching and Learning in Higher Education. UPSI is currently the only university of education in Malaysia, who are seeking to plan and offer more systematic and formal certificate or diploma training programmes for lecturers in higher education institutions. Initially, during the development year (2009-10), the programme is being offered to lecturers currently working at UPSI, with the view that it will be extended to other government and private HE institutions from 2010-2011 onwards. The research aims to support the reflective nature of this certificate and provide information regarding how useful the WCT can be as a major tool in the delivery of such a programme.

Earlier this paper stated that the process of evaluation in distance learning courses is important for quality assurance purposes. In the light of this, the methodological process for this research needs to provide students with an opportunity to reflect openly with regard to their experiences of the WCL’s in order to impact on future delivery. This research therefore takes the form of small scale action research, which is relevant to the context setting in which it was conducted and will aim to support the development of the teaching aspect of this programme for subsequent cohorts. Considerations for using this method have relied heavily upon qualitative approaches in the data collection process. According to Birley and Moreland (1998), a professional conducts this type of research in their own activity with a view to bringing about an improvement in their own practice. Although small scale and context specific, the research may be of value to other HE institutions who conduct similar distance learning courses and who wish to embed web camera technology within their future teaching.

After discussions between the two institutions, it was decided that the data being collated will draw upon themes that are directly drawn from the participant responses. This was attempted primarily through the use of a questionnaire tool, but was also triangulated by other methodology including blog posts on the virtual learning environment of Study Zone (SZ) and e-interviews. At the time of the programme being delivered, there were 21 students enrolled on the Int PgCert LTHE, all of whom were current practicing lecturers at UPSI. Informed consent was received in the first week of January during an intensive (face-to-face) teaching week at UPSI. Participation and involvement in the study was purely voluntary and participants were able to indicate if they wished to take part in the e-interviews, after the completion of the e-questionnaires. The research tools mentioned were deemed by both university partnerships as being appropriate to a distance learning environment.

Data was collected over a five month period with responses by the students being received in the form of blogs and e-interviews immediately impacting the delivery of the WCL’s.

It is important to recognise that the data collected is not hard scientific fact and as Dermo (2009) states “opinions are not easily expressed in a quantifiable form, so great care must be taken when drawing conclusions based on that data” (p205). Findings from this data are not universal truths but can been as tentative generalisations that have emerged from the theory.

Discussion blogs

The questions posted on the discussion blogs (used through the virtual learning environment tool of SZ) intend to be informal and open to allow for honest discussion from all participants on the course. Consideration needed to be made regarding how the discussion blog should be phrased as all the students were considered as having English as an additional language (However in saying this it must be noted that English level amongst students was the equivalent of International English Language Testing System at level 6.5, as this was a requirement for enrolment on to the course). Having experienced three web camera lectures by this point (from October-December 2009) it meant that most students were in a position to comment about the sessions in some way having either attended either some or all. The two questions that were posted on SZ for students to comment were as follows:

“What do you think about the web camera video lectures?” (January 2010)

“In the February session I have tried to act on comments made in the last few posts and would welcome your thoughts. Do you feel these sessions have changed / progressed at all? What do you find useful, what comments do you have that could further improve these sessions?” (February 2010)
E-questionnaires

Out of a cohort of 21, all were invited to take part in completing the questionnaire. All questionnaires were sent to all students via their email accounts after three of the WCL’s had been conducted. As mentioned previously, participation in this process was purely voluntary. Responses from the students were disappointing as there was only a 29% return. Numerous attempts to engage the students had been made however reasons were given as to why only this number had been returned. Students commented that time constraints and their attendance at WCL had made it difficult to respond to many of the questions. This was especially true if students failed to attend at least one out of the three WCL’s. Questions in the questionnaire explored the following areas: prior experience of using a web camera, attitude towards the technology, levels of student engagement in the WCL’s and impact of these sessions in meeting learner’s needs.

E – Interviews

The final method of data collection was through an email interview (e-interview). Only students who agreed in their consent form to take part in the e-interviews were used. The e-interviews took place after all WCL’s had been delivered (May 2010) and when students had returned their questionnaire responses. Questions in the e-interviews were based on personal responses made in the questionnaires. This provided an extended response to the short answer questions of the questionnaires.

Results

After the responses to the blogs, questionnaires and e-interviews had been collated, the data was analysed to identify any common themes that had emerged in response to the WCL’s. The main themes that reoccurred throughout all responses related to pedagogy, student experience, technology, organisational considerations and contribution to learning. All the comments that had a direct link to these themes were collated in a table and then totalled up to see which theme had been the most significant in terms of student’s response. The results of which can be seen below.

<table>
<thead>
<tr>
<th>Student</th>
<th>Pedagogy (P)</th>
<th>Student Experience (SE)</th>
<th>Technology (T)</th>
<th>Organisational Considerations (OC)</th>
<th>Contribution to Learning (CL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>14</td>
<td>11</td>
<td>12</td>
<td>6</td>
</tr>
</tbody>
</table>

The results indicate that the most significant topic for discussion by the students, related to their own personal experiences in the WCL’s as 14 comments were made in relation to this in total. The other most significant comments that were made related to how the session could be improved through the organisation and having ‘working’ technology. It is important to note at this point that in the final three WCL’s the technology failed on each occasion, with 2 out of the 3 session having to be abandoned and rescheduled. This may have been a significant factor as to why this theme was more visible in the e-interviews as compared to the questionnaires. The least number of comments made were in relation to pedagogy and the contribution that the session had in relation to the students learning. Although the student experience was mentioned by all participants who took part in the e-interviews, this related mainly to the emotive and social side of the experience and not how the experience had contributed to their overall learning during the course.

Out of the completed responses all participants reported that they would be happy to undertake another course in the future that involved the use of web camera technology. The questionnaire highlighted a few key points. At the start of the course none of the participants had used web cameras in their professional role before. Their
initial responses were positive with all commenting that they had found the sessions either informative or enjoyable. However three of the students stated that they found it difficult to be included within these sessions. Reasons for this were explained by student 1 as “This was my first time web cam sessions and I don’t know how to be involved and it is a little awkward to me”. Student 2 commented that “I do get involved a few times; although I think I am a good listener than speaker”. Student 6 who’s English was deemed stronger, mentioned that most of the time she would get involved in the sessions but also commented that “I don’t like people pointing to me as though they want me to answer their question!”

Similar to the e- interviews the themes arising for the questionnaires were also in relation to student experience, organisation considerations and technology. When asked what could be done to improve these sessions, comments such as “Technical errors/problems sorted”, Time consuming due to technology failure…more effective when we get notes before class” and “Giving lecture materials before the lecture…sometimes I am not in a position to see the screens so well”.

When asked to discuss what makes an effective lecture in HE and what makes and effective WCL, the responses could have actually been applicable to both. However what became apparent was a lot more emphasis was placed on the student to be organised as well as the lecturer in the WCL setting. Student 4 commented that the WCL’s must have “Well prepared participants who know the objectives of the lecture…good communication between lecturer and student” compared to the same student reporting that an effective HE lecture places further emphasis on the lecturer “getting students to be involved and the way/method the lectures are conducted must be suitable for the audience”.

Conclusion

As predicted by Oliver and Trigwell (2005), when learners’ perspectives were researched, they expressed an understanding of the benefits of both on-line and face – to face interaction. The use of the web camera within this study has enabled a group of students and their tutors to make regular face – to – face contact. This has been in spite of the geographical distance between them. This technology has generally been considered positive and well supported by the participants, as it has changed their experience of distance learning. It has therefore unequivocally become a valuable tool to ensure such a programme is viable and also ensures that the ‘personal’ approach is maintained in distance learning education. The results have indicated that there are clearly considerations to be made in regards to the failure of technology and although this has been ‘tolerated’ by the staff and students involved in the programme so far, it may only be matter of time before these challenges become a significant barrier to the existence of the programme. This has been evident in the sheer number of comments that were made in relation to technology failure from the data.

They key areas that arose for students throughout the WCL’s were in relation to student experience, organisation considerations, technology, pedagogy and contribution to learning (in that order). Future research into the use of WCL on this programme may wish to explore these key themes again and see if there are any significant changes that occur with a new cohort. If, for example, the issues relating to the technology and organisation are addressed, then hopefully similar studies maybe able to uncover some deeper understanding of how the technology can contribute to the students learning and the teaching pedagogy.

In regards to the research aims, the study has set out to address what it had hoped and obtained key information in relation to how web camera technology can affect the delivery of a distance learning course in higher education. In addition, the responses from the e-interviews; discussion blogs and questionnaires have indentified some key areas of how the programme can be improved, when delivering through a WCL environment in the future. This has been of huge value to the tutors involved in delivering the pilot of this programme.

The web camera technology in this study has enabled a more dynamic and interactive approach to distance learning on the Int PgCert LTHE. Although it cannot answer if this is the most effective way to deliver distance learning to all programmes, it has provoked the following thoughts. Firstly, regardless of the tools we use and the students we work with, it is the organisation, engagement of the student and the application of what we do that is of educational value. Secondly, effective teaching is not simply about the technology itself. Educators will be continuously asked to reflect and reinvent the ways in which they teach. Embracing new technology is part of that. Finally, this study has reinforced, that students still value their own personal experience in the teaching and learning process and that it is this, above all else, that is of paramount importance and therefore should be to us as well.
References


Positive Effects of Teaching Using MAYER’s Design Principles

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Nowadays, there are various learning applications designed using multimedia elements. Most of them were believed to be able to attract the attention of students with the stimulation of the multimedia elements. However, if the designer of the learning applications does not consider any design factors or theories in the development, the products can be considered failed. This is due to the over usage or imbalance of the multimedia elements in the learning applications would bring negative effect of using multimedia in teaching. Hede and Hede (2002) had discussed the cognitive load to learners when they are asked to look at a screen that is filled with too many multimedia elements. Besides that, Richard Mayer (2001) in his theory on “Seven Design Principles” also mentioned before that with proper handling on the multimedia elements would bring great benefits to the learners where the students would enjoy the positive effect from the elements. In consequence, they can have better retention rate based on what they have learned from the learning content designed in multimedia. This paper discussed the findings from a case study conducted at INTI University College with only a class of students involved. It would discuss each design principle applied in the design of learning materials. The learning materials were used in teaching two different learning environments – face-to-face teaching using the learning materials to replace PowerPoint slides, and independent learning using the learning materials. The acceptance and preference on the usage of multimedia elements in the learning content were gathered through distribution of questionnaire and would be shared in this paper.

Keywords: Multimedia effects, design principles, learning content, interactive multimedia

1. Introduction

1.1 Why Multimedia?

Multimedia has been a popular choice among many educators, trainers and designers who are involved in designing learning content. Most of us have witnessed the usage of multimedia in many areas in our society. To name a few, we always see the multimedia application in entertainment (games, movies), marketing (advertisement, brochures), government (online government websites) and education or training (e-learning materials, e-books, simulation, virtual reality application). From all these examples, we have to accept the fact that multimedia is driving the force of increasing the level of entertainment that we are enjoying nowadays. We have to accept that multimedia can bring positive effect in one or two ways in the usage of it. The most obvious benefit is to capture your attention. That is why people like to watch movies like “Jurassic Park”, “Transformers”, “Avatar”, “Happy Feet” and etc.

1.2 Effects of multimedia in teaching and learning

Without denying the strength or benefits of multimedia usage, it’s popular in everywhere and we can enjoy the multimedia application at anywhere or anytime. Due to this, many universities have introduced online learning courses where lecture notes are designed using multimedia elements and uploaded to universities’ intranets or their own Learning Management System (Alessi and Trollip, 2001).

Many discussions have been taken place in worldwide about the positive effects received in teaching and learning process if multimedia is involved. A very good example to be shared is there was a research conducted in Malaysia, at Multimedia University, where students’ skills were assessed in problem-based learning environment using multimedia technology. The results were positive and proven that multimedia technology can
be an effective tool in education (Neo & Neo, 2001). Students would be acquiring the knowledge best if they are involved actively in the learning process where they are given the chance to navigate and control the multimedia contents by themselves. More promising positive results in using multimedia in teaching was reported in another study took place in Rowan University, United States where students achieved better understanding and lesser time to complete assignments (Nicholson & Nicholson, 2010) after they were taught on MS Excel and MS Access using video.

However, there are also some drawbacks of multimedia being reported. In Hede’s report (2002), he reported researched conducted by some researchers (Dillon & Gabbard, 1998) had concluded the effects of multimedia did not really improve the learning process. Therefore we should not be overjoyed with the usage of multimedia elements. Why? It was because the designers of the learning content did not design the learning application based on proper design theories. The multimedia elements were simply thrown in and always based on the preferences of the designers. Due to this, we could not achieve what we wanted to when we use such learning contents. We need to understand how we can achieve better effects in multimedia learning and in order to do this we can refer to Hede’s model (2002). It is an integrated model to illustrate the relationships drawn among various variables that determine the impact of multimedia in different learning situations. The variables identified are as the following:

- Multimedia input (three elements: visual input, auditory input, learner control);
- cognitive processing (two elements: attention, working memory);
- learner dynamics (three elements: motivation, cognitive engagement, learner style); and
- knowledge and learning (four elements: intelligence, reflection, long term storage, learning).

Therefore, the design of multimedia application needs to be carefully planned and woven to achieve the positive effects or great impact towards the learning process. This could be supported by a recent study conducted by Guan (2009) in Taiwan where students were proven to have achieved more efficient learning process using a proper combination of multimedia elements where students were not overloaded with unnecessary multimedia effects.

### 1.3 Interactive Multimedia

On top of the proper design principles applied in any multimedia application, we also need to consider the interactivity components in the learning contents. In this study, the students were given the opportunity to navigate the interactivity multimedia contents when the lecture was conducted. By browsing through the multimedia contents, the students participated in the learning process by reading the contents, control the sound and the animation or video. According to Vaughan (2003), if students are allowed to interact with the multimedia applications, students will be able to achieve better retention rate.

According to Sims (1997), “interaction is intrinsic to successful, effective instructional practice as well as individual discovery.” (Sims, 1997) Incorporating multimedia elements in the learning contents can help in stimulating our senses while navigating the learning contents, and at the end we would be able to capture the learners’ attention and also to achieve better retention rate. (Reeves, 1998) A good interactive multimedia application would create an active learning process where the learners are involved in every single activity. This could be also reflected by the statement of “Multimedia places a high degree of responsibility into the hands of the users to drive the learning process.” (Neo, Neo & Yap, 2008)

Using multimedia technology in teaching provides opportunity for students to be engaged in the learning process and they were motivated and active throughout the whole process. Hence, learning outcomes of the study were achieved successfully. (Neo & Neo, 2010)

### 1.4 Mayer’s Design Principles

One chapter was selected for this study which was about Computer Output. This chapter was divided into two modules, each module equivalent to one hour lecture. They were designed based on the Mayer’s (2001) design principles. The design principles incorporated into the interactive multimedia module are listed in the table below:

<table>
<thead>
<tr>
<th>1. Multimedia Principle</th>
<th>Students learn better from words and pictures than from words alone.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Spatial Contiguity Principle</td>
<td>Students learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen.</td>
</tr>
</tbody>
</table>
Table 1: Mayer’s seven design principles (2001)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporal Contiguity Principle</td>
<td>Students learn better when corresponding words and pictures are presented simultaneously rather than successively.</td>
</tr>
<tr>
<td>Coherence Principle</td>
<td>Students learn better when extraneous words, pictures and sounds are excluded rather than included.</td>
</tr>
<tr>
<td>Modality Principle</td>
<td>Students learn better from animation and narration than from animation and on-screen text.</td>
</tr>
<tr>
<td>Redundancy Principle</td>
<td>Students learn better from animation and narration than from animation, narration, and on-screen text.</td>
</tr>
<tr>
<td>Individual Differences Principle</td>
<td>Design effects are stronger for low-knowledge learners than for high-knowledge learners and for high-spatial learners rather than for low-spatial learners.</td>
</tr>
</tbody>
</table>

2. Methodology

The students involved in this study group were all business students, from the programme of Diploma in Business Administration (DBAD). Majority of the students just finished their secondary school studies, in other words, they just finished SPM for local students or O-levels for some international students. All of them were required to enrol into this CSC178 Information Technology Principles, a core subject in their programme. This subject was also the first IT subject introduced to this group of business students.

This is considered a case study which was conducted in week 7 of a 14-weeks semester. This case study intended to find out the students’ performance in different learning environment. During the conduct of the study, the class was divided into two groups. The two groups were exposed to the interactive multimedia module but in different learning environment – conventional teaching environment and online web learning environment. Each group would repeat the same activity for 2 modules in the chapter (M1 = Module 1, M2 = Module 2).

Group one (G1), which was referred to multimedia group where students were taught in face-to-face approach using the interactive multimedia module in the environment of a computer laboratory. They were allowed to browse along the interactive multimedia module when the two lectures were conducted. In this report, we referred them as G1M1 and G1M2.

Group two (G2), which was the independent learning group where the students were allowed to experience the interactive multimedia module in web-based environment for both modules. Throughout the whole process, even though students were on their own, the lecturer was present in the computer laboratory. We referred them as G2M1 and G2M2.

In order to assess students performance and to find out the impact of using interactive multimedia application in each learning environment, students were required to complete a set of 20 multiple choice questions (Pretest) before the lesson of each module. Straight after the lesson, they did the same set of questions (Posttest). During the conduct of this study, students learning behaviours were observed. At the end of the study, a CAL survey questionnaire (Kennedy, Petrovic & Keppel, 1998) was given to collect feedback about the learning approach and opinion on the design of the interactive module.

This study was only a case study where only small number of students was involved, and it intended to help to justify a further research would be needed and bigger group of students would be involved in future studies.

3. Analysis and Discussion

3.1 Pre-test and Post test

During the conduct of the study, the number of students involved is listed below:

- G1M1 = 24
- G2M1 = 26
- G1M2 = 21
- G2M2 = 21
The following tables show the one-sample statistics for both groups after they did the Pretest and Posttest for module 1 and module 2.

### Table 2: One-Sample Statistics – G1M1

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>24</td>
<td>8.46</td>
<td>2.813</td>
<td>.574</td>
</tr>
<tr>
<td>Posttest</td>
<td>24</td>
<td>11.92</td>
<td>3.006</td>
<td>.614</td>
</tr>
</tbody>
</table>

**One-Sample Test**

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>14.732</td>
<td>23</td>
<td>.000</td>
<td>8.458</td>
<td>7.27 to 9.65</td>
</tr>
<tr>
<td>Posttest</td>
<td>19.421</td>
<td>23</td>
<td>.000</td>
<td>11.917</td>
<td>10.65 to 13.19</td>
</tr>
</tbody>
</table>

### Table 4: One-Sample Statistics – G2M1

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>26</td>
<td>8.42</td>
<td>2.419</td>
<td>.474</td>
</tr>
<tr>
<td>Posttest</td>
<td>26</td>
<td>12.88</td>
<td>3.351</td>
<td>.657</td>
</tr>
</tbody>
</table>

**One-Sample Test**

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>17.752</td>
<td>25</td>
<td>.000</td>
<td>8.423</td>
<td>7.45 to 9.40</td>
</tr>
<tr>
<td>Posttest</td>
<td>19.608</td>
<td>25</td>
<td>.000</td>
<td>12.885</td>
<td>11.53 to 14.24</td>
</tr>
</tbody>
</table>

### Table 6: One-Sample Statistics – G1M2

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>21</td>
<td>6.81</td>
<td>2.205</td>
<td>.481</td>
</tr>
<tr>
<td>Posttest</td>
<td>21</td>
<td>11.48</td>
<td>2.857</td>
<td>.623</td>
</tr>
</tbody>
</table>

**One-Sample Test**

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>14.152</td>
<td>20</td>
<td>.000</td>
<td>6.810</td>
<td>5.81 to 7.81</td>
</tr>
<tr>
<td>Posttest</td>
<td>18.408</td>
<td>20</td>
<td>.000</td>
<td>11.476</td>
<td>10.18 to 12.78</td>
</tr>
</tbody>
</table>
### One-Sample Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest score</td>
<td>21</td>
<td>6.33</td>
<td>2.477</td>
<td>.540</td>
</tr>
<tr>
<td>Posttest score</td>
<td>21</td>
<td>11.81</td>
<td>2.379</td>
<td>.519</td>
</tr>
</tbody>
</table>

**Table 8: One-Sample Statistics – G2M2**

### One-Sample Test

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest score</td>
<td>11.719</td>
<td>20</td>
<td>.000</td>
<td>6.333</td>
<td>5.21 - 7.46</td>
</tr>
<tr>
<td>Posttest score</td>
<td>22.744</td>
<td>20</td>
<td>.000</td>
<td>11.810</td>
<td>10.73 - 12.89</td>
</tr>
</tbody>
</table>

**Table 9: One-Sample Test – G2M2**

It is very obvious that from the statistics above, the difference in mean score for G1 and G2 is quite close to each other. However, group two students obtained slightly higher mean score if we compared to the group one students. It could be the learning approach undergone by group two students achieved better retention rate through the use of the interactive multimedia application.

### 3.2 Observation

**Group one**

Students felt excited to have their lesson in computer laboratory setting. They were excited when they saw the interactive multimedia application since they always see MS PowerPoint slides used in the classroom teaching for most of the other subjects. Most of them were eagerly to start browsing the interactive multimedia module before the lessons started when they knew they were allowed to navigate along the contents when the lecture was going on. It was obvious that students felt motivated and excited about the lesson because they were given the control to the interactive multimedia module. However, there was one weakness observed in this learning approach, a few students were not paying attention where they were browsing Internet in the computer laboratory.

**Group two**

This group of students was excited when they were informed to have independent learning as it was their first time ever experience. Lecturer was there throughout the learning process for each module to support the students if anyone would like to clarify anything related to the contents. It was quite motivated when some students were actually copying the information from the web-based application onto their note-pads. The students also made use of the search function provided in the module. After the lessons completed, some students approached the lecturer and asked if they could have more of this for the following chapters and they also requested to have access to the modules. As the same for group one, there was weakness identified in this learning setting, some students quickly browsed through the module without really paying attention to the contents.

It was very obvious that throughout the observation process both group of students were excited not only because it was the first time of exposure to such setting of learning environments but also the fact of using multimedia in teaching would create excitement for students because they were engaged in the learning materials and learning process. (Neo & Neo, 2009)

### 3.3 Feedback

From the survey conducted, there was positive feedback received from the group one where they liked to see the interactive multimedia module. Students were asked what they liked about the module, some of the answers obtained were:
“The module are arranged in logical sequence”

“The video shown in the module made me happy”

“Easy to let me understand”

“Great graphic”

“User-friendly and easy to use”

Finally, for group two, they gave similar comments to group one. Students reported that they found it interesting and they enjoyed it since they could learn at their own pace. The only additional comment was “able to learn at own pace by having full control during the lecture”. The students were given the opportunity to have independent learning where they could navigate the multimedia contents on their own, where they could always revisit the topics that they would like to have revision on. They would not feel shy if they were slow learners because they would not be forced to follow the pace of the rests of the students. They also highlighted another important point where they preferred the presence of lecturer even though they were having independent learning. Moreover, they could visit other websites to find other additional information on any topic they want.

4. Conclusion

From the Pre-test/Post-test scores, tutorial questions results and the survey conducted to the two groups of students show that students’ performance improved. Using the Mayer’s Design Principles in designing the learning materials did help to achieve better balance and combination of multimedia elements. Hence, students could have better interactivity with the learning modules and achieve better understanding. From the surveys, we could find out what students preferred to see in the module and the learning environments are almost quite similar. Therefore, this paper would like to highlight that with the proper usage of multimedia elements would definitely help in improving students’ performance in the teaching and learning process. It had proven that the Mayer’s Design Principles could bring out the positive effects of using multimedia in teaching. The paper reported the different results obtained when students learned in different setting of learning environments. Not forgetting to mention, there was limitation in this study due to the number of students involved as this was only a case study. More significant statistics would be needed to prove this study in future when bigger group of students are to be involved and the details of the CAL survey to support the findings.

References


Online Social Presence: An Exploratory Study on the Extent to Which It Is Experienced in a Facebook Community for Open and Distance Learners

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Web 2.0 technologies are wonderful online tools that open a whole new arena for all types of information dissemination, interaction and collaboration. Coupled with the fact that it is free and freely available to virtually anyone and everyone who has Internet access, it is a shame not to mine its potential in enlarging the learning space and improving the learning experience of learners. One such tool is Facebook, the renowned and popular social networking site which currently registers a cool 300 million accounts. While educational institutions explore various options that Facebook offers with regards to communicating and interacting with learners, an important aspect of its value in developing and maintaining social presence ought to be looked into. This paper describes how Facebook was used to support learning in an open and distance learning programme. It also presents findings from an online survey examining the perception of Facebook fans regarding their Facebook experience, in particular the extent to which they perceived social presence. Discussions are made with reference to the extent of success in coming across as ‘real’ in the virtual community, in connecting to learners and in meeting learners’ learning expectations. Implications on how to further use it more effectively and suggestions for further research are also presented.

Keywords: Social presence, Online community, Facebook, Open and distance learning

Introduction

Facebook has become a popular social networking website and is also considered one of the main online communication tools today. People are fast adopting Facebook not only for socializing activities but also for political, religious and educational purposes. Despite being in existence for only five years, there are currently 300 million people with Facebook accounts (Murrell, 2009). More and more groups are being established to keep up with members and to disseminate ideas and opinions.

Benefits of using Facebook in education

Realizing that there is great potential in the use of Facebook in education, several higher education providers in the United Kingdom such as Warwickshire College and Gloucestershire College and Murdoch University in Australia have implemented the use of Facebook in their educational system and have found it to be effective (Klingensmith, 2009). Both colleges reported an increase in their retention rates. Further, Klingensmith noted that students at Gloucestershire College maintained their performance when a Facebook group was implemented in their individual course. The curriculum manager of the college reported that besides keeping up with friends and staff of the college frequently using Facebook, instructors and students also use it for academic discussions.

In his article Facebook + Education =?, Wong (2009) stated “the interesting difference with using Facebook is that often students will take pieces of information and then repeat it back to their own constituents groups...students (are) mentoring and advising other students on affairs that matter to them and also matter to us.” Using Facebook in education seems advantageous for the learning community. According to Munoz and
Towner (2009), “Facebook helps instructors connect with their students about assignments, upcoming events, useful links, and samples of work outside of the classroom”. They strongly believed that “Facebook’s networking and social communication capabilities can benefit both the instructor and the student by tapping into a greater number of learning styles, providing an alternative to the traditional lecture format, creating an online classroom community and increasing teacher-student and student-student interaction.” Another beneficial effect of Facebook is that it affected students’ enthusiasm optimistically (Coughlan, 2009).

### Online social presence

Social presence can be defined as the extent to which people are being sensed as being real in an online environment (Garrison, Anderson & Archer, 2000; Gunawardena, 1995) or the degree of salience or connection between communicators in computer-mediated communication (Tu & McIsaac, 2002).

So why is social presence important? Social presence is said to have a possible effect on the sense of belonging and acceptance in a group (Rovai, 2002), to motivate and stimulate students to learn (Weaver & Albion, 2005) and also to influence participants’ perceived learning and satisfaction in learning. (Swan, 2003; Ubon & Kimble, 2004). Additionally, literature indicates that research has established a relationship between student learning satisfaction and instructor presence as well as between student satisfaction and peer presence (Richardson & Swan, 2003 and Russo & Benson, 2005 as cited in Lowenthal (2009). In their research exploring social presence in asynchronous text-based online learning communities, Ubon and Kimble (2004) found that participants in different online discussion forums need different duration of time to “click” or to develop a sense of group cohesion. They also found that “online students seemed to make an inquiry quite regularly to seek an clarification, information or advice from other participants in OCLs, while online tutors tended to provide learning support and attempt to elicit active participation from students in this environment” (p.5).

### The context

Open University Malaysia (OUM) initiated its Mobile Learning via SMS project in May 2009 to enhance the blended learning approach of self-managed learning using modules, online learning using its learning management system (LMS) and face-to-face tutorials. The pilot project was for the Learning Skills for Open and Distance Learner, course code OUMH1103. The initiative was well-received by the learners involved and was then continued for the September 2009 semester, again for OUMH1103 and two other courses namely Renal Nursing and Company Law.

For OUMH1103 September 2009 semester, 25 SMSes were sent out to a total of 1173 learners over a duration of 11 weeks. Of the 25 SMSes, nine were on Course management, 12 on Facebook discussions, three on content, one was a tip for learning and another one SMS was a motivation quote. To support SMS tutoring, Facebook was used as a platform for discussions on SMS topics for OUMH1103 instead of the LMS. The moderator for the OUMH1103 Facebook was a full time staff with OUM who also tutored that particular course. Announcements on the mobile learning project and guidelines on how to join Facebook as well as how to become a fan were uploaded to the course learning management system. At the final count, a total of 697 fans joined the OUMH1103 Facebook community. The total number of postings were 3562, of which 1184 (33.2%) were from the moderator and 2378 (66.8%) were from fans.

### Research question

The research question for the study was: To what extent was social presence experienced by learners who participated in the OUMH1103 Facebook?

### Methodology

#### Instrumentation and data analysis

The survey was conducted online using a free online survey service. The online survey was uploaded after the last tutorial for the semester and just before the final examination (a duration of two weeks). Announcement requesting learners to respond to the survey items was made via the Facebook page as well as in the course learning management system.

There were a total of 23 items in the survey; four were on demographic in nature while 12 were on social presence and six were on the learners’ overall perception of their Facebook experience and one was an open-
ended item asking learners to give comments on their Facebook experience. The social presence items were adapted from items in the Social Presence Questionnaire of Online Collaborative Learning developed by Lin (2004) to suit the context in this study. The reliability coefficient (Cronbach’s alpha) that was reported by Lin was .84. Response format for the items in the survey was a 6-point agreement scale where 1 was for ‘Strongly disagree’, 2 for ‘Disagree’, 3 for ‘Somewhat disagree’, 4 for ‘Somewhat agree’, 5 for ‘Agree’ and 6 for ‘Strongly Agree’. Percentage agreement was calculated by adding up percentage obtained for ‘Agree’ and ‘Strongly Agree’.

Sample

Of the 697 fans of OUMH1103 Facebook, only 67 learners responded to the survey. Generally, response rates to online surveys are low and a ten percent response rate in this study is most probably due to the fact that the online survey was posted near examination time where most learners were preparing for their examination and did not log in to check the OUMH1103 Facebook page. If this response rate is taken, it is actually considered below average and presents a major limitation of the study. However, computing response rate using number of respondents divided by the total number of unique page views (the number of individual fans who have visited the site) during the duration the online survey was activated, that is 181, the response rate of 37.0 percent may be considered above average for an online survey.

Findings

Of the 67 respondents, 35 or 52.2 percent were females and 32 or 47.8 percent were males. The respondents’ ages ranged from 21 to 60 years old, with a median of 29. The box and whisker plot in Figure 1 shows that the 50 percent of the respondents appear to be between 24 and 34 years old. This is not surprising as it is a well known fact that the people who take to online social networking are generally those from the younger generation.

![Box and whisker plot of respondents’ age](image)

Figure 1: Box and whisker plot of respondents’ age

47 of the respondents claimed to have previous experience interacting using Facebook while 20 of them had never used Facebook before the OUMH1103 mobile learning project was implemented. When asked to rate their frequency of using Facebook, the majority of the learners (30) claimed that they logged in to the OUMH1103 Facebook everyday while 20 of them said that they logged in two to three times a week, 13 of the respondents viewed it once a week and another four respondents said that they viewed Facebook once a month. From this it may be said that the OUMH1103 Facebook managed to draw most of the respondents to the site rather frequently.
Respondents were asked to give feedback on 12 items regarding their Facebook experience. Based on percentage agreement, the item which garnered the highest percentage agreement was ‘Facebook is an excellent medium for social interaction’ was the highest percentage item at 85 percent (29.8 percent strongly agreed and 55.2 percent agreed). It was followed by the two items with the same percentage of 80.6 percent namely ‘The interactions enabled me to form a sense of online community’ and ‘The moderator facilitated discussions in the course’ (Both with 25.4% strongly agreed, 55.2% agreed). From these findings, it appears that the use of Facebook does allow room for good interaction for an online learning community in open and distance learning.

Meanwhile, 79 percent of the respondents claimed that they enjoyed reading other peoples’ comments or questions in the Facebook (29.8% strongly agreed, 49.2% agreed). This was followed by the item ‘Other learners’ sharing helped me learn better’ (70.2% with 22.4% strongly agreed, 47.8% agreed).

As for the item ‘Overall the moderator for this Facebook met my expectation’, the total percentage agreement obtained was 69.7 percent (18.2% strongly agreed, 51.5% agreed). This indicates that the learners were generally satisfied with the contribution of significant others (peers and moderator) in their learning.

While 68.5 percent of the learners felt comfortable interacting with other fans of Facebook (20.8% strongly agree and 47.7% agree), a lesser percentage (64.2%) felt comfortable sharing opinions related to content through Facebook (22.4 strongly agree and 41.8% agree). Meanwhile, 67.1 percent of them felt that their point of view was acknowledged by other learners in Facebook (16.4% strongly agree, 50.7% agree). As to whether their point of view was acknowledged by the moderator 20.8 percent strongly agreed and 46.3 percent agreed. 64.1 percent of the learners thought that the use of Facebook for OUMH1103 met their learning expectation (10.4% strongly agree, 53.7% agree). The respondents rated the item for ‘My level of learning that took place in this Facebook was of the highest quality’ as the lowest percentage at 58.2 percent (14.9% strongly agree, 43.2% agree). So, it does seem that while students felt that bond with their peers, they were not too sure if the Facebook interactions actually contributed to their learning.

If one were to take into consideration the percentage of respondents who chose ‘Somewhat agree’ into the total percentage agreement, it would then seem that across all items, a great majority of the respondents appeared to
perceive their OUMH1103 Facebook experience positively as the percentages calculated are between 88.1 to 96.9 percent.

Figure 3: Overall perception of Facebook experience as compared to LMS forum

Figure 3 shows findings obtained for overall perception of Facebook experience by learners as compared to their experience using the LMS forum discussions. The respondents were given six items to compare the use of forum discussion in LMS and discussions in Facebook. 82 percent of the respondents in this study agreed that engaging in forum discussion in Facebook was more enjoyable compared to LMS (32.8% strongly agreed, 49.2% agreed). This was the highest percentage agreement obtained. This is could be due to the level of interactions that occurred, as well as the immediate and frequent feedback/response from the moderator.

The respondents rated ‘Facilitate networking among learners’ second highest with a total percentage agreement at 81.8 percent (27.2 strongly agreed, 54.6 agreed). Meanwhile, Next, 80.5 percent of the respondents thought that Facebook’s forum discussion was easier to use (32.8% strongly agree, 47.7% agree) and also that using Facebook was more interesting in comparison with LMS forum (34.3% strongly agreed, 46.2% agreed). 74.5 percent of the respondents agreed that discussions in Facebook enabled them to get to know learners from other learning centres (31.3% strongly agreed, 43.2% agreed) and that it was more beneficial for learning (28.3% strongly agree, 46.2% agree).

Taking into account percentages obtained for ‘Somewhat agree’ as well, it is observed that for overall perception of Facebook as compared to the LMS forum, over 90 percent of the respondents appeared positive about the use of Facebook as an online discussion platform. The apparent advantages Facebook has are:

1. It enables students to connect with a wider community of learners;
2. The interface is more user-friendly; and
3. The interactions were more enjoyable and interesting.

From the comments obtained for the open-ended item, there were several positive viewpoints as well as some reservations. Positive comments given by the respondents were:

- More interesting and enjoyable with sharing graphic, document, video
- Easier to use
- Interaction is good
- Easier to access and gain faster information
- I enjoyed reading the feedback and answers provided by the other learners...a good learning tool
- Can interact with our friends from all states
Meanwhile, reservations raised by respondents include:

- There are so many replies until 100+ response in one topic. So it’s kind of hard to view all replies
- LMS forum discussions is safer compared to Facebook because not everyone can read our sharing and discussions about study except OUM students
- LMS forum is still relevant for OUM students
- As a working person, do not have much time to really read all the comments on Facebook
- Since there are no marks for FB participation there is no compulsion for the learner to actively participate in FB

**Discussion and conclusion**

Discussing in terms of social presence experienced by learners using the OUMH1103 Facebook, one may infer from the findings of this study that the use of Facebook is a good medium for academic interactions and that it could be successfully used to develop a sense of belonging and create relatively well-forged online community. The moderator of the Facebook plays an important role in ‘knitting’ that sense of connection between moderator and learner and learner and learner. Learners appeared at ease reading other learners’ postings and felt comfortable interacting. This is important as it helps motivate and stimulate learning.

Since the learners perceived that their viewpoints were acknowledged by both the moderator and other learners, it could be concluded that the use of Facebook enabled learners to have a sense of acceptance in the online community. This is a crucial factor in encouraging learners to freely ask questions, seek clarifications and information or to give their opinions. It also appears that the Facebook moderator and the OUMH1103 Facebook community have met the expectations of the learners. This indicates that there is much potential in using the social networking site as a tool to support learning, particularly for open and distance education.

In comparing Facebook discussions with LMS discussions, majority of the respondents appeared to find Facebook more enjoyable and interesting. Also, where a certain course is run simultaneously across a wide geographical area, for instance across all states in Malaysia, learners appear to like getting to know, interact and learn together with their peers throughout the nation. The discussions could be possibly richer and more varied since learners from different learning centres actually have different tutors for their face-to-face tutorials and whatever knowledge and experience fans bring along with them into the Facebook community would surely add to the depth and breadth of discussions.

A point to note when using Facebook for academic discussions is that the discussions ought to be better organized so that it facilitates the learners’ reading the numerous responses to any one posting. The discussion tab should be used to post topics of discussion so that it is easier to access and retrieve postings and follow the train of conversation. Security features could also be enhanced particularly since just about anybody can register to be a fan (not just legitimate students of the course). Perhaps for educational institutions that have their own e-mail accounts, one way would be to get the learners to register for Facebook accounts using only their university e-mail accounts so that the space between students’ personal social interactions and their academic interactions for may be separated.

The online social networking era appears here to stay. While many people seem to find benefit and enjoyment logging on for various reasons such as for leisurely pursuits, for business and for political vantage, educationists too ought to be creative and innovative in tapping on to the features and benefits of Facebook to enlarge the learning space of learners and to enhance their learning experience. Further research ought to be conducted on how social networking sites may actual benefit learners with regard to achieving learning outcomes. The actual frequency of individual postings and viewing could also be easily tabulated using the ‘Insights’ available to administrators so as to examine the extent to which the site is efficient in disseminating information and in engaging learners. Additionally, a causal comparative study could be conducted to compare the effectiveness and efficiency of using LSM and Facebook for learning purposes.

**References**


Innovating Teaching and Learning: Student Perceptions of Interactive Multimedia Learning in a Malaysian Classroom

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With the advent of e-learning as an innovative method of teaching educators are provided with more flexibility in creating an exciting learning environment. Furthermore, with the ability to incorporate multimedia elements into the learning environment, the learning modules become more attractive to the student and would gain their attention. However, there is a need to adjust the educator's approach to teaching, preparing content and delivering learning materials in this digital age, and go beyond simply uploading class materials online teaching (Palloff & Pratt, 2000; Alessi & Trollip, 2001). Berge, Collins & Dougherty (2000) suggest that creating a successful Web environment means going beyond creating electronic versions of the course, but be designed specifically with an interactive, electronic medium that accommodates various media types and incorporated in the classroom in many ways, from being just a resource to including course activities that go beyond the classroom settings (Bonk, Cummings, Hara, Fischler & Lee, 2000). This research sought to investigate the use of the multimedia design process incorporated into a multimedia-based module and delivered in a student-centred learning environment. Students’ attitudes and perceptions of such a learning environment were assessed and results showed that students were very positive towards this learning environment, providing strong support for an effective design guideline for educators seeking to create innovative interactive multimedia web-based learning materials.

Keywords: Multimedia design process, interactive multimedia, student attitudes, web-based learning

Introduction

Education is moving away from conventional teaching strategies to more web-based learner-centred teaching and learning methodologies, and technology is being integrated into classrooms of today. With the advent of e-learning as an innovative method of teaching educators are provided with more flexibility in creating an exciting learning environment. Furthermore, with the ability to incorporate multimedia elements into the learning environment, the learning modules become more attractive to the student and would gain their attention. However, there is a need to adjust the educator's approach to teaching, preparing content and delivering learning materials in this digital age, and go beyond simply uploading class materials online teaching (Palloff & Pratt, 2000; Alessi & Trollip, 2001). Acquavita (2004) believed that “learning is not a passive, but an active process. A student should participate in a task rather than merely absorb information.” Oliver, Herrington, Herrington,
& Sparrow (1996), and Guan (2009) found that conventional learning “involves tasks requiring students to process knowledge that is not linked to the situations in which the new knowledge will be applied” and suggests that the ability to experiment and explore with what was learned theoretically to link theory and practice in learning can be achieved using a multimedia environment.

Berge, Collins & Dougherty (2000) suggest that creating a successful Web environment means going beyond creating electronic versions of the course. Rather, it should be designed specifically with an interactive, electronic medium that accommodates various media types and incorporated in the classroom in many ways, from being just a resource to including course activities that go beyond the classroom settings and be designed to be as authentic as possible (Herrington & Herrington, 2006). Many web learning applications are now designed such that information is presented online in the websites and enhanced with multimedia features and interactivity, and follow certain design concepts (Svensson & Ostlund, 2007) and development process which incorporates multimedia into the designing of instructional curricula (Oliver, Herrington, Herrington & Sparrow, 1996).

Today, it’s not hard to find out or identify some general terms, which have some kind of relation to educational technology or association with information revolution, for instance: e-learning, educational technology, information and communication technology, computer aided learning, computer aided assessment and computer mediated communication. As learning objectives become more goal-directed, more research efforts are needed to initiate more educational innovations, which is to introduce and bring computer technology into the learning process and investigate how they can be successfully used as a tool or system to promote effective learning. Today, more people believe the technologies have modernized the nature of learning as this always encourages students to better demonstrate their understanding in the learning activities and help learner organizing their new information and matching with current personal understandings. As a result, this kind of learning processes have been broadened its horizon in knowledge delivery wise than traditional learning processes. In order to create better strategy to motivate learners and engage them in a more meaningful learning environment, the application developers or educators ought to use some suitable and systematic instructional strategies and learning approaches in the development process. As such, this paper sought to further the exploration of the use of multimedia in a web-based learning module embedded within a student-centred learning environment.

The impact of using multimedia in teaching and learning

Previously, in the teaching and learning process, a single media (text) is mainly used as the instructional media and the presentation of the educational content is in a linear fashion. But with multimedia, multiple media elements can be used. The instructional materials can be delivered in a multi-sensory environment using the multimedia elements such as text, graphics, animation, sound and video. This process also cultivates some interaction between the student and the information itself, making the learning process more effective for the student. The educational content is still the information or message to be delivered by the teacher (sender) to the student (receiver), but now, the type of instructional media or educational content that the teacher would be using is the computer-based interactive multimedia.

Tway (1995) posits that “Multimedia offers an excellent alternative to traditional teaching. By allowing the students to explore and learn at different paces, every student has the opportunity to learn at his or her full potential.” The combination of multimedia technology and educational content materials results in an interactive content that can then be delivered to the student in various ways and made available for the different teaching and learning modes such as the teacher-centred, student-centred and mixed modes. By doing so, students can have an interactive experience with the topic whose impact far surpasses that of the textbooks, and consequently, achieve a higher level of comprehension and retention of the topic itself. Studies have shown that interactivity raised the comprehension and retention rates of the audience to about 75 per cent, compared to the 40 per cent rate from what they see and hear, and the 20 per cent rate from what they see only (Lindstrom, 1994). The usage of multiple sensory while reading, looking and doing has been proven to increase retention of knowledge (Guan, 2009; Nicholson & Nicholson, 2010).

With the assistance of many different multimedia development packages such as Adobe Director, Dreamweaver and Flash features such as interactivity and navigational links can be added to the instructional content to enable the learner to interact and move around the content with ease in the way he or she likes best. Thus, the learner can control the pace of learning, suitable to his or her skill level. The presentation can take place in a non-linear manner, which will empower the learner to foster a two-way communications or interactions between the user and the computer. This mode of learning is geared towards student-centred or self-directed learning mode which will cater to individualistic needs in learning, unlike the mass learning as practiced in directed instruction.
method. Thus, the use of the digital multimedia technologies has generated a new paradigm in our educational methodologies and strategies. It has given rise to new modes of learning and enabled new and innovative ways to deliver instructional materials to the learners (Neo, Neo & Yap, 2008).

The landscape in the education field is indeed fast changing into an IT-oriented one. The birth of the Internet, e-mail, chat-rooms and FTP is spearheading the establishments of e-Learning institutions, digital universities and distance learning centres. The arrival of the digital technologies has been a boon to the educational field, and has led, in recent years, to many institutions of higher learning, including those in Malaysia, rapidly embracing digital multimedia technology in their educational curricula (Lee & Tsai, 2005; Neo, Neo & Yap, 2008).

The student-centred learning environment

Student-centred learning derived its meaning from an environment where learning was achieved through student’s active participation in the learning activities. Perceived in a variety of connotations, student-centred learning is also known in other expressions as flexible learning (Taylor, 2000), experiential learning (Morón-Garcia, 2002; Kurhila, Miettinen, Nokelainen, & Tirri 2007) and self-directed learning (Kurhila, Miettinen, Nokelainen, & Tirri 2007). Acquavita (2004) wrote that student-centred learning is an individual matter where mastery of a skill is through the individual activities, effort, understanding, and exercise of the skills. Lee & Tsai (2005) found that hypermedia-based applications are non-linear and allow the learners to explore information in their own ways. Nooriafshar & Todhunter, (2004) characterised student-centred learning as an occurrence when the content is meaningful and useful to the student through a positive, healthy, comfortable, respectful, appreciative and interactive environment.

In a student-centred learning environment, student takes responsibility in their learning process. Neo & Neo (2004) suggested that students learn through a series of discovery, inquiry and can dictate their own learning relevant to their own approaches. In this environment, students assumed a high level of responsibility in their learning process and “can no longer rely on the lecturer to tell them what, how, where and when to think” (Sparrow, Sparrow & Swan, 2000, p.2). Students should be able to actively choose their goals and manage their learning process rather than simply work through a pre-determined course of study (Andrewartha & Wilmot, 2001).

The multimedia design process

In this research project, a student-centred learning environment was developed, which consisted of a multimedia web-based learning module, underpinned by a sound multimedia design process framework outlined by Oliver et al., (1996), and presented to students. This multimedia design process included the following steps:
1. Content development
2. Interface design
3. Digital media capture
4. Prototyping
5. Media integration
6. Testing
7. Evaluation

Figure 1 illustrates the schematic diagram of the multimedia design process.

Figure 1 The multimedia design process
An interactive learning module entitled "The Multimedia Process", authored in Flash and uploaded to the web, is showcased to demonstrate the robustness of Flash to create a media-rich, interactive and multi-sensory learning environment. Figure 2 shows the interface design of the learning module. This learning module was used to deliver the educational content in various teaching and learning methods such as the teacher-centric and student-centric modes.

This web-based module allowed students to access the lecture at their own pace and to reflect on the content in their own time. The lecturer was available to chat and answer questions online. And the lecture was also used in classroom face-to-face teaching, to further supplement the delivery of the content.

Student feedback

In order to gauge students’ attitudes and perceptions towards this learning module, a 5-point Likert scale was given to them upon completion of the module. Students in a computer graphics course (N=53) at the Faculty of Creative Multimedia (FCM), Multimedia University, Malaysia, were asked to view the module and provide feedback towards the learning module. The survey was measured in a 5-point Likert scale (1= Strongly Disagree, 5= Strongly Agree). In particular, students were asked (1) whether they found the lecture module stimulating, (2) how appropriate was the use of media in explaining concepts and ideas, (3) what they thought of the use of technology in teaching and learning, and (4) whether the interface of the module was easy to understand. Results showed that 88.6% of the students were very favourable towards the use of technology in teaching (mean = 4.42), 88.7% found the use of media appropriate in explaining concepts (mean = 4.3), 84.9% found the lecture module very stimulating (mean = 4.11), 88.7% found the information presented clear and concise (mean = 4.19), 90.6% found the module's interface easy to understand (mean = 4.23), and 83.1% were satisfied with the amount of information received in the module (mean = 4.02). Table 2 illustrates these results from the items in the survey.

Table 2 Mean and percentages of survey results (ranked)

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>% Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prefer technology-based teaching</td>
<td>4.42</td>
<td>88.6</td>
</tr>
<tr>
<td>2. Use of media appropriate</td>
<td>4.30</td>
<td>88.7</td>
</tr>
<tr>
<td>3. Found lecture very stimulating</td>
<td>4.11</td>
<td>84.9</td>
</tr>
<tr>
<td>4. Information presented was clear and concise</td>
<td>4.19</td>
<td>88.7</td>
</tr>
<tr>
<td>5. Interface of the module easy to understand</td>
<td>4.23</td>
<td>90.6</td>
</tr>
<tr>
<td>6. Satisfied with the amount of information received</td>
<td>4.02</td>
<td>83.1</td>
</tr>
</tbody>
</table>

Discussion

Three significant factors have emerged with the integration of multimedia into the teaching and learning process:

1. The students were no longer passive learners in this learning environment, i.e., passively absorbing the information from the teachers, but can actively participate in their own learning process. In this
learning mode, students were actively pursuing their learning on their own and explore and interact with the content in the module. And as the results in Items #1 and 3 in the survey showed, they found the interactive module stimulating and engaging.

2. Students also enjoyed having multimedia in the module, as evidenced by Item #2 in the survey. Here, 88.7% of the students (with a mean of 4.3) liked the use of media in explaining concepts. This is in conjunction with Tapscott's (1998) position that the new generation looks to using digital media in their learning process. Thus with multimedia, the teachers now have more options to represent their educational content using a combination of media rather than just text only. That means that their content can now be interactive and media-rich.

3. The teachers can now strengthen their instructional strategies and methods of communicating content to the learners, thus enhancing the teaching and learning environment. As reported in the survey, the learners preferred technology-based teaching (88.6% with a mean of 4.42). This could be due to the innovativeness of the method of teaching coupled with the fact that these students belong to the PC generation and find using computers and technology-based instruction a more effective and innovative way to learn.

In addition, as the survey showed, this interactive web-based multimedia learning module displayed several characteristics that would make it a more effective way to teach and learn, such as the following:

- It successfully incorporated multimedia and interactive features which is a fundamental departure from the traditional presentation of educational content. Being a visually-based module, students were able to see the concepts and information presented in a more graphical and interesting manner.
- The interactive features allowed students to control the flow and path of the navigation and be responsible for the information acquired.
- It supported the idea that students become active learners and in control of their learning process as posited by Neo & Neo (2004). With this learning module, students can access the information asynchronously and decide on the content to learn when and where necessary, improving their productivity in learning as suggested by Sparrow, Sparrow & Swan (2000) and Andrewartha & Wilmot (2001).

Therefore, it can be seen that the creation of an interactive module that is marries multimedia and web technologies with classroom content can not only serve to improve the teacher's instructional delivery strategies but also to provide students with an interactive and media-rich learning environment to pursue their education. This study has successfully shown that students are very positive towards this learning environment which provides strong support for educator who would like to incorporate multimedia and web technologies into their classroom teaching.

Conclusion

In conclusion, we see that learning with multimedia technology has introduced an important paradigm shift in education that will have a very important impact on our educational system and the way teachers teach and students learn. This changing role of teaching and learning is inevitable with the introduction of multimedia technologies in the educational field and the spawning of a technological savvy generation of youths. Information is being exchanged in a digital mode, and the educational curriculum is evolving to incorporate multimedia elements and interactive features that create a better teaching and learning environment for the students as well as the teachers. The future trend in educational methodology and strategy is geared towards integrating multimedia technology into the classroom.

In this context, multimedia has been shown to be effective as a strategic instructional medium for teaching and learning in the Malaysian classroom. By integrating multimedia technologies into education, we will be better able to produce a workforce that can feed the K-economy (knowledge economy) of the Malaysian society. This study has successfully shown that marrying content with technology has had a very positive effect on the student learning process and enabled them to enjoy their technology-backed learning environment.

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Students in De La Salle University-Manila, who are taking up the Bachelor of Science degree in Computer Science with specialization in Instructional Systems Technology, undergo a course in instructional media development. In this course, they learn how to apply instructional design principles and use different multimedia tools in order to develop various forms of instructional materials for a selected topic or subject area. The final requirement from the students in the course is an integrated e-portfolio, which allows the students to exhibit their creative skills in digital art as well as their capabilities in designing effective multimedia materials for instruction. This research paper aims to present a methodology in developing the digital portfolio starting from the planning phase up to the phase of integrating the individual instructional materials into an interactive multimedia application. This paper will also cover the use of a project rubric in evaluating the student outputs.

Keywords: Instructional design, e-portfolio, instructional systems technology, interactive multimedia

Instructional Systems Technology

The Instructional Systems Technology specialization in De La Salle University-Manila aims to train students in using information and communication technologies and applying learning principles and theories to bridge gaps and support emerging trends in education. The program prepares the students by providing courses that will enable the students to develop skills, knowledge, and experiences in building and designing various instructional systems. (Bachelor of Science in computer science with specialization in instructional systems technology, 2009)

Developing Digital Media for Education

One of the courses that are part of the Instructional Systems Technology curriculum is on instructional media development. Through the course, students learn about the basic concepts in digital multimedia elements such as text, visuals, audio, video and animation. In addition, principles in using and designing the appropriate media elements for various instructional strategies are also discussed. Tutorials on the use of different tools and software for creating and manipulating media are also included in the course. At the end of the course, the students are expected to integrate multimedia elements and develop an interactive multimedia application. (Bachelor of Science in computer science with specialization in instructional systems technology, 2009)

E-portfolio Project

The instructional media development course culminates with the design and creation of a digital portfolio or e-portfolio, which incorporates individual media artworks on each of the following instructional strategies:

- Presentation of a Lesson
- Instructional Poster
- Instructional Video Demonstration
- Screencast
- Simulation of a Process Cycle
- Interactive Quiz
- Instructional Game

The project allows the students to apply their knowledge of both instructional and multimedia design principles, given the various materials to be developed. The lesson presentation involves the traditional use of slide shows that serve as visual aids for the delivery of class lectures. The instructional poster provides a printed form of
presenting a fact or a concept, through the use of a combination of static text and images. Next, the instructional video involves recording a physical demonstration of a sequence of steps in a certain procedure, while a screencast involves capturing procedures done in the computer or using computer applications. The simulation, on the other hand, entails the use of animation to show an intangible process cycle or a process that cannot be possibly recorded using a video camera. The interactive quiz is a computerised version of the commonly used forms of assessment such as multiple-choice, true or false, fill in the blanks, and matching type exams. In addition, the interactive quiz provides immediate feedback and results with regards to the learner’s assessment. Lastly, the instructional game provides a more casual and entertaining form of student assessment, which involves different forms of interactivities through the use of animated characters, objects, and other motivational elements.

Paper-based portfolios have been developed by individuals in the past, which were commonly used to showcase one’s outputs and accomplishments in a certain field. However most of the media today are in electronic form, thus requiring electronic storage and features for digital organization (Batson, 2002). Generally, an electronic portfolio or an e-portfolio is defined as a collection or a repository of electronic media and digital artefacts, built and maintained by a certain user or student (Tosh & Werdmuller, 2004). Various platforms of e-portfolios have been used for instruction, including CD-based applications, websites or webfolios, and even integration in weblogs. The digital nature of e-portfolios makes it more portable, thus allowing its users and developers to conveniently bring it outside the classroom.

Regardless of the platform used, the application is often associated with the assessment and evaluation of an individual (Batson, 2002). It can be used to keep track of a student’s achievements in line with a course’s learning outcomes and objectives. Eventually, the digital portfolio, along with other student requirements and outputs, can be further used to evaluate the effectiveness of a certain curriculum. But aside from using the e-portfolio as a basis for instructor feedback and student progress monitoring, the students may use it as a learning tool. Creating an e-portfolio can be considered as a student-centred instructional approach. Most e-portfolios that are developed are highly individualized (Lorenzo & Ittelson, 2005). According to Tosh and Werdmuller (2004), an e-portfolio allows the students to be more participative in the learning process as well as reflect on their own outputs. Additionally, this digital application can be used to demonstrate the skills and competence of the students.

**Evaluation of Instructional Design Methodologies**

The e-portfolio, produced by the students enrolled in the media development course, contains a collection of instructional materials anchored on various instructional strategies and integrated into an interactive multimedia application. The interactions incorporated in the application serves as the unifying element that makes the output a significant source of instruction. Another factor to be considered in the creation of the e-portfolio is the use of appropriate combinations of different media elements in accordance to the formulated instructional design.

A number of factors have to be considered in coming up with an effective instructional material, which makes use of the right media blend, while still considering both learning and learner requirements. This requires the students to go through an organized media design and development process involving the accomplishment of a series of interrelated milestones, which have been based on past instructional development methodologies and techniques.

**ADDIE Model**

![Figure 1: ADDIE Model](image)

Several approaches have been used through time in multimedia development, such as the systems development life cycle (SDLC), prototyping, and even an object-oriented approach (Barry & Lang, 2001). Traditionally, the ADDIE Model has been used in designing instructional materials. It is probably the most popular methodology used by developers and instructional designers in creating educational tools and software applications. The acronym stands for the five phases in the methodology: analysis, design, development, implementation, and
evaluation. This model suggests a linear approach to instructional design, similar to most systems development methodologies.

The analysis phase is considered as the “pre-planning” phase wherein the instructional designers have to think about the course, the learning goals and objectives, the target audience, the learning environment, instructional strategies, and assessment methods. The design phase is where the actual content and instruction for the learning modules are written. The development phase is where the instructional material is built based on outputs from the design phase. It covers the construction and assembly of the content, assessment, and course structure. The implementation phase is where the actual instruction begins or the interaction between the learner and the instructional material. The last phase is the evaluation phase where the course outcomes are appraised against the set learning expectations. The results of the evaluation phase will be the basis for improving or changing the instructional design. (ADDIE model, n.d.)

The instructional media course focuses on the use of the ADDIE Model as a “project management tool” to help the students mainly on the process of interactive multimedia development (ADDIE model, n.d.). The different steps in the design and development phases were used as a basis for the milestones in creating the e-portfolio.

**Instructional Design Process by Rothwell and Kazanas**

![Instructional Design Process](image)

Rothwell and Kazanas (2008) provided a more detailed model of steps in the instructional design process. Figure 2 shows the different tasks involved in the authors’ proposed methodology. The sequence of steps are noticeably patterned after the ADDIE model, however, the author’s methodology enumerates the tasks instead of the phases as part of the instructional design model. The methodology focuses on elaborating on the analysis and design phases of the ADDIE model. Furthermore, a unique characteristic of Rothwell and Kazanas’ methodology is that it requires an identification of a need or performance gap that currently exists among the learners. This need is further analyzed in order to identify its underlying causes and formulate an appropriate instructional solution to bridge the learning gap. Performance objectives and measurements are also established prior to designing the instructional materials to ensure a consistent alignment with the performance gap being addressed. The evaluation of the learner’s performance after providing instruction through the educational tool is done as the last part of the methodology.

**E-Portfolio Development Methodology**

Based on the ADDIE model and the instructional design process by Rothwell and Kazanas, an e-Portfolio development methodology is constructed for the instructional media course. Figure 3 depicts the process of
Creating the digital portfolio from topic selection up to media authoring or integration. The students worked on the e-portfolio in groups of four (4), wherein each group has to sequentially go through all the phases in the methodology. Every phase is marked by a corresponding project deliverable in the form of a document or a media draft, in order to ensure the progress of all student groups.

![Figure 3: e-Portfolio Development Methodology](image)

**Selecting and Analysing the Topic**

The students begin the project by selecting a topic that will be used for all the instructional materials that will be developed. The groups were free to choose any topic, academic or non-academic, as long as there are subtopics that can be supported through the given instructional strategies. This initial step is contrary to most instructional design methodologies, which do not start with a list of instructional strategies to be implemented. However, providing the instructional strategies at the beginning of the project allows the instructional designers to primarily conceptualize, which will help them later on to prepare and select the appropriate topics and media elements. The list of instructional materials also gives the students an idea on how to facilitate learning and focus on information, skills, and attitudes needed to be learned. (Rothwell & Kazanas, 2008)

The students eventually came up with a topic outline, corresponding to the different subject information that will be part of their scope. Once a topic outline has been created, the students then proceed to researching and analyzing the content. The students had to classify their list of topics according to the different content types: fact, concept, process, procedure, and principle. By doing content analysis and classification, the students were easily able to match which topics were appropriate for each instructional strategy.

**Profiling the Learner**

After choosing and analyzing a topic for the project, the students then provide a profile of the target learners who will be the users of the interactive application. The groups were required to come up with a brief description of the target learners, which included the learners’ demographic characteristics such as their grade level or age group, and gender. The groups also provided the pre-requisite knowledge and skills that the target learners are expected to have prior to using the compilation of educational materials. Identifying pre-requisites further allowed the project groups to be more specific on the subtopics to be covered in the instructional strategies.

**Identifying the Instructional Objectives**

The next task in the e-portfolio development methodology is to identify the instructional objectives. The instructional objectives should reflect the desired learning outcomes or general results desired after the instruction was received (Rothwell & Kazanas, 2008). The project groups were required to provide a general objective for the e-portfolio, which will serve as their overall instructional goal in using the interactive application that they will be developing. In relation to the general objective, the students were also tasked to come up with at least three (3) specific objectives, which will serve as their milestones in order to achieve the main learning outcome. Moreover, these instructional goals were later on used as one of the basis in evaluating the final digital portfolio.

The corresponding outputs for the first four phases are submitted as part of the initial plan for the e-portfolio. These plans were evaluated and revised accordingly. Once finalized, these preliminary deliverables served as the basis in developing the succeeding requirements for the digital portfolio.
Creating the Storyboard

After the initial instructional plans have been approved and evaluated, the students then proceeded to creating the e-portfolio storyboard. Similar to a flowchart, it provides a visual representation of the project and guides the designers and developers in determining relationships between the instructional content.

![Sample Storyboard](image)

Figure 4: Sample Storyboard

Figure 4 shows a sample storyboard similar to what the students have constructed. A more detailed storyboard includes the subtopics as part of the framework. It provides the developers with an overview of the complexity of the digital portfolio and shows the number of sublevels in the multimedia application. The storyboard served as the basic structure of the e-portfolio and was also used in creating the drafts and scripts for the required media elements.

Before developing the actual media for the digital portfolio, the students selected which media elements will be used for each instructional strategy. Choosing suitable media elements is critical in the instructional design. According to Rothwell and Kazanas (2008), it is important that the students are able to select appropriate sources of media and information based on learner needs and characteristics. It is important to define and draft the media elements prior to development in order for the students to assess how engaging the content is, as well as the timeframe for creating the individual media (Frick, 2008).

Creating Media Drafts and Scriptwriting

The students created layout drafts for instructional strategies which included static text and images. Some of the instructional strategies, which used videos, animation, and interactivities, required the creation of media scripts. The scripts provided structure and details on the audiovisual elements included in the instructional strategy. The videos and animations were initially divided into different scenes. The students were tasked to provide a sketch of the scene layout and how the necessary elements will appear on screen. The corresponding scripts also required the students to provide the following details for each scene in the instructional media:

- Scene Number
- Scene Name
- Duration
- Text (labels, captions, and content)
- Images (static pictures, graphics, illustrations, icons)
- Voice Over/Dialogue
- Audio Elements (background music/sound effects)
- Video Steps/Animation Sequence
- Interactive Components and Corresponding Feedback (buttons, hyperlinks, hot spots, draggable objects)
- Remarks
Developing the Media

After the media drafts and scripts have been refined and approved, the students then develop the actual media for each instructional strategy. Majority of the computer applications that were learned by the students are from Adobe’s line of digital media development software. Specifically, these software include Adobe Photoshop, Adobe Flash, Adobe Premiere, and Adobe Audition. With regards to the digital portfolio components, the students were mainly required to use Adobe Photoshop in creating the instructional poster and in manipulating images necessary for the other instructional materials such as the interactive games and quizzes. Adobe Flash was used to produce the linear animation for the process simulation and to add the main controls and interactivities in the instructional games and quizzes. To edit video clips in order to produce the instructional video demonstration, the students used Adobe Premiere. A different media development software was used specifically for screencasting. The students learned how to use an application called Jing, which allows its users to record and capture anything that is happening on the computer screen and store it as a video. In addition the software also allows its users to share recorded videos via email, blog, or instant messengers (TechSmith Corporation, 2009).

Presenting the Prototypes

Prototypes of each instructional material were presented and initially evaluated before integrating them into the e-portfolio. The presentation of media prototypes allowed for the verification and evaluation of the students’ instructional design. These prototypes were refined and revised accordingly, until the desired output was produced.

Integrating the Media

Once the individual instructional materials have been completed, the students then proceed to the process of media authoring or integration. In this phase, the students create the e-portfolio, which is a structured navigation system that will contain the links to access the various instructional materials that they have developed. The structure would still be based on the storyboard that the students have constructed. The students were required to use Adobe Flash in order to combine the multimedia outputs into a single interactive application.

E-Portfolio Evaluation

All student groups presented and submitted the final e-portfolio at the end of the trimester. A project rubric was used to grade and evaluate the student outputs according to certain criteria. The students were not evaluated how well they were able to use the different media development software, but rather on how well they were able to design multimedia materials for effective instruction.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>94 - 100</th>
<th>87 - 93</th>
<th>80 - 86</th>
<th>70 - 79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content (20%)</td>
<td>Content is complete and well organized</td>
<td>There are some missing items in the content</td>
<td>The content is inadequately organized</td>
<td>The content is insufficient and completely disorganized</td>
</tr>
<tr>
<td>Media (20%)</td>
<td>Excellent media design and selection for the chosen topic</td>
<td>The media need some minor revisions in terms of design</td>
<td>The media is poorly designed and needs major improvement</td>
<td>The media used is inappropriate for the chosen topic</td>
</tr>
<tr>
<td>Instructional Design (15%)</td>
<td>The topic presentation is perfect for the target audience</td>
<td>The topic presentation still needs some minor improvement</td>
<td>Majority of the topic presentations were designed inaccurately</td>
<td>Total mismatch between topic presentation and target audience</td>
</tr>
<tr>
<td>Interactivity (10%)</td>
<td>The application is highly interactive</td>
<td>There are some parts of the project that lacks interactivity</td>
<td>The interactivities in the project were limited</td>
<td>The application does not have any interactivities</td>
</tr>
</tbody>
</table>
Functionality (10%) | All the e-portfolio functions are complete and working | There are minor e-portfolio functions that are not working | Majority of the e-portfolio functions are not working | The e-portfolio is entirely dysfunctional
---|---|---|---|---
Project Presentation (5%) | Students were well-prepared during the presentation | Students were able to answer most of the questions | Students were not able to address major concerns about their project | Students were not ready to present their work

Table 1: Portfolio Evaluation Rubric

There are six (6) criteria to be considered in the portfolio evaluation: content, media, instructional design, interactivity, functionality, and project presentation. As seen in Table 2, each project criterion has corresponding qualitative descriptions, which will help the evaluator in giving the appropriate grade. The grade for each criterion is then multiplied to their respective weights. The rubric provides a standard and consistent way of measuring the quality and effectiveness of the digital portfolios. It also ensures objectivity in evaluating the student projects.

Other evaluation criteria may also be considered aside from those indicated in the rubric. In accordance to Rothwell and Kazanas (2008), it is equally important to examine the relevance of the content used in the e-portfolio, aside from its organization. Next, the multimedia output should also be aligned to the instructional objectives that were set early in the portfolio design process. The students should be able to achieve the learning goals through the various instructional strategies. Lastly, other factors that either deterred or assisted in the transfer of learning can also be included in the portfolio evaluation.

Conclusion

New approaches to instructional delivery and multimedia application can be discovered during the e-portfolio development. These approaches can bring about changes in the methodologies used in constructing instructional materials. The use of digital media tools and technologies may also vary according to instructional needs. The methodology and evaluation criteria for e-portfolio development should as well be tailored-fit to the expected competencies of the students in a particular course. Hence, it would be beneficial to explore how to integrate e-portfolios in the curricula of other fields of study and how effective these instructional innovations could be.

References

Design, Development and Student Evaluation of Interactive Virtual Field Guides for Teaching Geosciences at Liverpool John Moores University, UK

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The objective of this paper is to outline how we have designed, developed and evaluated with our students Virtual Field Guides (VFGs) for teaching geosciences at Liverpool John Moores University (LJMU). The paper briefly reviews previous use of VFGs to support students’ learning by fieldwork, highlighting some perceived benefits. VFGs are considered to supplement real fieldwork, but not to become a substitute for it. We then outline the design considerations, development and evaluation by LJMU students of two VFGs for: (1) the Ingleton Waterfalls Trail in Yorkshire and (2) a Virtual Alps VFG. The design and development of these two VFGs was undertaken using two different approaches. The Ingleton Waterfalls VFG was developed by a team comprising two academics, one technician and two IT specialists. Based on the experiences of developing the The Ingleton Waterfalls VFG, the Virtual Alps VFG, on the other hand, was developed by two academics, with limited support/input from IT specialists. The final section summarises some staff perspectives and raises some questions and issues concerned with development and accessibility of VFGs in the light of Virtual Learning Environments which are now widely used by students in higher education.

Keywords: Virtual field guide, fieldwork

Introduction

In Universities the benefits of teaching and learning through fieldwork has been brought under closer examination in recent years (e.g. Andrews et al., 2003) and the notion of supporting fieldwork in the Geography, Earth and Environmental Science (GEES) disciplines has been gathering momentum over the past decade as evidenced by a recent conferences on ‘Supporting fieldwork using information technology’ (Maskall et al., 2007) and a Higher Education Academy GEES Virtual Fieldwork Conference at University of Worcester (May 2007). Virtual environments and e-Learning Resources have been shown to help students become active rather than passive learners by appealing to their multi-sensory learning ability with interactive media (Fletcher et al., 2002; 2007).

While the value of fieldwork in the curriculum remains high, the virtual environment allows students to gain prior and subsequent examination of the field site (Spicer and Stratford, 2001). Planning and practicing field skills by using the virtual resource before a visit mitigates against the effects of anxiety and improves students' confidence (Rozell & Garner, 2000). A student commented that ‘I liked the fact that I was able to familiarise myself with the field trip more fully prior to the day’. This would indicate that students appreciate the demands of working in the field environment with its time limitations and the necessity of getting it ‘right first time’. They welcome opportunities to familiarise themselves with the environment and the assessment in advance of the actual field visit. The virtual environment also encourages student reflection, allowing them to review and evaluate their experience away from the site, to process information and even link field sites or features which they have in common (Dykes, 2000).
One advantage of VFGs was first appreciated at LJMU during the foot and mouth crisis in 2001 when some field sites were off limits. VFGs provided an alternative means of accessing relevant curriculum material. VFGs can also provide some compensation when adverse weather prevents some aspects of the intended fieldwork being completed or even seen. Whilst widening access for those with learner support needs they can ensure that absent students (for example those who are ill) do not suffer academically as a result of missing key components of a course or degree which is usually taught in the field. VFGs allow the integration of images and data from laboratory analyses to help explain features and processes observed in the field (e.g. rocks in thin section, SEM images, absolute dating, etc.). VFGs can allow school students of Earth Sciences/Geology/Physical Geography, or those contemplating a geological degree to experience the concept of fieldwork and its requirements prior to their university careers.

At LJMU the Faculty of Science and Faculty of Education, Community and Leisure both have proven experience in developing virtual field environments and e-Learning Resources respectively, to reinforce important aspects of curriculum content. Building on the success of this work, and at the request of students for virtual field sites to be associated with more modules, we have developed two VFGs incorporating 360° digital panoramas, video clips and colour images for (1) a cross-faculty field trip to the Ingleton Waterfalls Trail associated with a foundation level module BIESES0001: Introduction to Geoscience and a Level 2 module ECLOE2201: Caving and Karst Landscapes, and (2) a Virtual Alps VFG based on our research field sites. Our previous experiences had taught us that designing VFGs was a time consuming business, so by collaborating between two LJMU Faculties and focusing on (1) a field site already used by staff and students from both Faculties, and (2) collaborative research sites, we hoped that our efforts would benefit a greater number of students from both faculties. These web based learning resources have been trialled and evaluated by students on the Foundation Natural Sciences (Level 0); the BSc (Hons) Physical Geography (Level 2) and the BSc (Hons) Outdoor and Environmental Education (Levels 2 and 3).

The Ingleton Waterfalls Trail VFG

The Ingleton Waterfalls Trail VFG was developed over a two year period by a team which included two teaching staff, a technician plus two IT specialists who took over the actual production: making the panorama movies, compressing the photos and video clips, making overlay map drapes, hotspots, drawing diagrams and preparing a photographic glossary.

The VFG has recently been moved from a password protected area of the University’s campus wide information system (CWIS) to an open access server (Fig. 1).

The Ingleton VFG was evaluated by LJMU students on two programmes; students studying the BSc (Hons) Outdoor & Environmental Education (n=12) and students studying the Foundation degree in Science (n = 6).
Students on the BSc (Hons) Outdoor & Environmental Education undertook a field trip (5-hours) on The Ingleton Waterfalls Walk led by 2 experienced academic staff. They were set a follow-up assignment on landscape interpretation & evolution of the area (1000 words, 33% of 12 credit module). At the end of the field visit when students had returned to the residential accommodation, 12 students volunteered to evaluate the VFG on laptops at the field centre. This evaluation took around 1 hr 30 minutes when students worked in pairs at a laptop and were given 24 questions designed to guide them through the relevant parts of the virtual tour. Once students had worked through and answered the questions we could be sure that they had a reasonable appreciation of the VFG and had visited all the sites in the VFG which they had visited earlier in the day during the field visit. Students were then asked to complete a questionnaire individually. The first part asked them to respond to a simple Likert Scale Evaluation (questions and results in Table 1). It should be noted that the same questions are sometimes repeated using different language. This was a deliberate design feature used to double check students’ opinions. The second part of the questionnaire contained some open ended questions (results in Table 2) to which students were also asked to respond. Table 1 summarises the responses to the Likert Scale questions in part 1 of the questionnaire.

Table 1: Frequency distributions for responses to the Likert Scale questions in part 1 of the questionnaire.

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I felt the virtual field trip helped my understanding of how this landscape formed</td>
<td>7</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I felt the virtual fieldtrip helped me interpret the landscape better than the walk itself</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3. I felt the walk helped me interpret the landscape better than the virtual tour afterwards</td>
<td>9</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I didn't learn anything from the virtual tour which I hadn't already learned during the field trip</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I think the virtual tour was largely a waste of time</td>
<td>5</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I think the virtual tour is a better way of learning about how this landscape evolved than wasting a lot of the day in the field</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I think the virtual tour is a more efficient way of understanding the key points about landscape evolution than spending 4-5 hours in the field getting tired and wet</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>8. I think that the combination of fieldwork AND virtual tour is the best way of understanding how this landscape has evolved</td>
<td>10</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I think the fieldtrip is the best way of learning about how the landscape evolved</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I would like to have virtual field tours available in more of my modules</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In summary, while the virtual field guide definitely seemed to help students’ understanding, there was strong agreement that it was not better than the actual field trip. Students learned extra information from the virtual tour which they had not picked up during the field trip and there was overwhelming agreement that the combination of the field trip PLUS the virtual field tour was the best way of learning about how this landscape evolved. The responses to the open questions in part 2 of the evaluation questionnaire are presented in Table 2.

Table 2: Summary of students’ responses to open ended questions in part 2 of questionnaire.

<table>
<thead>
<tr>
<th>THREE of the MOST useful parts of the field trip</th>
<th>THREE of the LEAST useful parts of the field trip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close ups and hands-on look at the bedding planes</td>
<td>Getting wet</td>
</tr>
<tr>
<td>Seeing in the field how the water erodes</td>
<td>The rain</td>
</tr>
<tr>
<td>Impressive unconformity more interesting at a close up</td>
<td>The coldness</td>
</tr>
<tr>
<td>Lecturer input</td>
<td>Very hard to make notes</td>
</tr>
<tr>
<td>First-hand visualisation of the landscape</td>
<td>Fitting all tasks into allocated time</td>
</tr>
</tbody>
</table>
• Identify features personally but have information readily available from staff to explain features
• Can see locations in their environment
• Can get a physical feel for the geography
• More likely to be remembered
• Help to understand the development of current landscapes
• To be able to see evidence of geological evolution
• The ability to openly discuss with lecturers

• Harder to engage with the material being cold in the rain
• Information can be missed due to noise or distraction
• Sketching Thornton Falls difficult

<table>
<thead>
<tr>
<th>THREE of the MOST useful parts of the virtual field tour</th>
<th>THREE of the LEAST useful parts of the virtual field trip</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Interesting facts that we weren’t told about on the field trip.</td>
<td>• Pictures with no descriptions</td>
</tr>
<tr>
<td>• Panoramic photo links</td>
<td>• Can’t ask questions</td>
</tr>
<tr>
<td>• Glossary of terms</td>
<td>• Can’t see detail and get up close to rocks</td>
</tr>
<tr>
<td>• access to field information at users discretion availability of information on demand</td>
<td>• Asking questions that we had no idea how to answer before going on the trip</td>
</tr>
<tr>
<td>• Re-cap of day</td>
<td>• Can’t physically touch the rock</td>
</tr>
<tr>
<td>• Field notes available</td>
<td>• You don’t get a feel for the location and conditions</td>
</tr>
<tr>
<td>• Pictures</td>
<td>• Don’t get to witness changes such as river rise</td>
</tr>
<tr>
<td>• Hotspot links</td>
<td>• Pictures with no descriptions</td>
</tr>
<tr>
<td>• Diagrams to explain principles in more depths</td>
<td>• Can’t ask questions</td>
</tr>
<tr>
<td>• Explanations</td>
<td>• Can’t see detail and get up close to rocks</td>
</tr>
<tr>
<td>• Can go at own pace</td>
<td>• Asking questions that we had no idea how to answer before going on the trip</td>
</tr>
<tr>
<td>• Can make notes easier</td>
<td>• Can’t physically touch the rock</td>
</tr>
<tr>
<td>• More easily revisited</td>
<td>• You don’t get a feel for the location and conditions</td>
</tr>
<tr>
<td>• Able to study at leisure (out of bad weather)</td>
<td>• Don’t get to witness changes such as river rise</td>
</tr>
<tr>
<td>• Easy to navigate for technophobes</td>
<td>• Pictures with no descriptions</td>
</tr>
<tr>
<td>• Diagrams, especially time scale</td>
<td>• Can’t ask questions</td>
</tr>
<tr>
<td>• Descriptions - good clarity of information, easy user format, interesting, attention grabbing, and dynamic.</td>
<td>• Can’t see detail and get up close to rocks</td>
</tr>
</tbody>
</table>

Students on the Foundation degree were sent an email after using the VFG and here are some of the replies:

“Was very impressed with the quality of the website. As I was unable to go on the fieldtrip I was still able to do my field report and get a satisfactory mark”.

“I found the software easy to use and understand. It was fantastic to be able to zoom in the photos and go into detail on certain sections within the photo. The software meant I could clarify what I already thought and go over sections I was not completely clear on. The diagrams made the explanations clearer and meant I could go over the material at my own speed without continually bothering the teaching staff! Above all, I found the software a great aid which clarified the subject matter”.

A more detailed evaluation and discussion of the Ingleton Waterfalls Trail VFG is given in Stott et al. (2009a).

**Virtual Alps VFG**

Research on glacial and fluvial processes has been conducted by Liverpool John Moores University (LJMU) staff, sometimes in collaboration with other Universities, at three field sites over the past seven years (e.g. Stott & Mount, 2007; Mount & Stott, 2008; Stott et al., 2008). The field sites have included: (1) the glaciers Noir and Blanc in the Ecrins National Park, SE France (2003, 2004, 2005); (2) the Morteratsch glacier, Bernina Alps, SE Switzerland (2007), and (3) Castle Creek Glacier, Cariboo Mountains, British Columbia (2008). On each of the field visits a small number of self-selected students have accompanied staff. The number of students represented between 4-18% of the cohorts of students who study related modules at LJMU.

Based on the experience gained from developing the earlier VFGs using a specialist IT technician (who subsequently left the University) we felt a certain ‘lack of control’ over the upkeep and maintenance of the VFGs. Any later changes we required had to join a queue and wait for the technician’s time to become available again. We therefore decided: (i) to purchase our own domain name www.virtualalps.co.uk (for which we pay an
annual subscription of around £12.50); (ii) to write the VFG using Macromedia Dreamweaver MX 2004; (iii) to learn to use Macromedia Dreamweaver so that we could develop and update the VFG ourselves and thereby maintain control over the guide and be able to respond quickly to students’ comments and evaluations.

Features of the VirtualAlps VFG

In the early stages of the design planning we agreed that a simple design was necessary so that our basic web authoring skills would not be too overwhelmed. Fig. 2 shows the home page http://www.virtualalps.co.uk. Fig. 3 shows the basic template upon which each of the field sites is based. The Sites Link on the left menu opens to reveal the three sites in the VFG. Each site then has seven content areas as seen in Fig. 3: Site description; Location maps; Photographs; Panorama movies, video clips (and Google Earth Tour); Exercises (plotting data & interpretation); Further Reading; Revision Quiz (developed using Hot Potatoes v.6 software available free from http://hotpot.uvic.ca/)

Once the design template for each site had been developed, it was a relatively easy job to copy the file into a new folder on the Dreamweaver FTP panel, rename it and replace the photo and hyperlinks with those required for the new site. Thus, in summary, the only computer skills we, as academics, had to learn were:

1. How to resize photos/images/maps to make them neat and uniform in size. This was done using Microsoft Picture Manager (an accessory which is part of MS Office 2007),
2. Creating tables, inserting images, video clips/panorama movies, typing text and creating hyperlinks in Dreamweaver.
3. Uploading files to the server via FTP.

All photos were saved in two sizes: a thumbnail 314 x 235 pixels, and a large version of 1024 x 768 pixels. We found that in most cases the thumbnails at 314 x 235 pixels were large enough to see the image with reasonable clarity, but that the option to click to enlarge to the 1024 x 768 full-screen size was worthwhile, especially for maps.

Student Preliminary Evaluation of Virtual Alps VFG

On completion the Alps VFG was evaluated with two groups of students: Level 2 BSc Physical Geography/Geology students studying BIEES2026: Glacial and Fluvial Processes in the Faculty of Science (n =
20) on 26 February 2009, and following minor modifications (repairs to one or two broken links), with the Level 3 BSc Outdoor & Environmental Education students studying ECLOE3205: Glacial and Fluvial Processes in the Faculty of Education, Community & Leisure (n = 12) on 10 March 2009.

Students participated voluntarily in the evaluation which consisted of a questionnaire that guided them through the VFG, then at the end of each of five sections, asked for their responses both to a Likert scale (respond to statements by placing ticks next to: SA = Strongly agree, A = Agree, N = Not sure, D = Disagree, SD = Strongly Disagree) and to write comments as free text on each of the three sites, the glossary and then an overall response. Students were allowed 15 minutes per site and a further 15 minutes for the glossary and overall evaluation (1 hour total).

The overall summary evaluation (Fig. 4) showed that students like the idea of virtual field guides (all but one agreed or strongly agreed). However, when asked whether they ‘prefer virtual tours which have been developed by professional designers as opposed to my lecturers’, their opinions were more split. Most students (n = 14) were neutral on this, with slightly more (n = 7) disagreeing than agreeing (n = 5). This may well have been because our students were too polite to say that they would have preferred a professionally designed site! Of course, these days students are such experienced web surfers that they are totally used to special effects, flash player with moving images everywhere etc - all the bells and whistles available from today’s websites and features that this VFG does not offer, although there are video clips, panorama movies, a Google Earth tour and useful links. Balanced against this ‘amateur’ level of web authoring skills is the knowledge that the lecturer has designed the VFG, and visited and worked in the field sites and is familiar with and knowledgeable about them. Almost all of the students agreed or strongly agreed that they would like more virtual fieldwork sites to back up their modules and the vast majority disagreed or strongly disagreed that virtual field guides are very restrictive and they would not generally prefer to find things out themselves (although one student wrote that there was nothing to stop him finding things out himself anyway, which is of course true!).

A more detailed evaluation and discussion if the Virtual Alps VFG is given in Stott et al. (2009b).

**Future Work**

We are currently working with a team which has been developing a ‘semantic web’ at LJMU (Carmichael, 2007; 2008) and hope to be able to integrate these VFGs into a new web 3.0 format in the not too distant future.
Conclusion

Following our two approaches to developing VFGs at LJMU we are left with mixed feelings about the best approach. Table 3 summarises what we consider to be the positive (+) and negative (-) aspects of the two approaches we have taken to VFG design:

<table>
<thead>
<tr>
<th>IT technician develops the VFG entirely, with guidance/direction from academic staff</th>
<th>Academic staff train-up and develop the VFG entirely with guidance/support from IT technician</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Technician has web skills to give the VFG a ‘functional and accessible’ look and feel.</td>
<td>- academic staff usually don’t have the web skills, or the time to learn more than the basics so the VFG has an ‘amateurish’ feel - big time gaps between training and implementation of Dreamweaver skills meant that time was spent re-learning the basics and making errors</td>
</tr>
<tr>
<td>+ Technician’s time is bought or booked and once you come to the ‘front of the queue’ the job gets done quickly and efficiently.</td>
<td>- academics carry out administration, teaching, fieldwork and research and find it very difficult to prioritise the time to spend learning the skills and developing the VFG</td>
</tr>
<tr>
<td>- the technician retains control and academics can be frustrated because they are not able to make simple changes or updates to the VFG in years subsequent to its development.</td>
<td>+ academics retain control so has the ability to update, fix problems or add to the VFG in future after new sites are visited</td>
</tr>
<tr>
<td>- technician may not have visited the field sites so may not have the same familiarity as the academic</td>
<td>+ academics have spent lots of time at the field sites (sometimes several visits or seasons) so has an appreciation of the processes, changes over time etc.</td>
</tr>
<tr>
<td>- technician leaves for a new job so it can be difficult to access/update the VFG –</td>
<td>- academics less likely to leave for a new job – or even if new institution, likely to stay teaching the same subject matter so likely to retain an interest in the VFG and develop it further ??</td>
</tr>
</tbody>
</table>

We believe that there may be potential for transferring these benefits within the University and with our partner colleges to other disciplines which utilise field visits, work based learning or indeed any other form of experiential learning outside the classroom.

References


Technology, Feedback, Action!: The Impact of E-Learning Technologies Upon Students' Engagement with Their Feedback

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This working paper presents the methodology and outcomes from an externally-funded research project at Sheffield Hallam University to explore the potential of e-learning technologies to enhance assessment feedback practices. Technology, Feedback, Action! provides a deeper understanding of how the appropriate use of e-learning technologies can support efficient and effective feedback strategies including encouraging students to engage with their feedback and formulate actions to improve future learning. Through a series of semi-structured interviews, 23 undergraduate students articulated their experiences of receiving feedback with varying degrees of technical intervention. The paper will outline the technical interventions explored in the study, including the online publication of grades and feedback through the Blackboard Grade Centre, the adaptive release of grades using a bespoke Assignment Handler and linking feedback to assessment criteria via an in-house developed electronic Feedback Wizard. The paper will present the main themes from the literature review focusing on the application of e-learning technologies to deliver actionable feedback, and the findings from the student interviews analysed using a thematic approach will be discussed. In the context of these findings the benefits of each technical intervention will be highlighted, along with practical strategies for implementation.

Keywords: Assessment feedback, E-learning, Reflection, Student engagement

Introduction

This working paper is based on a research project funded by the Higher Education Academy and undertaken at Sheffield Hallam University in the United Kingdom during 2008/09.

Sheffield Hallam University has a strong track record in researching the impact of e-learning technologies on the student experience and placing the student voice at the heart of future developments. Technology, Feedback, Action! builds upon the University's work to develop a deeper understanding of the appropriate use of e-learning technologies to support effective assessment feedback strategies, and in promoting the role of technology not just in improving the efficiency of assessment practice, but also in encouraging student engagement with feedback on assessments.

Technology, Feedback, Action! Evaluated how a range of e-learning technologies might encourage students to engage with their feedback and formulate actions to improve future learning. The e-learning technologies and interventions explored in this study included:

- the online publication of grades and feedback through the Blackboard Grade Centre
- the adaptive release of grades through a bespoke Assignment Handler within the Blackboard virtual learning environment
- linking feedback to assessment criteria via an in-house developed electronic Feedback Wizard
The project began with a detailed desk-based review of current literature on good feedback practice, specifically focussing on the application of e-learning technologies to support the delivery and use of feedback. The study worked in partnership with 23 undergraduate students to explore their experiences of receiving different forms of feedback with varying degrees of technical intervention. Through a series of unstructured interviews the participants were encouraged to articulate their experiences of feedback, identifying how feedback was provided, how useful they found the feedback, and what they had done or intended to do with their feedback.

The study identified recommendations around the use of e-learning technologies to enhance student engagement with feedback, published as a series of best practice guides aimed at students, academic staff and senior managers.

Aims

The aim of this research project is to evaluate how a range of e-learning technologies might encourage students to engage with assessment feedback and formulate actions to improve future learning. The e-learning technologies and interventions explored in this study include:

- **the online publication of feedback and grades**
  Sheffield Hallam University is promoting the widespread and consistent adoption of the Blackboard Grade Centre as the primary tool for the publication of feedback and grades in order to enable students to easily track progress and see how their performance on different assessment tasks builds to an overall profile for the module, and to present student feedback alongside, and in the context of, the rest of their learning.

- **adaptive release of grades**
  A customised Assignment Handler extension to the Blackboard virtual learning environment has been developed to support effective feedback online by encouraging students to engage with written feedback and identify key learning points in order to automatically activate the release of their grade without tutor involvement.

- **linking feedback to assessment criteria**
  Sheffield Hallam University is exploring the use of an electronic Feedback Wizard generating feedback aligned with assessment criteria, allowing tutors to generate individual feedback documents for an entire student cohort that uses an assessment-specific template containing a matrix of assessment criteria and generic and personalised feedback comments offering detailed feedback to students in a consistent and equitable way.

The project aims to explore which elements of the particular interventions add most value.

Method

The project began with a detailed desk-based review of current literature on good feedback practice, specifically focussing on the application of e-learning technologies to support the delivery and use of feedback.

The main study used qualitative methods and worked with 23 level 5 (2nd year) undergraduate students from Sheffield Hallam University, 14 females and 9 males aged between 18 and 42 years, to explore their experiences of receiving different forms of feedback with varying degrees of technical intervention, including online grade and feedback publication, electronic feedback with marks withheld and criteria-based feedback. Through a series of semi-structured interviews participants were encouraged to articulate their experiences of receiving feedback, taking an inductive approach to evaluation and enabling the research team to work closely with students to unpack their understanding of their own experiences to analyse the complex and diverse elements of feedback published using e-learning technologies. Students were encouraged to identify how their feedback was provided, how useful they found the feedback, and what they had done or intended to do with their feedback. This approach provided an insight into the effectiveness of feedback and how students engage with it. One section of the interview followed an 'interview plus' approach (Creanor et al., 2006) in which examples of feedback grids produced by the Feedback Wizard were used to encourage students to think about the benefits and drawbacks of this approach to feedback.
Literature review

The focus of this literature review is current publications and research regarding the importance of feedback and good feedback practice, with a specific regard to the application of e-learning technologies to support both the delivery and use of feedback. Presented below are a summary of the main themes. The full literature review has been published via a wiki and is available for comments and contributions at http://tinyurl.com/tfalitreview.

Feedback is an integral feature of effective teaching and learning, and can be one of the most powerful ways to enhance and strengthen student learning (Black & Wiliam, 1998; Gibbs & Simpson, 2004).

Traditional practices of providing feedback are no longer effective (Bloxham & Boyd, 2007; Hounsell, 2008; Race, no date; Rowe & Wood, 2007; Rust et al., 2005). The bunching of assessment tasks at the end of units or modules of study, along with the writing of feedback under tight time constraints, limit feed-forward opportunities (DfES, 2003; Higgins et al., 2002; Price & O'Donovan, 2008; Race, no date; Yorke, 2001). This has resulted in student dissatisfaction with the timeliness and usefulness of feedback (HEFCE, 2007). Further there are claims that students fail to act on feedback (Mutch, 2003), are only concerned with the grade (Wojtas, 1998), or see feedback as a means to justify the grade (Boud & Falchikov, 2006).

There are strong beliefs that disengaging the grade from feedback encourages students to engage with their feedback (Butler, 1988; Black & Wiliam, 1998; Boud & Falchikov, 2006; Carless, 2006; Nichol, 2007; Potts, 1992; Race, no date; Winter & Dye, 2004). Using reflective activities that link feedback evidence into personal development planning can promote future learning (Bloxham & Boyd, 2007; Higgins et al., 2002; Mutch, 2003; Race, no date; Rust et al., 2005), as well as providing students with the means to monitor their own performance on different assignments (Carless, 2006; Maclellan, 2001).

The use of e-learning technologies can enhance student engagement with feedback. For example, returning feedback via the internet enables students to receive feedback in an efficient and legible format (Bridge & Appleyard, 2005; Denton et al., 2008), and engage with it in privacy (Bloxham & Boyd, 2007; Denton, 2001a, 2001b, 2003; Denton et al., 2008; Gipps, 2005; Price & O'Donovan, 2008; Price & Petre, 1997; Race, no date). Additionally, electronic templates aligned with assessment criteria and comment banks enable feedback to be generated in a consistent and equitable way (Denton, 2001a, 2001b, 2003; Denton et al., 2008; Hepplestone & Mather, 2007; Joy & Luck, 1998; Price & Petre, 1997).

Findings

Online publication of grades and feedback

Sheffield Hallam University promotes the use of the Blackboard Grade Centre as the primary tool for the publication of grades and feedback to students in each of their modules. The project looked at what students' value most about having their grades and feedback published online and the extent to which this approach encourages them to engage with and use their feedback.

Online publication of grades and feedback through the Blackboard Grade Centre enabled students to access their grades and feedback at a time and place of their choosing. In common with the use of technology to support learning more generally, the students appreciated the flexibility and convenience that this offers. Online publication of grades and feedback can offer students the flexibility to receive, read and consider their feedback in private surroundings, support the work of Price and O'Donovan (2008) who found that receiving feedback in privacy enables students to engage with and respond to their feedback when they are emotionally ready.

Students perceived that the ability to publish grades and feedback online enabled staff to return their feedback more quickly, thus keeping the feedback and grades in close proximity to the assessment activity. The importance of the timeliness of feedback is often mentioned in the literature, but this tends to be anecdotal. Clearly if students do not receive feedback in time for it to be meaningful, either in relation to the task assessed (a delay reduces the currency and relevance of the feedback) or to facilitate additional learning that can be taken into future assessments i.e. feed forward, then they are less likely to engage with their feedback.

Whilst students responded positively to the quick turnaround possible in receiving grades and feedback online, this did not follow when grades were made available online prior to feedback being made available elsewhere for collection, and in some cases after some considerable time had passed. In these circumstances students were
less likely to engage with, or even collect, feedback. When grades are given before feedback, i.e. adaptive release in reverse (see next section), it was found to be counterproductive; that is to say that when grades are given before feedback, the feedback is seen as less valuable than when feedback is given first.

Students valued the ability to monitor their own progression and to see how they are achieving on each assessment task during, rather than following, the module. The Blackboard Grade Centre collates grades enabling students to easily track progress and see how their performance on different assessment tasks builds to an overall profile for the module. This has been promoted internally as a key benefit of using the Blackboard Grade Centre to publish grades online and the students involved in the study reinforced the value of this approach. However, some students demonstrated a strategic approach to future assessments by focussing on the number of grades required and using this to determine the degree of effort.

There was a strong preference for feedback to be published through the Blackboard Grade Centre. Students placed a value on feedback placed in context of, and directly connected with, their learning within the Blackboard virtual learning environment. Students also valued the perceived permanence of access to their online feedback. The study revealed that they frequently refer back to feedback to support future learning and assessments. This was different from the way in which students engaged with feedback when it was delivered hard copy. Students did value hardcopy feedback, many stating that they would never throw it away, but few had a logical storage system for such feedback and the majority rarely referred back to it after an initial read through and so its value was transitory.

Conflicting views regarding handwritten and typed feedback became apparent during the study, highlighting issues of personalisation, thoughtfulness and legibility. A small number of students perceived handwritten feedback to be more personal with an assumption that the tutor had taken time to write comments specifically for them. Although this perception suggested that typed feedback was impersonal, this depended upon the way in which comments were presented. Typed feedback comments can easily be made more personal through the use of the student's name and making reference to their previous assessments for example, and in some cases the use of typed feedback was perceived to be more thoughtful than handwritten feedback. Students recognised that tutors could more easily edit and revise their feedback as they read through the students' work thus presenting a more cohesive and considered response. A large number of students claimed that they were more likely to engage with feedback when returned in a typed, and therefore legible, format. Despite the differing opinions, there was a strong preference for typed feedback overall.

Adaptive release of grades

The adaptive release of grades is facilitated at Sheffield Hallam University through the use of Assignment Handler. This enabled the project to explore students' perceptions of how adaptive release encourages them to engage with their feedback. Adaptive release through Assignment Handler allows tutors to release feedback via the Blackboard virtual learning environment to their students, but withholds the grade until the student has produced a reflective account on their feedback. Once this reflective account has been submitted, the grade is automatically released without further intervention from the tutor.

Students understand the educational value of separating the grade from feedback as a means of encouraging them to read and reflect on their feedback, and recognise importance of reflection and action planning to improve future learning. However, the benefits of the adaptive release mechanism were only acknowledged by students when they fully understood the process, and the purpose of reflection and action planning needs to be made explicit in order to prevent students from taking an instrumentalist approach. Evidence from the research supports Nichols' (2007) recommendation of putting 'feedback before marks to encourage students to concentrate on the feedback first'.

Although the students involved in the study articulated the benefits of this process and the way in which it facilitates reflection on the grade achieved and feedback received, a strong theme emerged in that students felt that by submitting their assignment they had fulfilled the assessment task. Writing a reflection was seen as an additional requirement and in some cases this need to engage with their feedback was negatively perceived as 'enforced' reflection. It emerged that adaptive release changes the boundaries of the assessment process and in order for students to fully engage with this approach, the importance of reflecting on their feedback must be identified as a key step in the process from the start.

While the findings support the notion that disengaging the mark from the feedback enhances student engagement with their feedback the process can cause frustrations and anxieties when not fully explained.
Students were more likely to engage with the process of reflection when they had been told explicitly a) that they would be required to reflect on their feedback before receiving their grade and b) why this would be of value to them. As a relatively new intervention, many students have never encountered the process before and this contributed to the importance of explaining it adequately.

The study also highlighted uncertainty around the practice of reflection. Where students were required to reflect on their feedback with little guidance around to write, who they were writing for and what would happen to their reflections, the intervention was much less effective in terms of encouraging reflection than for those who fully understood the process. Some students believed the purpose of reflection was to offer a response to the tutor regarding the quality of their feedback. This had the effect of inhibiting their engagement with the process. Others in the study correctly believed that the reflection was for their own benefit, and should be used for action planning.

**Linking feedback to assessment criteria**

One approach to presenting feedback to students is to provide feedback comments that are aligned directly with assessment criteria. There are a range of tools that can be used to facilitate this linking electronically and Sheffield Hallam University has been exploring the use of an internally-developed electronic Feedback Wizard which allows tutors to generate individual feedback documents for an entire student cohort at scale. Each document includes an assignment-specific feedback template containing a matrix of assessment criteria and feedback statements, and other comments individually written for that student. This method is designed to offer detailed feedback to students in a consistent and equitable way.

At the time of this study Feedback Wizard was in limited use across the University and therefore few students involved in the study had experience of receiving feedback generated by this tool, although many had received feedback, electronically or hardcopy, where comments were aligned with the assessment criteria. Participants were shown examples of documents generated by Feedback Wizard and, coupled with their experience of receiving other forms of feedback grids, they were able to articulate the potential benefits of this approach.

Students suggested that they could understand feedback better when aligned to the original assessment criteria. The provision of this level in an accessible format with explicit links to the assessment criteria was identified as a valuable approach to providing feedback. Students could easily identify their strengths and weaknesses against specific areas in a structured way. This can help students to reflect as they can make connections between what they were hoping to attain and what they actually attained, and use the assessment criteria to identify future learning targets, leading to the development of action plans. Given some concerns previously by students that typed feedback was impersonal, none of the participants perceived the output generated by Feedback Wizard to be so. This is even after the students were informed that Feedback Wizard automatically populates the template from a bank of pre-populated comments.

When using Feedback Wizard staff have the option of displaying an indicative weighted grade against each assessment criterion. Participants in the study perceived this approach in providing transparency in how tutors calculate the final grade for their assignment.

Interesting points were raised about how feedback should be presented. Despite students acknowledging that aligning feedback to assessment criteria and presenting this in a grid-form summarised the comments clearly and cohesively, there was a competing preference for feedback to be positioned next to the specific point in their original work, thus easily identifying the context of the comment. This suggests a mixed model would provide the most comprehensive feedback.

**Conclusion**

The study has explored the use of technology to support students' engagement with their feedback. Whilst the study looked at the use of three specific tools, the findings are transferable to the interventions regardless of the tool used to achieve it.

Students expressed a strong preference for grades and feedback online. The use of e-learning technologies pushes feedback to students removing the burden to seek out feedback from tutors and makes it easier for students to engage with their feedback as they have ultimate control over how, where and when they receive their feedback.
The availability of feedback stored online for future reference with the opportunity for, and expectation of, further dialogues provides the greatest benefit to future learning. The flexibility afforded by publishing feedback online enables students to read and respond to feedback when they are emotionally ready, and in relative privacy. It also enables them to store their feedback alongside the rest of their online learning materials and activities, and unlike hardcopy feedback they are more likely to go back to this in future.

Under normal circumstances students do read their feedback and attempt to retain the information for future assignments, although not formally. The process of adaptive release encourages students to read and reflect on their feedback before obtaining their grade and students' interviewed appreciated the potential benefits of disengaging the grade from the feedback. However many were unfamiliar with this adaptive release approach highlighting the importance of explaining the process fully. The most benefit was gained where students understood the process and the purpose. Whilst students liked to get their feedback and grade at the same time or very close together, they valued the learning benefits of having to engage with the feedback before the grade was released. Where grades were made available before the feedback, the feedback itself was not valued as having additional learning benefit.

Students liked the use of feedback templates linking feedback to the original assessment criteria as it enables them to identify their strengths and weaknesses at a glance, and provide a framework for identifying future learning targets and action planning. However, this approach does have limitations and there was a competing preference for 'in context' feedback suggesting a mixed model would provide the most comprehensive feedback.

**Recommendations**

Best practice recommendations for the use of technology to deliver actionable feedback have been identified from the study. These guides are aimed at students, academic staff and senior managers, and are intended to provide information and support change. The guides, along with further details of the Technology, Feedback, Action! project, are available at http://tinyurl.com/tfaproject.

**References**


The Relationship Between Student Attendance, Attainment and Availability of Lecture Material on the Virtual Learning Environment: A Study in the First-Year of A Bioscience Degree

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There is much evidence in the literature that suggests that student attendance rate is linked with both attainment and retention. Levels of attendance have been reported to be influenced by many factors, including as availability of lecture notes on the virtual learning environment. The aims of this current study were to investigate a) the links between attendance and attainment b) the reasons for student non-attendance at lectures c) the links between lecture note availability on Blackboard and student non-attendance in a first-year module of a bioscience degree. The study identified a wide variety of reasons for students not attending lectures, with the main reason being illness. The results confirm the link between attendance and module attainment, but did not find a relationship between availability of lecture notes on Blackboard and attendance. Therefore, for any university aiming to increase their overall student attainment the key recommendation would be the introduction of a robust and visible attendance monitoring system.

Keywords: Attendance, Attainment, Virtual Learning Environment

Introduction

Retention

Student retention is currently amongst the most fundamental issues affecting policy making in Higher Education Institutions (Longden, 2006). Annual performance indicators from the Higher Education Statistics Agency (HESA, 2008) show a worrying 11.3% non-completion rate for first-year, full-time, first degree entrants in 2005/06 at Liverpool John Moores University (LJMU). This has obvious financial implications and indeed it has been estimated by Bowden et al. (2005) that in their institution, an improvement in retention of only 1% would increase income by approximately £87,000. These financial implications cannot be dismissed by any higher education institution and current research into potential reasons for student non-completion must be considered if this trend is to be reversed.

A comprehensive study by Yorke & Longden in 2008 identified a number of factors that contributed to non-completion. When investigating the literature surrounding non-attendance at lectures and other learning opportunities, many of these same factors were also identified as potential explanations for non-attendance (Hunter & Tetley, 1999, cited by Dolnicar, 2005; Paisley & Paisley, 2004). For example, Yorke & Longden (2008) identified that students who missed a higher number of timetabled sessions had a greater number of factors affecting their reason for non-completion, including “a lack of commitment to their programme; a lack of studying outside timetabled sessions…the stress associated with their studies; the lack of study skills; and academic failure.” Consequently, a clear correlation between attendance and attainment has been found (Newman-Ford et al., 2008; Paisley & Paisley, 2004). These factors all indicate the importance that higher education institutions should put on improving student attendance if they wish to address retention.

Attendance

There have been a number of studies in the area of student attendance and these have indicated a range of factors that can be linked to non-attendance (Dolnicar, 2005; Newman-Ford et al., 2008; Paisley & Paisley,
2004; Woodfield, Jessop & McMillan, 2006). Specific factors include: part-time employment (Paisley & Paisley, 2004); deadlines for coursework submission (Paisley & Paisley, 2004); gender differences, with females more likely to attend than males (Woodfield, Jessop & McMillan, 2006); class size (Ward & Jenkins, 1992, cited in Dolnicar, 2005); poor lecture quality (Hunter & Tetley, 1999, cited in Dolnicar, 2005), and day or timing of learning opportunity (Newman-Ford et al., 2008; Paisley & Paisley, 2004).

It is interesting that although students fail to attend lectures and other learning opportunities they may still understand the benefit of attending. For example, a study by Paisley & Paisley (2004) identified reasons why students thought they should attend lectures, with the main reason being to increase their knowledge and understanding of their topic. This is backed up in a study by Dolnicar (2005) who identified that the main reasons for attending lectures was to “find out what I am supposed to learn”.

There has been a great deal of recent development in virtual learning environments (VLEs), such as Blackboard, and this has given rise to many members of academic staff making lecture-support material available to students using these online formats. However, anecdotal evidence suggests that some members of academic staff believe that if lecture notes/slides are placed on a VLE that this may result in lower attendance at lectures. The students may, for example, feel that they can catch-up on missed lectures (Newman-Ford et al., 2008), perhaps by looking at lectures notes on the VLEs. There is conflicting evidence in the literature as to the affect on attendance of making such material available to the students in advance of a lecture. In 2003 Weatherley et al. reported significantly decreased exam performance in Psychology exams from students who had access to lecture outlines on Blackboard, compared to those that did not have access to them. The authors suggested explanation for this reduced performance was potentially lower attendance at lectures by the students with access to the lecture outlines. However, Burd & Hodgson (2005) showed no correlation between availability of lecture notes and lecture attendance. This is supported by Grabe & Christopherson (2005) who found that students who made the most use of online lecture material were the students who had better attendance rates.

Link between attendance and attainment

Not only is poor attendance linked to attrition (Yorke & Longden, 2008) but there is also plenty of evidence that attendance is linked to attainment (Burd & Hodgson, 2005; Colby, 2004; Halpern, 2007; Paisley & Paisley, 2004; Newman-Ford et al., 2008). Colby (2004) found a direct correlation between the level of attendance and the marks obtained in a first year module. From this investigation the author developed a number of “rules” that emphasise to students the strong connection between attendance and attainment. Firstly, the “70% rule” was defined by Colby as “If a student does not attend at least seventy percent of teaching sessions they have a two in three chance of failing, and a four in five chance of not getting a first or upper second.” The “80% rule” was “If a student does not attend at least eighty percent of teaching sessions they have an even chance of failing, and a two in three chance of not getting a first or upper second.” Finally, Colby defined the “week two rule” as “If a student is absent for only one or two teaching sessions (depending on teaching load) during the first two weeks of any module then this is cause for concern”.

Burd & Hodgson (2005) extended from this to investigate the link between attendance at 5 core, level 2 modules and attainment in those modules. This was found to be significant. Paisley & Paisley (2004) also reported a clear correlation between attendance and attainment. However, their study explored the link between attendance and both coursework marks and examination marks. Although both were linked, they found the strongest relationship between attendance and examination marks. Woodfield et al. (2006) took a broader perspective on the association between attendance and attainment to demonstrate a relationship between average attendance throughout a degree programme and final degree outcome.

Aims of the study

The literature suggests that attendance is related to attainment, although there is no clear agreement as to the main reasons for student non-attendance. However, there is conflicting evidence regarding the effect of lecture material being placed on the VLE and the affect that this has on student attendance. Therefore, the aims of this study were:

a) To investigate whether there is a link between the level of attendance in a first year module and the final module mark
b) To identify the main reasons why students fail to attend a lecture
c) To identify any potential link between the availability of lecture notes on Blackboard and student non-attendance
Methodology

The module selected for this study was a first year, semester two module in the Faculty of Science at LJMU. This module is core for a large number of programmes from both the School of Natural Sciences and Psychology and from the School of Pharmacy and Biomolecular Sciences. The learning opportunities for the module comprise of lectures and two laboratory practical classes. There were a number of reasons for choosing this module for the study. Firstly, the module has a very large student cohort; with 200+ students registered on the module for every year of the study. Secondly, data on attendance and attainment were available for a three-year period (academic years 2005/2006 to 2007/2008), ensuring large n-numbers in the study for statistically meaningful analysis of the results. A small number of students, for various personal reasons, failed to obtain any marks in the assessment, even if they had attended some of the learning opportunities. As the aim of the study was to investigate the link between attendance and module attainment these students were excluded from the analysis, and this is in line with the study by Paisley & Paisley (2004). Therefore, the numbers of students included in the analysis were 597.

In the study by Burd & Hodgson (2005), attendance in practical classes was removed from the study as the authors felt that, as practical classes contained work that contributed to summative assessment, this resulted in an artificially higher level of attendance in these classes compared to lectures. In the present study attendance in the module was also higher in the practical classes compared to the lectures, for presumably similar reasons as described by Burd & Hodgson. However, the author felt that as the attendance level was not 100% in the practical classes this attendance data was relevant and should not be discounted in the study.

Each session takes place in a three-hour slot, with two breaks. A register was distributed after the second break (usually between 4-5pm) and students asked to sign it on an honesty basis. This method of data collection has a number of weaknesses as highlighted by Colby (2004). These include students not signing the register, students signing in the wrong place and students signing in their friends. The latter problem was removed in the practical classes as the register was taken from student to student by a member of staff, thus ensuring that students were not able to sign in their absent friends.

The questionnaires were anonymously distributed to the same Bioscience module during one academic year. They were distributed just before a summatively assessed phase test, which should ensure that the students completing the questionnaires covered a wide-spread of students with different attitudes to attending lectures. The two questions students were asked to respond to were: “What are your main reasons for missing lectures?” and “What are the main reasons that you access lecture notes on Blackboard?” The number of students completing the questionnaire was 175.

Attendance and attainment data were recorded on an excel spreadsheet and statistical analysis was performed using SPSS. The data is presented in either a tabulated format or graphically, and in such a way that protects all students’ anonymity.

Results

Each student’s average attendance rate for the module was compared to her/his total module mark. Figures 1 shows the relationship between attendance and attainment. As it would be possible to trace specific module performance to individual students, care has been taken to protect their anonymity. Hence, in Figure 1 the data for all students with the same average module attendance rate was plotted against the mean module mark for that corresponding attendance rate. However, in the analysis, raw scatter plot data was used in the statistical analysis, and all R² values and statistical significance values are calculated on the individual student’s data, rather than the averaged data presented. This was analysed using a Pearson’s correlation because this statistical test measures the strength of linear dependence between two variables (Clegg, 1997). The average attendance data for each student taking the module was compared to their total module mark (Figure 1). There was a significant correlation (R² = 0.4068 and p=<0.001) between module attendance and attainment, showing a relationship that is unlikely to occur by chance.

From Figure 1 there is a clear relationship between module attendance rate and final module mark. However, these data gives no indication as to why a student does not attend a learning opportunity. Therefore the students were asked to give their main reasons for not attending lectures. A wide variety of reasons were given (Table 1), with the main reasons being illness, hangover, and too tired (50.9%, 32.0%, and 22.3% of respondents,
respectively). Only 3.4% of respondents stated that the availability of lecture notes on Blackboard was a reason for non-attendance.

Figure 1: The relationship between module attendance and mean module mark (%) over a three year period for the level one Bioscience module studied. $n = 597$ students, mean results shown, +/- standard deviation (SD).

<table>
<thead>
<tr>
<th>Reason for not attending lectures</th>
<th>Number of respondents</th>
<th>Response (% out of total students responding)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness</td>
<td>89</td>
<td>50.9</td>
</tr>
<tr>
<td>Hospital/doctors/other appointment</td>
<td>17</td>
<td>9.7</td>
</tr>
<tr>
<td>Work commitments</td>
<td>5</td>
<td>2.9</td>
</tr>
<tr>
<td>Bad Weather/travel problems</td>
<td>18</td>
<td>10.3</td>
</tr>
<tr>
<td>Early starts</td>
<td>17</td>
<td>9.7</td>
</tr>
<tr>
<td>Too tired</td>
<td>39</td>
<td>22.3</td>
</tr>
<tr>
<td>Hangover</td>
<td>56</td>
<td>32.0</td>
</tr>
<tr>
<td>Did not wake up on time</td>
<td>23</td>
<td>13.1</td>
</tr>
<tr>
<td>Laziness</td>
<td>16</td>
<td>9.1</td>
</tr>
<tr>
<td>Lecturer/lecture boring</td>
<td>27</td>
<td>15.4</td>
</tr>
<tr>
<td>Material covered before</td>
<td>19</td>
<td>10.9</td>
</tr>
<tr>
<td>Lecture notes on Blackboard therefore no need to attend</td>
<td>6</td>
<td>3.4</td>
</tr>
<tr>
<td>Coursework deadlines the same day</td>
<td>28</td>
<td>16.0</td>
</tr>
<tr>
<td>Family problems/commitments</td>
<td>16</td>
<td>9.1</td>
</tr>
<tr>
<td>Personal issues</td>
<td>9</td>
<td>5.1</td>
</tr>
<tr>
<td>At home</td>
<td>17</td>
<td>9.7</td>
</tr>
<tr>
<td>Attending a funeral/bereavement</td>
<td>8</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Table 1: Responses given by students in a first-year Bioscience module when asked “What are your main reasons for missing lectures?” $n = 175$
The students were also asked to list their main reasons for accessing lecture notes on Blackboard (Table 2). The main reasons given were for revision and to print the notes off and bring with them to the lecture (67.4% and 59.4% of respondents, respectively). Although, interestingly one student had a very clear reason for not bringing lecture notes with them to a lecture: “Lecture notes on Blackboard to be printed off are a waste of paper that give the excuse to switch off in lectures and stop paying attention”. A much smaller number of respondents gave less expected reasons for accessing lecture notes, for example, to direct further reading (6.3% of respondents). However, 20.6% of the respondents stated that they accessed the lecture notes on Blackboard so that they could catch up on missed lectures, with one student making a clear intentional link between lecture note availability and non-attendance: “because I know the lecture is on Blackboard so I don’t need to go to the lecture”.

<table>
<thead>
<tr>
<th>Reason for accessing lecture notes on Blackboard</th>
<th>Number of respondents</th>
<th>Response (% out of total students responding)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To print off and bring to the lecture</td>
<td>104</td>
<td>59.4</td>
</tr>
<tr>
<td>To go through before attending lecture</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>To catch up on material covered in missed lectures</td>
<td>36</td>
<td>20.6</td>
</tr>
<tr>
<td>To direct further reading</td>
<td>11</td>
<td>6.3</td>
</tr>
<tr>
<td>To help complete coursework</td>
<td>4</td>
<td>2.3</td>
</tr>
<tr>
<td>Revision</td>
<td>118</td>
<td>67.4</td>
</tr>
</tbody>
</table>

Table 2: Responses given by students in a first-year Bioscience module when asked “What are the main reasons that you access lecture notes on Blackboard?” \( n = 175 \)

**Discussion and Conclusion**

This study identified that the main reason students failed to attend lectures was due to illness (50.9% of respondents). This was in line with a study by Paisley & Paisley (2004) that identified three main reasons for students missing lectures. These were illness, part-time employment, and coursework preparation. This current study confirmed that coursework preparation was also a key reason for students to miss lectures (16.0% of respondents), but did not find that part-time employment was a major cause (only 2.9% of correspondents).

In this study, the method used to record student attendance may potentially produce flawed data. Other studies use electronic attendance systems, such as ARCADE (Burd & Hodgson, 2005) and UniNanny® (Bowen et al., 2005; Newman-Ford et al., 2008), which may produce more accurate data. These electronic systems would have a number of further benefits. These include saving staff time in data collection, removal of human error in data recording and, not least, allowing attendance to be easily monitored. Unfortunately, there is no such electronic data collection system in place at LJMU, and there are obvious cost implications if such a system were to be purchased. However, it can be argued that any purchasing cost of the system would be offset by improving retention with its associated financial benefits (Bowen et al., 2005). In the absence of sophisticated attendance recording mechanisms, this current study has relied on traditional registers. However, despite their acknowledged limitations, there is no reason to suggest that the data generated will be significantly inaccurate. In light of this, similar recording techniques have been widely used in similar studies (Paisley & Paisley, 2004).

This study found a clear and significant link between attendance and attainment in the module considered. However, there was a large variation in the mean module marks for students attending the same percentage of learning opportunities (Figures 1). In fact, there were some students who did not attend any of the learning opportunities, but who did pass the module (10 out of 13 students with zero attendance). However, this may be a result of previously referred or deferred students, who had already attended the module, being included in the data.

This research adds to the strong case already made in the literature of a link between attendance and attainment (Burd & Hodgson, 2005; Colby, 2004; Halpern, 2007; Paisley & Paisley, 2004; Newman-Ford et al., 2008). Further to this, with an associated link between attendance and retention (Yorke & Longden, 2008) it is clear that it is not just in the interests of student to increase attendance, but also in the interests of higher education institutions. However, just because a student has a high attendance rate, they are not necessarily engaged with the module. There may be a ‘chicken and egg’ scenario occurring; do students attend because they are engaged, or do they become engaged because they attend? Is this prior engagement the reason why they obtain good module marks, rather than their level of attendance? This was extended by Paisley & Paisley (2004) who argued...
that low attendance could be the result of the student distancing themselves from the educational process due to their lack of aptitude for the topic. Furthermore, marks may be dependent on many other factors, including entry qualifications, which have been identified as a significant factor in determining academic success (Halpern, 2007; Woodfield et al., 2006). Students with good A-level qualifications may already have the level of study skills required for academic success.

It is interesting to note that students have reported understanding the benefits of attending lectures, and recognise that if they attended more frequently they would perform better (Paisley & Paisley, 2004). However, even bearing this in mind, they may still fail to attend. Burd & Hodgson (2005) suggested that this is because students are trying to find their work-life balance. Scott & Graal (2007) found that students knew their first year marks did not count towards their degree and therefore often aimed just to pass the module. This may explain why some students fail to attend first year teaching sessions as they may not place the appropriate level of importance on them. It is worth noting that this study focussed on a first year module, and additional research is needed to assess whether a similar relationship exists at levels 2 & 3. Furthermore, students may not equate attendance with learning. They may, for example, feel that they can catch-up on missed lectures (Newman-Ford et al., 2008) especially if lectures notes are available on VLE, such as Blackboard. However, data presented here suggests that although 20.6% of questionnaire respondents stated that they used lecture notes on Blackboard to help them during lectures, only 3.4% of the respondents cited availability of lecture notes on Blackboard as a reason to not attend lectures. Therefore, perhaps if lectures as missed for other reasons, such as illness then students will use the lecture notes to catch up on topics that they have missed. This is supported by Burd & Hodgson (2005) in a study that showed no correlation between availability of lecture notes and lecture attendance, and Grabe & Christopherson (2005) who found that students who made the most use of online lecture material were the students who had better attendance rates. In fact, it could be argued that by not placing lecture notes on the VLE, students with disabilities may be discriminated against as they may find attendance difficult or require notes in advance.

In conclusion, this study found a clear link between student attendance and attainment in a first-year Bioscience module, but no clear link between the availability of lecture notes of Blackboard and lecture attendance. With the relationship between student attendance and attainment, and the reported link between attendance and retention (Yorke & Longden, 2008), the author feels that higher education institutions should focus their attention on not only encouraging attendance, but also being more proactive in monitoring attendance. In fact, the evidence suggests that students who have their attendance monitored feel that their university cares about them (Bowen et al., 2005). Hence, there may be significant added value in the development of robust and visible attendance monitoring systems.

References


Improving Financial & Business Awareness Through an Online Business Simulation Game: Achieving the Most Appropriate Blend of E-Learning, Tutor Input and Support Materials

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This paper examines the use of an internet based business simulation, which is intended to provide twofold learning outputs. The first is improving participants’ tacit understanding of business operations and how the main financial statements are interlinked. The second is to prepare students for success in an online assessment, which leads to the award of a professional development certificate awarded by a highly respected global accounting body.

The focus of the research is to consider the most appropriate ways to use the simulation and supporting materials to achieve both of these outcomes in the most effective way. Work such as Csikszentmihalyi’s Flow Theory and Kiili’s Experiential Learning Model indicate that certain considerations need to be addressed when designing learning materials. For example, the achievement of a flow state has been shown to have a positive impact on learning (Webster et al 1993), the materials provided need to be adaptive so that the level of the challenge is appropriate for the skill level of users (Csikszentmihalyi 1991, Kiili 2005), whilst multimedia objects insert an unwanted layer between the user and learning and should be transparent to not hinder learning (Pearce 2005), users need a sense of control over the learning system (Csikszentmihalyi 1975) and appropriate feedback encourages continuous goal-directed actions (Kolb 1984). This work is in progress, some preliminary feedback has been received from a small number of participants. The outcome of feedback so far is overall very positive, though efforts to improve the overall experience are ongoing.

Keywords: Business Simulation, Financial Statements, accounting system, flow theory, employability

Introduction

This paper examines the use of an internet based business simulation game, and related explanatory and tutorial materials, which are designed to provide twofold learning outputs. The first is to improve participants’ tacit understanding of business operations and of how the main financial statements are interlinked and inform the business position. The second is to prepare students for success in an online assessment, which leads to a Professional Development Certificate awarded by a highly respected global accounting body. The simulation was originally developed as a training tool for non accounting staff in organisations, and the certificate provides recognition of the learning and achievement.

It is hoped to be able to use the simulation effectively in different learning situations, and three modes of use are planned. The first as part of a class based delivery, with tutor input with the simulation and tutorial materials to follow up. The second as a short, one day, game play session for groups of up to 20, working both individually and in small groups of 3 or 4 in the session, with follow up practice materials to prepare students for the test. The third is to develop in due course a completely online learning tool, with introductory materials, the simulation, tutorial exercises and practice materials to help students achieve the successful completion of the test.

It has been appreciated for some time that the use of games and business simulations as a learning tool can provide a rich and rewarding learning experience (Kiili 2005 in Kiili & Lainema (2006), Prayaga & Rasmussen 2007). This is especially so with business studies where a simulation can help to create an integrated approach
to learning the different functions of business such as accounting, management and strategy, which are often approached as separate subjects and in such circumstances can lack context, making it difficult for learners to develop coherent mental models of the business processes. (Selen, 2001). Also as technology has developed the opportunities for mimicking real life situations has become ever more sophisticated. However technology alone will not necessarily deliver a rewarding learning experience as student motivation and engagement with the learning activity has been seen as an important consideration to a successful outcome. To ensure their most effective use designers and tutors need to consider work on educational theories and continue to be guided by recognised good practice.

In an endeavour to develop the most appropriate blend of learning activities this research will draw on the use of flow theory as a theoretical base to investigate the level of student engagement with the simulation and supporting materials. This is a work in progress project, the pilot study was very positive and the learning package has been used in a classroom setting during this academic year and will be used in short sessions over the summer and into the next academic year. The distance learning version will not be made available within the university until sufficient feedback from classroom and tutor led short sessions has helped shape the online version.

**What is Flow Theory**

‘Flow’ was the term first used by Csikszentmihalyi in 1975 to describe an optimal experience, when a person achieves complete absorption in their activity. Csikszentmihalyi described the experience of rock climbers, who recalled that when climbing their minds were completely immersed in the activity, with no thoughts of anything else. According to Csikszentmihalyi (1991), flow can be achieved when a person is enjoying the activity, can concentrate on clear goals, has a sense of control over a challenging environment, has confidence in their own skill and ability to handle the challenge and receives appropriate and timely feedback.

These conditions can also be associated with an effective learning environment, Pearce (2005). The diagram in Fig.1 below illustrates that to achieve flow there needs to be a balanced combination of skill and challenge.

![Figure 1: Illustration of Csikszentmihalyi’s flow model as described in Pearce 2005](image)

This suggests that the learning activity needs to be sufficiently challenging to avoid boredom and well matched to the learner’s level of skill to avoid anxiety, suggesting that working with students with different ability levels could be problematic unless students can learn at their own pace or have the opportunity to engage the help of others. Also the level of challenge will need to increase over time to avoid boredom setting in.

Research indicates that achieving a flow state has been shown to improve the learning experience (Kiili 2005, Pearce 2005, Webster et al 1993). Kiili developed the ‘experiential gaming model’, which consists of a gaming cycle and a design cycle. The design cycle is relevant to the technical development of the software, which is not under consideration here, whilst the gaming cycle refers to the learning process and is based on flow theory. The gaming cycle described the experiential learning as a cyclical process involving active experimentation, reflective observation and schemata construction, this aspect of Kiili’s model is illustrated in the diagram in Fig.2 below. Kiili used his model to develop a ‘game flow questionnaire’ and parts of this questionnaire will be adapted for use in this research.
The Business Simulation and Test of Professional Development

The business simulation has been developed using advanced computer animation and provides a web based interactive simulation that is controlled through a schematic view of the businesses financial systems. The game has a time clock measured in days and hence the consequences of decisions taken, such as offering customer credit or changing the price, are played out over time. The simulation is presented in two volumes and progresses through a series of models, from the most basic sales and debtors cycle through to a complete, though simplified, accounting system in volume one, see Fig.3 below, whilst volume two investigates issues of price, demand, quality and markets and finally managing strategy and cash flow with limited financial funds. The later models in volume two provide business competition for the players, by playing against the computer and finally by playing against other students in the learning environment.

A demonstration of a relatively early stage of the simulation can be accessed at http://www.amplifying-intuition.com/breakthrough.html and it is hoped to have the simulation set up at the TIC conference for which this paper is prepared, either for demonstration or as a workshop. The simulation game is known as the ‘Business Flight Simulator’.

There is an illustration of the user interface in Fig. 3 below, where the boxes represent accounts, whilst the flow of resources, cash, goods, expenses etc. are represented through the direction of arrows in the adjoining ‘pipes’. A numerical view of the financial reports is also provided, as one of the main objectives of the simulation is to raise competence levels in understanding financial reports. Users have access to explanatory slides directly from the model if required and can take a practice test when the learning objectives of the model are complete.

It was identified in the flow model above that the skill level needs to match the level of challenge and the simulation provides for this in two ways, firstly through the build up of the complexity of the accounting system and choices within the models and secondly with the time clock, through level 1 – 5 which controls the speed of the game. Appropriate and timely feedback is also seen as an aid to creating a flow state (Csikszentmihalyi 1975, 1991, Kiili 2005) and can enhance the experiential learning experience (Kolb 1984). In a multimedia simulation such as this instant visual feedback is available and in this case there is also a practice test facility at each level of the model.

The ultimate goal of the simulation is to prepare students for success in the Test of Professional Development (TPD). This is an on line test undertaken in exam conditions and is in multiple choice format. The test is in two parts relating to the content of the two volumes in the simulation. Part one concentrates on the impact on cash flows and financial statements of decisions taken on business operations and Part two is testing understanding of business strategies for managing competitive markets and conserving cash flow. The practice questions included in the simulation are based on the style of question used in the TPD.
The TPD is quite demanding, and to assist practice for this a series of tutorials have been prepared for each model which allow students to work through the learning objectives of the model manually before checking their answers with the simulation.

Successful completion of the TPD is considered to be a good opportunity to enhance the employability of business school graduates and others who may find it useful to be able to demonstrate a level of competence in understanding financial statements and business competition, and this is part of the author’s motivation to use the simulation in the Business School and to undertake this research.

Different groups of students have been and will be invited to participate in the simulation and TPD. Participants’ experiences will be surveyed after working with the simulation and after the test, to gauge the effectiveness of the simulation, the related materials and the learning environments. It would also be useful to follow up with graduates after leaving the university to check if their perception of the usefulness of completing the TPD and holding the certificate continues to be positive, with the benefit of their experience gaining employment in a currently quite difficult job market.

**Work in Progress**

**The Pilot**

The simulation and TPD were introduced to the Business School by the accounting body as a fully developed simulation, already commercially available to corporate clients. The Business School was invited to participate in a pilot study to help assess the interest of staff and undergraduates, with the possibility of adopting it in the Business School. A pilot study was subsequently organised with a small group of n=8 first year accounting undergraduates over a one day session. These students had some accounting knowledge, so the simulation provided a mix of reinforcement of prior learning with some more advanced work, including taking decisions on...
competitive strategies which had not been covered at all on their first year course. The students were given a brief explanation of the business scenario and introduction to operating the simulation. They were then invited to practice the controls to understand how the game responded and through the course of the morning became competent with the model shown above. The models in volume two, covered the ideas of price/demand, quality and competition, which were introduced one by one with a short tutor explanation, until the students were able to attempt the full simulation to play individually and in groups against the computer. The culmination of the simulation allows participants to compete in the marketplace against each other, known as the ‘Challenge’, and the pilot group undertook this in small groups of 2 or 3, (the Challenge groups included two members of staff also experiencing the game for the first time.)

All the students in the pilot study elected to take the TPD and were given 1 week to practice with the simulation before their attempt. Seven out of the eight students were successful at the first attempt. The students were surveyed with two short questionnaires, one in relation to their studies and the other focusing on the game and test, the results of the latter are tabulated below.

<table>
<thead>
<tr>
<th>Question</th>
<th>1 Good</th>
<th>2 Satisfactory</th>
<th>3 Good</th>
<th>4 Poor</th>
<th>5 Poor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of access</td>
<td>87.5%</td>
<td>12.5%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>Ease of use</td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
<td>-</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>Content of models</td>
<td>50%</td>
<td>50%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>Content of Tests</td>
<td>37.5%</td>
<td>62.5%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>The challenge</td>
<td>75%</td>
<td>25%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 4: Table of survey results from students participating in the pilot study.

Overall the results were very positive, the students deeming the activity to be very relevant to their studies and the certificated award was seen as a valuable supplement.

However even though these results are positive there are issues to consider. For example, students commented that they found the early tests quite tedious, and in fact they do require some thought before answering. Tedious suggests not enjoyable and possibly boredom, both of which are shown to be not conducive to learning, according to the flow model (Csikszentmihalyi 1991, Kiili 2005). It was concluded that it may have been too soon to consider the tests on the first day of exposure to the simulation and since then tutorial materials have also been produced to help reinforce the simulation and practice for the tests.

Also from the results table ‘Ease of use’ had some satisfactory scores suggesting that this area could be improved. This is important to achieve a good learning experience and Pearce (2005) noted that multimedia artefacts can intrude on the learning experience causing the learners to focus on the artefact and not on the task at hand. Kiili & Ketamo (2005) explained that bad usability can decrease the opportunity to achieve task based flow because attention is drawn towards inappropriate activity, that of trying to use the model. However in time students became more competent with the controls and use of the simulation and commented that overall it was an enjoyable experience. The final Challenge particularly was seen as enjoyable.

The in class trial

Following the positive outcome of the pilot, it was agreed to use the simulation with a larger group within the business school, and it was used with a group of final year business students as part of a skills unit. This was a one year top up degree and the objective was to improve understanding of business financial statements and strategic decision making. An introductory lecture was given and the models were introduced from the beginning, with tutorial material to encourage students to anticipate the outcome of the model in advance of play. There were approximately 6 x 2 hour sessions to complete all the levels working in groups, though this proved to be insufficient for the approach taken and volume one only was completed in those sessions. The students have subsequently been introduced to volume 2 and provided with tutorial material to work through themselves. Students were set an assignment based on appreciation of the financial impact of decisions taken in the models covered in volume one, and encouraged to use the practice tests though these were not part of the formal assessment.

The students have the option to take the TPD following their final exams which are not yet complete at the time of writing, though there is a modest charge for this, payable to the software developer and certificating body.
There will be opportunity to complete volume two, the Challenge and the TPD for these students before graduation in July. As the work with this group is currently incomplete these students have not yet been formally surveyed, however feedback gained in the sessions was mixed, some students were very positive about this work and really keen to take the TPD, whilst others are not so interested in the financial side of business management and hence were less positive about the use of the simulation. There were also some distractions with the venue and set up, the group size was quite large and a venue of suitable size relied on Wi-Fi internet connection and the use of laptop computers, hence students needed to bring their own laptop or arrange a loan from the university, which for some did distract from full participation, though all were able to access the simulation through sharing.

Nevertheless the assessed work results were generally good, as can be seen from the results tabulated in Fig 5 below. The summative assessed work results were within expected norms for students on the programme, whilst it can be seen from the scores in the formative practice tests, where multiple attempts were available, that those who wanted to could achieve very good scores, whilst others had less interest in doing so. However on balance the outcome appears positive and quite encouraging for those intending to take the TPD.

<table>
<thead>
<tr>
<th>Scores (100)</th>
<th>70+</th>
<th>60 - 69</th>
<th>50 - 59</th>
<th>40 - 49</th>
<th>Under 40</th>
<th>Total participants</th>
<th>Average</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative Assignment</td>
<td>4</td>
<td>21</td>
<td>22</td>
<td>16</td>
<td>2</td>
<td>65</td>
<td>56</td>
<td>9</td>
</tr>
<tr>
<td>Formative Practice tests</td>
<td>35</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>50</td>
<td>70.4</td>
<td>18</td>
</tr>
</tbody>
</table>

*Figure 5: Results of the assessment related to the in class use of the simulation and supporting materials.*

**The next stage**

In addition to the group discussed above the opportunity to participate in the simulation and TPD will be extended to other final year undergraduates and some postgraduate business students who register their interest in doing so. These will be organised on lab based computers, be tutor led for groups of around 20 students working individually and in groups of 3 – 4, with up to 6 groups competing in the Challenge. The test days will follow approximately two weeks later or longer if necessary. Some introductory material is available to participants once they have registered and all accompanying tutorials and practice materials will be available following the game day.

The main objectives are twofold, first to provide students with an enjoyable and effective experience whilst improving their understanding of the business financial systems and strategies. Second to offer an opportunity to gain the certification, considered to be a useful addition to the curriculum vitae for new graduates moving into the employment market.

There is the potential to make available this simulation and TPD to many students within the university, but first it would be useful to further this research, to gain valuable feedback on the usability and effectiveness of the package. It is proposed to do this in several ways; firstly by using an adaptation of the ‘gameflow questionnaire’ from Kiili & Lainema (2008), it should be possible to assess the quality of the students experience whilst using the simulation for game play. Secondly further questions should address the effectiveness of the simulation and supporting materials in providing appropriate preparation for the TPD. In both these cases the questionnaires will also provide opportunity for open comment, which may indicate a need for follow up interviews. Thirdly, it would also be useful to follow up participants after leaving university to gauge their continuing opinion on the usefulness of the certificate in supporting their CV.

Information gathered will help inform the further developments of the use of the package within the university and may help inform the wider learning and teaching agenda within the university. It will also be helpful to provide feedback to the software developers and the accounting body to help inform their further development of the simulation and TPD.
Conclusion

Business simulations can provide an experiential learning environment, which Kolb (1984) explains can help facilitate learning. An appropriate balance of skill and challenge can also create a state of flow Csikszentmihalyi (1991). According to Kiili and Lainema (2008) the flow state has a number of characteristics which can be assessed and by developing the work of Csikszentmihalyi, Kiili & Lainema (2008) suggested that operational flow could be achieved through incorporation of the following flow antecedents. These are; clear goals, immediate feedback, gamefulness, playability and frame story. Gamefulness refers to the level of freedom within the game for example to choose different strategies, playability is their term for the usability of the game referred to earlier, and frame story is the context or the scenario of the game. Participants’ comments on the effectiveness of these antecedents in this simulation will be sought through the questionnaire.

The pilot survey referred to some of these features, though preparation for the TPD required more than experiential learning as there was a need to practice and become familiar with the style, content and level of the TPD prior to attempting it. The interest which participants have shown in acquiring the certificate has prompted further work on the most suitable way to provide this.

The work is ongoing and will have more results by the time of the conference in October.

References

To What Extent Can Podcasting Meet Individual Learner’s Needs and Improve Student Satisfaction?

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E-learning technologies, such as Web CT, Blackboard and Moodle have been adopted globally within the Higher Education (HE) sector (Khasaweh (2010), Paechter et al (2009)). Levy (2006) considers this to be a result of increasing global demand for higher education. The UK HE sector faces the challenge of meeting the learning needs of an increasingly diverse student body. According to figures from the Higher Education Statistics Agency (HESA) from 2004 to 2008 international student enrolments increased from 326 thousand to 389 thousand and accounted for 16.3% of UK total enrolments and the UK is the second top host destination for international students to the United States at 13% (Institute of International Education website (24.02.10)). This is set against a backdrop of reduced student funding within the Higher Education sector in England which has had a significant impact upon the study time for students as many are, by necessity, juggling academic work with part-time jobs to fund their studies. This has led to teachers exploring more innovative teaching methods to assist their students, and with further threats to cut government spending on Higher Education in the UK, this challenge is likely to continue.

Podcasting is a relatively new technology which can enhance a student’s learning experience and achievement. This study looked at the impact of the use of podcasts on student performance and satisfaction and shows that a blended learning approach is favoured by students, using a mix of traditional and self-directed learning opportunities, via Web CT, to accommodate preferred individual learning styles.

The aim of this paper is to create debate and stimulate interest to generate further research.

Keywords: Podcasting, student satisfaction, achievement

Introduction

The challenge of meeting the learning needs of multi-culturally diverse students stems from the increasing numbers of international students in addition to “home” students some of those are classified as from an ethnic minority background. At the same time technology advances are profoundly affecting the ways in which society at large organise their lives and communicate and this impacts upon teaching.

According to the Higher Education Statistics Agency (HESA) from 2004 to 2008 international student enrolments increased from 326 thousand to 389 thousand and accounted for 16.3% of UK total enrolments and the UK is the second top host destination for international students to the United States at 13% (The British Council). China accounted for 12.6%, which fell by 2.2% over the period, whereas the highest increase was from India in second place at 7.2% (an increase of 2.7%). The split between under and postgraduates was 51% to 49% respectively (there were no comparable statistics for 2004). The subject area of Accountancy falls within Business. According to HESA (Institute of International Education website (24.02.10)) in 2007/08 Business and administrative studies attracted the most students at 16% (out of a total of 19 subject areas) in the UK.

Podcasting is a relatively new phenomenon. According to Levy (2006) the term was coined in 2004. Many early podcasts took the form of audio and radio stations were early adapters. It has since developed into mixing audio and video capture and software and hardware is developing rapidly. Learners are able to access these managed virtual learning environments such as Web CT, Moodle or downloaded via i-tunes.
Impact of culture on the learner

Learning Styles

Evans and Foster (1997) compare Western with Asian students citing Auyeng and Sands (1995) who considered differences in learning styles and ultimately written work, in part due to western students being encouraged to be independent learners and think critically and be confident to question educators whereas Asian students are encouraged to be polite and show deference to educators and therefore not question authoritative figures, stems from cultural differences. Podcasting can enable learners who are not confident to question a lecturer to independently review their work.

Language

McGowan and Potter (2006) suggest that where teaching is delivered in English an inadequacy in English “hinders deep learning” and is cited by members of the Australian accountancy profession as one of the primary reasons for not employing an individual. Ippoliti (2007) found that language is often perceived as a barrier to communication as it hinders the process and can deter contributions from non-native English speakers although many students value intercultural learning. Broekmann and Pendlebury (2002) discuss the impact of language in terms of translation refer to Searle’s (1995) assertion that this is affected by individual’s background.

Northcote et al (2007) suggest that podcasts offer an additional opportunity to a non-native speaking learner as the audio facility adds an extra dimension over text in that it can enhance a learner’s vocabulary. This could provide an important advantage for those learners for whom English is not their first language, such as the Chinese or Indian learner in a UK HEI. A further point raised by Salmon and Nie IMPALA research was repeated listening both reinforces and enhances a learner’s understanding of subject related material.

Inequality of educational experience

Broekmann and Pendlebury (2002) suggest that in South Africa inequities within the education system have led to HEIs questioning teaching practice to accommodate such diversities. Although it is not explicit, it appears that Broekmann and Pendlebury (2002) are referring to inequalities with regard to educational standards of incoming students. The same can be said in the UK, especially post 1992 (Higher Education Institution) HEIs where increasing numbers of students are entering with an increasingly varying array of qualifications from traditional A level route to National Vocational Qualifications (NVQs) and combinations of these, which include elements of internal assessments, which are determined within guidelines by the assessing institution. The educational inequality issue can be overlooked by teachers but can be a key determinant in a student’s achievement and success. Studies have shown that a learner’s first year achievement is an early indicator of their final degree classification.

Darling-Hammond (2004) found a significant gap existed, in the USA in 2000, in access to computers and the internet between high and low-income or minority households. This gap was also replicated in schools with high proportions of students classed as in poverty as they had on average 60% of classrooms connected to the internet compared to 82% in more affluent schools. In addition, student to computer ratios were 9:1 compared to 6:1. If these gaps are replicated in the UK then tutors need to ensure that podcasts are made as accessible as possible in a variety of forms i.e. easily accessible from web based technologies as well as downloadable via i-tunes.

Background to the study

The HEI in this study introduced podcasts during the academic year 2007/08 within the Accounting and Finance division. These took the form of audio and video capture via a p.c. tablet and consist of the lecturer demonstrating accounting related techniques and processes. At this HEI, as with many others since 1993 students studying management and business programmes has doubled while the number of staff has increased by less than 10% (McGowan & Potter 2006). Within the Accounting and Finance Division there is in the order of almost 1,000 undergraduates in one academic year, this has resulted in lecturing up to 200 undergraduates in one hour sessions where the lecturer and learner have no opportunity to interact. For first year Management Accounting the lecturer created a podcast following each lecture working through the lecture activity to enable a learner to experience the lecture activity anywhere and any time and this allows them to fit academic life around other demands such as work and childcare. In addition, the learner has the facility to pause and replay each podcast indefinitely. The lecturer took on this role at the start of the academic year 2007/08, podcasts were
introduced from 2008/09 when it became clear, following a tutorial with one learner that they had not managed to make accurate notes from a lecture.

In this study podcasts were made available to all enrolled students on the Management Accounting unit. It is recognised that this differs from previous studies, such as Evans and Foster (1997) where a large group was split into two sub-groups where alternative e-learning methods replaced traditional teaching methods, as podcasts are intended to offer the learner a blended learning experience rather than purely an e-learning experience. Also this will offer a variety of learning opportunities and meet a wider array of learning styles. Given the size of the cohort i.e. 381 learners access podcasts via Web CT and so restricting access to some students would have been difficult to control and they are downloadable via an i-tunes link enabling learners to share. For this study the Management Accounting unit was compared with another accounting unit which the same students study and where no podcasts are available. Table 1 shows the ethnicity of year one students.

Table 1 Country of Domicile of enrolled students (obtained from HEI database).

<table>
<thead>
<tr>
<th>Country</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>83</td>
</tr>
<tr>
<td>Chinese</td>
<td>7</td>
</tr>
<tr>
<td>Cyprus</td>
<td>5</td>
</tr>
<tr>
<td>Wales</td>
<td>1</td>
</tr>
<tr>
<td>Ireland</td>
<td>1</td>
</tr>
<tr>
<td>Pakistani</td>
<td>1</td>
</tr>
<tr>
<td>Other *</td>
<td>2</td>
</tr>
</tbody>
</table>

*Other includes: Hong-Kong, USA, Malaysia, Maldives, Saudi Arabia and Vietnam.

The student satisfaction and achievement rates were compared to Financial Accounting unit as both units are key core units from levels four to six in the BA (Hons) Accounting and Finance. The student cohort ranges is around 350 per year. There are a diverse mix of students in terms of age, gender, cultural, ethnic background and previous educational experience. The aim of the podcasts was to provide a blended learning rather than an e-learning experience. Podcasts were produced of each lecture activity after the lecture had taken place each week. Each podcast was between ten and fifteen minutes duration. Where a lecture activity had taken longer in the lecture each podcasts represented a part of a question. This also added flexibility for the learner as they could select the aspect of a topic they had difficulty with. For example, the topic of valuing closing inventory involves using three different methods from the same data which would take almost the full hour in a lecture, however, three podcasts were produced each depicting one method with an additional podcast explaining written aspects of the topic. The author has been the unit leader for the Management Accounting level four unit since 2007/08, therefore the teaching style and text based resources remained largely the same for both years of study.

The HEI employs Web CT as a platform for its virtual learning environment (VLE), which is accessible to all enrolled students via the internet. Within the HEI each unit studied has an identifiable area within Web CT. For the Management Accounting level four unit web links were created for each podcast, although during the academic year an i-tunes download link was also developed which would enable students to download directly to a mobile device of their choice. With such rapid advances in technologies there is a danger that educators assume that all learners have equal access to such technologies, however, the financial position of individual learners cannot be assumed to be equitable. Authors such as Greenhow et al (2009) also identified this as a potential issue from their study on low-income students and suggest that many teachers assume that internet accessibility is not an issue for such students, when in reality it can present a barrier to their progress especially if they are more dependent upon public facilities.

Findings

Student satisfaction and achievement

Many tutors find one major benefit of providing podcasts for learners is that there are fewer face-to-face meetings with the learner trying to clarify understanding particularly in the few weeks prior to the exam. With large student cohorts, this is of great benefit to both tutor and learner.
Table 2 Management Accounting: student satisfaction and summary of achievement

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>2007/08</th>
<th>2008/09**</th>
<th>2009/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Cohort (number of students enrolled)</td>
<td>347</td>
<td>381</td>
<td>348</td>
</tr>
<tr>
<td>Survey response (number of students)</td>
<td>16</td>
<td>24</td>
<td>66</td>
</tr>
<tr>
<td>Average mark %</td>
<td>43</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Position of unit within the Business School</td>
<td>?</td>
<td>4th</td>
<td>n/a</td>
</tr>
</tbody>
</table>
| ** podcasts introduced | **n/a – not yet available

Table 2 is a summary of the results in terms of student satisfaction and achievement. The author would like to point out that for 2007/08 the average mark of 43% was identical to the other core accounting unit. However, since 2008/09 Management Accounting has outperformed the other accounting unit in terms of average mark and student satisfaction, however, the number of students responding to the satisfaction survey for 2009/10 was identical at 66. Across the Business School it has been found, generally, that units providing podcasts as an additional learning resource to full-time undergraduates outperform those that do not in terms of student satisfaction.

In 2009/10 the lecturer responsible for pioneering podcasting within the Business School has been nominated the university top lecturer in a survey instigated by the Students’ Union. This lecturer provides each learner with a C.D. of all their podcasts for learners that are unable to access them via the internet. The first year Management Accounting unit in 2008/09 was in the top five rated units within the Business School. Student exam performance increased from an average score of 43% to 55% year on year, with a noticeable improvement in answers for a standard costing variance analysis question. These findings echoed those of McKinney et al (2009) who reported improved exam performance. However, Lazzari (2008) found no evidence that podcasting affected part-time student results, but interestingly where full-time students had been involved in creating podcasts their learning experience was enhanced. Lawlor and Donnelly (2010) found that there was a learner preference for podcasts which features the original speaker’s voice embedded within their materials, which is the most commonly used method within the Accounting and Finance undergraduate programmes at the case study institution. It was also interesting to see the increase in student responses from 2007/08 to 2009/10, whether this is indirectly attributable to podcasts increasing learner engagement it is not known but could be a factor. It should be pointed out, however, that student satisfaction depends upon a range of factors relating to pedagogy (see table 3).

Table 3 Student Survey Responses 2008/09

<table>
<thead>
<tr>
<th>What students like about the unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Tutorials and lectures are easy to understand.</td>
</tr>
<tr>
<td>● The lectures are easy to follow, and makes concepts easy to understand with examples. The lecturer goes through topics step by step and is quick to reply to emails regarding any problems</td>
</tr>
<tr>
<td>● We are given in depth lecture notes with enough questions to complete to test new skills that have been learnt</td>
</tr>
<tr>
<td>● Handouts are well presented and broken up into step .. the lecturer understands that some of us have not done this before.. very helpful</td>
</tr>
<tr>
<td>● Tutorials and podcasts</td>
</tr>
<tr>
<td>● Lectures go through worked examples excellently to ensure it is easily understood. And if there were any problems there were more than enough resources on Web CT to help.</td>
</tr>
<tr>
<td>● Very well planned out module by the lecturer. All material was covered in depth, and going through tutorial questions in lectures was a very effective format of teaching, used rarely by other tutors. Handouts were very well structured and presented.</td>
</tr>
<tr>
<td>● Slides always available on intranet</td>
</tr>
<tr>
<td>● I like the podcast as it helps in revision. The lecturer showed us how to approach to questions step by step which is good. This way, we are able to follow and eventually have more interest in the subject.</td>
</tr>
<tr>
<td>● The podcasts on Web CT are very useful</td>
</tr>
<tr>
<td>● Very clear and a lot of examples/practice</td>
</tr>
</tbody>
</table>
It can be observed from student comments that podcasts are only mentioned specifically on three occasions out of eleven, although the resources on Web CT is also noted in one instance. It was also interesting to note that with the exception to favourable comments about the podcasts, the responses from students in 2007/08 were similar, which indicates teaching style is also important.

It is useful to note that although there are many tutors willing to embrace the new technologies there are some who remain less convinced of the perceived benefits to both tutor and learner. The advantage of increasing the student survey response rate is that it can be argued that sixty six is a reflection of the student cohort and this in turn may change tutor attitudes. However, the training needs of these tutors must also be accommodated and time provided for tutors to become confident in utilising the technology. At the HEI where the author is employed the appointment of e-learning champions is a planned step to assist colleagues with producing podcasts. During 2009/10 the Accounting and Finance division purchased a relatively inexpensive and effective pen which records both audio and written work. At the time of writing one of the unit leaders reported improved student exam performance in their level five unit, which they feel is attributable to the introduction of podcasts during 2009/10.

**Student Activity on Web CT**

Table 4 below contains statistics directly obtained from the HEIs Web CT.

**Table 4 Unit Student Activity for Academic Year 2009/10**

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Management Accounting</th>
<th>Financial Accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>348</td>
<td>355</td>
</tr>
<tr>
<td>Number of visits by Course Item Usage</td>
<td>64,378</td>
<td>53,325</td>
</tr>
<tr>
<td>Average visits per student</td>
<td>185</td>
<td>150</td>
</tr>
<tr>
<td>Average time per visit (mins)</td>
<td>5.75</td>
<td>2.43</td>
</tr>
</tbody>
</table>

It is interesting to note that for the Management Accounting unit the average time per visit is more than double that of the Financial Accounting unit which had no podcasts available and that the average visits per student were twenty three percent more. As in previous years and has been found to be the case in other units, the most active day was the day before their final exam. Also the most active hour was 14.00 – 15.00 again in line with previous cohorts. It was also interesting to note that there were no significant differences in usage between native and non-native learners as classified in table 1.

**Course Item Usage – Web CT**

Both units are assessed identically with a multiple choice paper in January which accounts for thirty percent of the final mark, followed by a summer exam accounting for seventy percent. From the course item analysis it was also worth noting that although both units have a mock January exam paper 3,535 and 1,621 visits were made to the Management Accounting unit and Financial accounting respectively. Whether this is due to early increased engagement from the use of podcasts cannot be certain. The author would like to point out that podcasts were in the twelfth top viewed item with 600 visits, after past exam papers and revision resources. It is not possible to track directly visits to individual podcasts for those produced via Camtasia or via i-tunes as learners are able to download these in a single visit. However, the pen was used for podcasts on a new topic area – Investment Appraisal. There were three podcasts produced for each method: payback period, net present value and internal rate of return (IRR). The web server for these shows each viewing individually and these show between 65 and 76 viewings i.e. a maximum of twenty percent of the cohort viewing them. These headline statistics provide a useful insight into the full-time undergraduate study techniques.

**Conclusion**

The success of podcasts may to some extent depend upon factors such as the learner’s prior experiences with learning technologies, willingness to try new technologies and this may depend to some extent upon their cultural background. Moss et al. (2010) suggest that future research should attempt to establish the determinants of students’ willingness to engage with new learning technologies. Greenhow et al. (2009) focused their study on low-income students and suggest that many teachers assume that internet accessibility is not an issue for such students, when in reality it can present a barrier to their progress especially if they are more dependent upon public facilities. If this is the case this could further disadvantage these students as Lee and Tynan (2009) found
that learners prefer to listen to podcasts at home using a laptop or desktop, which enables them to focus, rather than using mobile devices.

Given the evidence of learners reliance on a variety of resources for studying it is seems that students need a variety of study resources both text and electronically based. It may be the case that the podcast provides additional variety, but this study does not show that podcasts should replace traditional teaching methods, rather that they be used to enhance the learning experience and a blended approach is advantageous. It may be the case that the podcast is a tool to increase learner engagement, which if found to be the case is a key driver to embed podcasts.

Further Research

Given the findings of improvements in both student satisfaction and exam performance, future studies should focus on the learner utilisation of podcasts. In this study a blended approach was used, the aim was to provide additional learning support to the learner rather than a replacement for attending lectures and tutorials and this was made clear to the learners at the outset. It is also clear from the tracking facility within Web CT that learners are utilising a blended learning approach. It would be useful to devise preferred learning style questionnaires that establish learners study techniques. Many previous studies such as Vogt et al. (2010) utilised podcasts as an alternative to attendance at lectures and tutorials. It may be the case that the effectiveness of a podcasts is heavily dependent upon the underlying model of learning as pointed out by Lawlor and Donnelly (2010) and this would be an interesting focus of future studies. It would be useful for future studies to establish whether internet accessibility inequalities exist between students of differing income levels. Also to what extent learners have access to mobile technology e.g. i-phone. With gaps in accessibility identified by Darling-Hammond (2004) and Greenhow et al. (2009) future studies need to analyse cohorts of students in terms of income, previous educational experience to establish whether such gaps exist.

Although there is evidence that podcasts enhance student satisfaction in many units, particularly units which require familiarisation of techniques e.g. accounting techniques it is not clear to what extent the learner values podcasts relating to more theoretical subjects which are more prolific as the learner progresses to level six. Future studies should focus on how podcasting technology could enhance the learners achievement at this level – maybe allowing the learner to create their own podcasts as found by Lazzari (2008) would be most beneficial. This may also enable the HEI to develop learners to move from dependant to independent as they progress to level six which is recognised as important by both educators and employers. However, with large cohorts of students in excess of 200, careful consideration needs to be given to the accessibility of the required resources.

References


Social Software For Collaboration Adaptive Learning in E-Learning

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Over the last decade, e-learning has been delivered by technology-enhanced learning (TEL) model which puts heavy emphasis on content delivery and technology without focusing on the social aspects of learning and individual learner’s needs in learning. In this 21st century, learning is becoming more social, personal, distributed, flexible, dynamic and lifelong in nature; this requires learning to change in focusing from technology-driven to people-driven model to have a collaboration that could foster knowledge networking and community building based on the individual learner’s needs. It also changes the cycle of a learner’s knowledge and learning practice. We perceive that connectivism and personal learning environment, as key concepts that reflect in today’s learning characteristics and could improve the learning context. The major purpose of this research is to understand which technologies can be developed to meet the requirement and changes of today’s learning characteristics. The current available web trends and technologies (social software and Web 2.0) can help to overcome the limitations of the traditional e-learning into collaboration adaptive learning in which learners control over their learning process. Collaboration adaptive learning is also able to deliver quality learning resources with collaboration from the experts and knowers from the Communities of Practice (CoP) which tailors to their learning needs, preferences, interests, skills, learning objectives, etc.

Keywords: Collaboration adaptive learning, social software, Web 2.0

Background

The evolution in learning has changed from d-learning (distance learning) to e-learning (electronic learning). E-learning is naturally suited to d-learning; however, e-learning is not quite the same as d-learning. D-learning is a concept that has evolved into e-learning (White 2007). D-learning is used to describe a learning environment that takes place away from the actual traditional face-to-face learning (White 2007), whereas e-learning is a learning concept that uses networked and communication technology (i.e. Internet, network). A number of terms such as online learning, virtual learning, distributed learning, network and web-based learning have also been used to describe the mode of e-learning (Naidu 2006).

In the mid-90s, the introduction of web-based platforms and internet connectivity, allowed education to explore how this new technology could improve learning. In addition, the current web trends, for example the introduction of Internet, e-mail, web browser, multimedia and web applications has also changed the style of learning. Today, it has enhanced d-learning into a more effective method in terms of access and delivers the learning context. Learning is no longer dictated by a learner geography, age or background experience. This eventually has changed d-learning to e-learning.
Introduction

Over the last decade, e-learning has been delivered by TEL model. However, TEL model put heavy emphasis on content delivery and technology (content and technology-centric model). Most TEL content today is designed, authored, delivered and managed via Virtual Learning Environments (VLE) as statically packaged online courses and modules without focusing on the social aspects of learning (Chatti et al. 2008). Examples include Learning Management System (LMS) such as Blackboard and Moodle that are commonly and successfully used in e-education (Graf et al. 2007).

The content and technology-centric model of learning has failed to achieve performance improvement and innovation (Chatti et al. 2008). Harmelen (2006) agreed by pointing out that traditional LMSs are not flexible enough or are not addressing to the individual needs of a specific learner. Since learning is becoming more social, personal, distributed, flexible, dynamic and lifelong in nature, this requires learning to change in focusing from technology-driven to people-driven model to have a collaborative environment that could foster knowledge networking and community building. According to Chatti et al. (2008), learning is basically about people.

Over the past few years, the Web has been shifting from being a medium in which information is transmitted and consumed into a platform in which content is created, shared, remixed, repurposed, and passed along (Downes 2005) and a platform where people connect in a form of digital social networks. This transformation has been largely due to the availability and popularity of social software such as social networking sites (i.e. Facebook and MySpace) which attract and support networks of people and facilitates connections between them to form an online community and Web 2.0, a read-write web where anyone can create, assemble, organize and share content to meet their needs and those of others (McLoughlin and Lee 2007).

The current web trend of social software has been opening new doors for dynamic and social learning. It helps to connect people within a learning institution and with the professionals outside the institution to share ideas, to collaboratively create new form of dynamic learning content, to get effective support and to learn with and from peers. Social software can lead to a new generation of TEL model.

Theories and Concepts

Many universities are applying e-learning as a tool to support and enrich their campus-based face-to-face learning and teaching experiences. Their goals in most cases are to enhance flexibility and efficiency in delivering learning content and to increase learning opportunities for their students. However, as social technologies such as social software and Web 2.0 continue to expand, it influences not only the learners’ behaviour and needs but also the theories and concepts of learning processes design and approach. As discussed, learning is becoming social, personal, flexible, dynamic, distributed and lifelong in nature. E-learning can no longer be just a tool for delivering content to the learners.

Thus in this research, we consider theories and concepts of learning that reflect today’s learning characteristics. In this section, few theories and concepts have been discussed which are to be addressed to ensure that the new generation of TEL model will be endured.

Learning Components

The relational aspects of learning and knowledge processes pointed out by Chatti, Jarke & Frosch-Wilke (2007) are revolving around the three components as shown in Figure 1: knowledge/information repositories, communities and networks, and experts and knowlers.
**Figure 1**

**Knowledge/information repositories**: information repositories are created by codifying the collective knowledge of the organization and making it readily available (Chatti, Jarke & Frosch-Wilke 2007).

**Communities and networks**: Siemens (2006) defines a community as the clustering of similar areas of interest that allows for interaction, sharing, dialoguing and thinking together. Concept of Communities of Practice (CoP) has been introduced by Lave and Wenger (1991). Wenger (1998) states that CoP is different from a network in the sense that it is about something; it is not just a set of relationship. It has been an identity as a community, and thus shapes the identities of its members. This will form trust in this CoP and will dedicate to support each other in increasing knowledge and enhancing performance in a particular objective.

**Experts and knowers**: Rosenberg (2006) stresses that experts are more than a source of knowledge, they are also advisers who are charged with providing guidance, corrective feedback and performance assessment.

In the traditional TEL model, the lecturer in the university is viewed as the centre of all knowledge and e-learning is a tool where all the knowledge is delivered to the learners by the lecturer. Whereas, in the new generation of TEL model, learners have the ability to control the learning process and the knowledge acquired through the concept of CoP, which is a network where learners can reach out to the experts and knowers to seek for knowledge based on their learning needs and time frame. The cycle of a learner’s knowledge and learning practice is revolving around the three components as shown in Figure 1 and not just between the learner and the lecturer.

**Connectivism**

In today’s e-learning concept, the challenges that lie ahead are not just about bringing the course to an online community, but also to break through the course-based limitation to create a true networked learning environment. Learning is becoming a social participation whereby learners create, sustain, share knowledge in a collaborative way through participation in a network and community. To build such community and network, learners need to go beyond the classroom boundaries by involving and communicating with the experts and knowers in order to form a CoP. Thus, connectivism as a new learning theory which has been introduced by Siemens (2005), presents learning as a connection/network-forming process. Through connectivism, learner can access to any learning resources from anywhere and anytime. Learning and knowledge is no longer restricted to a classroom but it is also from a community of people and resources; it leads to a more resourceful learning and provides an education without boundaries.

Connectivism is characterized by the following principles (Siemen, 2005):

- Learning and knowledge require diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliance.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between field, ideas and concept is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
• Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Connectivism’s principles address the lifelong learning. Pettenati and Cigognini (2007) argue that connectivism can lead to a re-conceptualization of learning which can be integrated as to build a potentially lifelong learning activity to be experienced in a personal learning environment. Learning is no longer restricting to the classroom based and to the formal learning inside learning institution; it is an activity which happens throughout the entire life without boundaries in this 21st century of learning environment. Therefore, there is an increasing demand for new approaches towards fostering lifelong learning perspective.

Besides that, research in learning and instruction suggest that people learn most effectively by pursuing realistic goals which are intrinsically motivating (Schank et al., 1994). Learning is greatly enhanced when it is exposed in a real-world learning context which is more meaningful and contains real problem solving elements.

Personal Learning Environment (PLE)

As discussed before, the traditional model of LMSs has failed because they are too content and technology-centric without addressing to the individual needs of a specific learner. It is important to move away from a one-size-fits-all content-centric model to a user-centric model that puts the learners at the centre and give them control of what, who and how to learn and approach. This also means to move away from LMS to PLE (Chatti, Jarke & Frosch-Wilke, 2007). Milligan (2006) defines PLE as system with a set of tools which is more fully supportive towards the learning process and is more closely matched to the needs of an individual learner. These tools would give the learner greater control over their learning experience and would form their own personal learning environment in which they could use to form a CoP based on their learning needs.

PLE driven approach does not only provide personal spaces, which belong to and are controlled by the learners but also requires a social context (Chatti, Jarke & Frosch-Wilke, 2007). This approach provides a learning environment that gives the learners multiple levels of socializing support and encourages the development of communities of inquiry.

New Generation of TEL Model

The major purpose of this research is to understand which technologies can be developed to match the requirement and goals of the theories and concepts that have been discussed to build the new TEL model. Despite the growing recognition of the technology and function of instructional design in e-learning, it has failed to make the best use of the opportunities that technology can provide to make learning even better and effective. Instead of exploiting the uniqueness of information and communication technologies (i.e. Web 2.0, social software) that are available to develop desirable values, attitudes and behaviors which affect learner’s success and performance outside the formal education (Naidu, 2006), the nature of the learning content that are delivered by the traditional TEL model is still based on content and technology-centric model which are still oriented in a lecturer-directed and delivery-centered concept.

The current web trends and technologies that are available can help to empower learners to improve in learning and connect learners to people and resources outside of the classroom boundaries efficiently by incorporating real-world learning into e-learning to the learners. There is a whole lot more potential that these technologies can support the e-learning system, rather than just a tool for uploading and downloading the learning content.

Social Software and Web 2.0 Meet E-learning

The technologies that we refer to are social software and Web 2.0. Our current web trend is entering a new phase of web evolution which becomes read-write web; it has been referred as Web 2.0 by O’Reilly (2005). A new generation of user-centric, open, dynamic web, with peer production, sharing, collaboration, collective intelligence, distributed content and decentralized authority in the foreground (Chatti, Jarke & Frosch-Wilke, 2007). Table 1 illustrates five of the key differences between the traditional Web 1.0 and Web 2.0.
Social software is one of the Web 2.0 tools. Social software is used in a different context. In the context of distance education, Anderson (2005) has defined it as a networked tool that supports and encourages individuals to learn together while retaining individual control over their time, space, presence, activity, identity and relationship.

Social networking sites (SNS) (i.e. Facebook, Friendster, MySpace) is an example of social software which will be integrated with e-learning to create a new TEL model in this research approach. SNS is an Internet application that enables people to meet, connect or collaborate through computer-mediated communication and to form online communities. SNS like Facebook is maintained and functioned by a single individual (i.e. learner) and it is a system that connects the individual to the CoP and vice versa as shown in Figure 2.

Thus, there is a driven approach to the new TEL model which will be broken down into the following key points towards learner’s learning experiences:

**Personal Tools and Environments**

This point is based on the PLE approach where learning tools are controlled by the individual learners based on his/her needs and interests. Recognizing that learning and knowledge are personal, thus it required an approach that moves away from a one-size-fits-all content-centric model and towards a user-centric model that puts the learner at the centre and gives him/she the control over the learning experience (Chatti et al., 2008). This helps learners in organizing and exchanging their personal knowledge and the knowledge that they acquire.

**Community Building**

SNS supports community building. For example, the Facebook’s ‘wall’ where users can exchange short text messages with their networked friends which are visible to all other users who belong to the local network that created which involves social interaction. Commenting on the ‘wall’ can lead to interaction between the ‘wall’ post-author and ‘wall’ post-readers in that network and can lead to interesting discussion and debates. Consequently, this will create a social knowledge network from a group of people with similar interests to form a CoP. With this interaction, learner forms CoP by combining the following communication nodes:

- One-to-one (learner and learner)
- One-to-many (learner and peers)
- Many-to-many (learners and communities)

When the learner forms CoP, the learner can actively contribute and involve in other nodes on the network to share his resources, contributions and ideas. In this experience enables lifelong and real-world learning.

<table>
<thead>
<tr>
<th><strong>Web 1.0</strong></th>
<th><strong>Web 2.0</strong></th>
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</thead>
<tbody>
<tr>
<td>Publishing (Britannica Online)</td>
<td>Participation (Wikipedia)</td>
</tr>
<tr>
<td>Personal websites</td>
<td>Blogging</td>
</tr>
<tr>
<td>Content management</td>
<td>Wikis</td>
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<tr>
<td>Directories (taxonomy)</td>
<td>Tagging (folksonomy)</td>
</tr>
<tr>
<td>Stickiness</td>
<td>syndication</td>
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</tbody>
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Table 1 (O’Reilly, 2005)
Knowledge-Pull Model

This idea is to bring learning content to a learner’s personal space. It also enables a wide access to learning resources, both the people and the material. This means that the learner’s learning space is also expanded and not only restricted within the classroom boundaries. According to Chatti, Jarke & Frosch-Wilke (2007), in knowledge-pull model, learners create an environment where they can pull content that meets their particular needs from a wide array of high-value but less structured resources like information repositories, communities and experts, thus creating much more of a flexible, real time learning and knowledge culture. Media sharing is a good example from SNS applications that can foster knowledge-pull model by sharing discovered media with people that have similar interests and needs within the CoP.

Collaborative Adaptive Learning Platform (CALP)

CALP from Klamma et al. (2007) is an approach that overcomes the limitations of the traditional TEL model and it introduces collaboration adaptive learning by evolving social software such as blogs specifically and Web 2.0. According to Klamma et al. (2007) CALP aims at supporting lifelong competence development and represents a fundamental shift toward a more social, personalized, open, dynamic, and distributed model for learning. The CALP main goals are to place the learner at the centre, give learners control over their learning process and deliver quality learning resources from the experts and knowers which are formed from the CoP, tailoring to their needs, preferences, interests, skills, learning goals, etc. Furthermore, it is also to support lifelong competence development by providing means to connect people to people, as well as people to the right knowledge.

However, social software is not only restricted to blogs. According to Pettenati and Cigognini (2007), social networking is deeply rooted in our daily behaviour, interactions and conversations. This supports informal learning practices, contributing to the creation and transmission of knowledge. The social behaviour and the support of its technologies and applications enable in building network which made by the learners to form a CoP, a network which tailors their needs, common learning goals, interaction, communication, collaboration, etc within the CoP. Therefore, social networking is essential in CALP to create collaboration adaptive learning.

Conclusion

The traditional e-learning concept is conducted through content and technology-centric models which provide learners with tools that support in delivering content to the learner. However, this has failed in addressing the individual learner’s needs in learning. In this modern era, social interaction can be an integral part of learning and can certainly enrich learning experience. It is important to move learners towards social learning (within CoP) to make learning more social, personal, distributed, flexible, dynamic, lifelong and real-world which reflect to the learner’s needs.

In order to overcome the limitations of the traditional TEL model, we can exploit the potential for connectivity by using social software and Web 2.0. This approach allows learners to have their own personal learning environment, access to ideas, resources and communities.

We are going to further research on creating a CALP for Swinburne Sarawak in a social networking framework. Based on the characteristics of social software and Web 2.0 applications, we believe that both technologies and the current web trends are able to highlight the social perspective of learning, and the architecture that supports interaction, collaboration, lifelong and real-world learning for the students.

References


Quality is What Quality Does!

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Quality is the buzz word in the higher education arena. Though it is much discussed, assessed and formalised there is an issue with quality in general, primarily the lack of follow-up after issues are highlighted. The elements of a good quality system involve not only monitoring via evaluations but as well acting on the stakeholder voice for improvements. This paper gives a brief overview of the research backing such form of feedback and a case study as a showcase illustrating the symbiotic union of evaluation and improvement.

Keywords: Quality, student evaluation, feedback

Introduction

Quality, Quality, Quality, words that resound within the university walls worldwide! The quality factor is much discussed area within institutions of higher education, governments and funding bodies. A factor that is much debated and has been much researched over the last four decades is feedback provided by students of their learning and teaching environments.

What then is student feedback? Harvey (2001) defines student feedback as “the expressed opinions of students about the service they received”. One way many universities have approached the process of allowing students to express their opinions is through student surveys or evaluations which serve numerous purposes. Bennett and Nair (2010) argue that the major purposes of such feedback are that it; serves as diagnostic feedback that aids in the development and improvement of teaching; is useful research data to underpin further design and improvements to units (subjects), courses, curriculum and teaching; measures teaching effectiveness that may be used in administrative decision making; and, a measure for judging quality of units and courses which is increasingly becoming tied into external funding formulas.

The first two these purposes are recognised universally as the basis for many student evaluations (e.g., Nair & Fisher, 2001). The latter three purposes are somewhat new to many universities especially in the Australian context. Because of the importance of feedback, surveys are now generally utilised in almost all facets of higher education including planning, recruitment, graduation and alumni satisfaction to name a few.

With the push to quality outcomes in higher education, this paper aims to give an overview of the importance of evaluations in the quality agenda, and a case study as a showcase that evaluation and improvement work hand in hand to achieve changes in the learning and teaching environment.

Research on Evaluations

The lessons learnt from the meta-analyses of research undertaken over the four decades provide strong evidence that student evaluations are a valid and reliable means of assessing teaching effectiveness and the quality of the educational environment in general which in turn is correlated with learning outcomes.

In general, the research within the field of evaluations ranges from issues of bias, statistical reliability and effectiveness of evaluations. Although there has been substantial research on the effectiveness of student feedback, questions are often raised by teachers about their validity (Feldman, 1997; Marsh, 2001; Nasser & Fresko, 2006). One common criticism that is brought to light in many corridors of higher education is that students lack the wisdom and experience to provide effective feedback. However, research shows a high correlation between student course-end ratings and ratings of instruction by peers, administrators and alumni (D’Apollonia & Abrami, 1997; Marsh & Dunkin, 1997). Sciven, (1995) furthers this by arguing that students...
are “in a unique position to rate their own increased knowledge and comprehension as well as changed motivation toward the subject taught. As students, they are also in a good position to judge such matters as whether tests covered all the material of the course” (p. 2). There is clear evidence that feedback from student evaluations can lead to improved teaching effectiveness (e.g., Marsh, 1987, 2001; Marsh & Dunkin, 1997).

Another common assertion is that student feedback is just a popularity contest. Research has consistently shown that this assertion is not to be the case, as has the assertion that to gain good evaluations, teachers should simply make the course easy (e.g., Feldman 1997; Greenwald & Gillmore 1997). The research demonstrates the reverse of this assertion that teachers who assign more and difficult work tend to be rated as more effective teachers (Greenwald & Gillmore 1997; Marsh, 1987). Centra (2003) and Marsh (2001) on the other hand found that courses that were delivered at the “just right” level received the highest evaluations. Other factors generally found to be unconnected to student ratings include class size, teacher characteristics (gender, age, teaching experience) and student characteristics (age, gender, personality) (Cashin, 1995; d’Apollonia & Abrami, 1997; Feldman, 1997; Marsh & Roche, 1997, 2000).

Engagement of Students

A primary consideration in evaluations is the extent and nature of response to surveys by participants. In general many universities have difficulty in achieving good participation rates. Coates (2006), argued that the participation can be increased if respondents’ sense an involvement in the survey process. Supporting this is a number of research that show that students and graduates are generally becoming increasingly disengaged from surveys especially in the higher education setting (e.g., Krause, Hartley, James & McInnes, 2005). Clearly there is a type of dynamics at play here that needs to be invoked to achieve good responses so as to generate robust statistical analysis. Like Coates (2006), Bennett and Nair (2010) suggest a key ingredient to better response rates is greater engagement of students in the process.

An argument that has been commonly voiced by many in the academic arena is the phenomenon of ‘survey fatigue’ which is the over surveying of students. This has been argued as the possible root cause for low response rates. However, the evidence suggests that the reluctance of participants to continue to provide feedback is much more likely because there is little evidence of the action taken in response to their feedback (e.g., Harvey, 2003; Leckey & Neil, 2001; Powney & Hall, 1998). For example, Leckey and Neil (2001) argue that, “closing the loop” is an important issue in terms of total quality management. If students do not see any actions resulting from their feedback, they may become sceptical and unwilling to participate (p. 25). Bennett and Nair (2010) further this argument and suggest that there is a need to provide more information to students about the purposes and the subsequent use of evaluations in the quality process.

Evaluations and the Quality Cycle

In essence surveys play a pivotal role in the quality assurance process especially in determining strategies, policies and practices that shape higher education. To understand where surveys fit into the process, one has to examine the fundamentals of a quality cycle. The major elements of the quality cycle are; Plan, Act, Evaluate and Improve. Figure 1 illustrates a generic version of the elements in the quality cycle.

![Figure 1: Generic version of a Quality Cycle](image)

The first element of planning denotes the formal planning process at all level; Act includes all the activities undertaken to implement the plans; Evaluate has two major aspects-monitoring and review. Monitoring is a short and medium term activity mainly for developmental or formative purposes. Review on the other hand is a longer term activity and more formal process that has both formative and summative purposes. The final element of the quality cycle is the improvement phase which identifies actions taken to generate improvement.
from the evaluation data. A key element of any quality assurance process is the union of evaluation and improvement.

**Case Study**

The case study presented in this paper is from a large research intensive Australian university home to about 55,000 students. A key quality monitoring tool the university utilises is unit (subject) evaluations. Student evaluations of units are undertaken of each unit in the year they are offered. Each unit is surveyed either via paper or online modes of administration.

Paper evaluations are administered on a schedule developed by faculties and is usually handed out in the last week of each semester. Paper based surveys are handed out during class time by administrators other than the class instructor. Students in units selected for electronic evaluations are notified by email at the start of the five week evaluation period. These online evaluations are completed by accessing each unit on the portal which is linked to the evaluation questionnaire. Students completing web-based evaluations can complete the survey at the time of their choice within the 5-week period. Reminder emails are sent weekly at set times to only students who have not responded. Students are advised in the emails that their responses remain anonymous and confidential and their student identity is not linked to their responses in the database. The email also contains information on what the university does with the feedback and the links to previous student feedback reports. Weekly reports are forwarded to faculties tracking response rates for each unit that has been evaluated.

Approximately 8,000 units per year are evaluated across all campuses. The potential response pool has remained almost consistent, around 290,000. The response rates associated with the unit evaluation has risen from just over 32% to just over 50% over a three year period.

**Survey Findings**

Figure 2 shows the means of the seven items in the questionnaire. The items are measured on a 5-point Likert scale with a score of five being strongly agree and a score of one being strongly disagree. Figure 2 shows that all areas measured by the unit evaluation survey are on an upward trend though in many cases moving up marginally.

![Graph showing survey findings](image)

**Legend**

1. The unit enabled me to achieve its learning objectives
2. I found the unit to be intellectually stimulating
3. I found the resources provided for the unit to be helpful
4. I received constructive feedback on my work
5. The feedback I received was provided in time to help me improve
6. The overall amount of work required for this unit was appropriate
7. Overall I was satisfied with the quality of this unit

Figure 2: Trend in unit evaluation data over a two year period
Discussion

The main findings coming out of the survey data were issues relating primarily to teaching and learning. A key highlight from the survey results was the importance students placed on teachers providing prompt and useful feedback in the units (subjects). A number of research papers (e.g. Billing 1998; Williams et. al, 2008) indicate that providing feedback is critical to good teaching. Further, the research literature also argues that the items measuring feedback in general score lower in many institutional surveys (MacDonald et. al, 2007). The importance of feedback is highlighted in a number of studies. For example, Gibbs and Simpson (2004) in their research argue strongly that feedback to students on their assessed work is the most important factor on student achievement. On the other hand, Falchikov (1995) reported that learning depends on quick and helpful feedback but this seems to be lacking in an expanding higher education system. However, despite the importance of feedback as a factor in good teaching the process to change as a result of the student voice has been slow.

As a result of the student voice from the surveys the University earmarked feedback as a high priority area for improvement. With the underpinning knowledge of the research on feedback, the university initiated a number of changes to ensure that there was a systematic approach to giving feedback. The approaches adopted include

- the use of pro-forma marking schemes which give students details on where improvements could be carried out to obtain a higher grade;
- making the schedule of feedback on marked assessments clearer;
- providing feedback in alternative forms (e.g. in class, email, one to one, computer aided); and,
- using the tutorial sessions to engage students in the classroom to explore issues that were not clear in class.

Though the above changes have been adopted, systematic monitoring of the implementation of initiatives across the university is still lacking. Although a causal link between action and feedback is often difficult to prove, there are indications that a rise in satisfaction with a survey item as reported in this paper often coincides with actions arising as a result of the student voice (Williams, et. al, 2008). The actions taken and reported in this paper are in the infancy stage, but even with the initiation of changes in its early stages, Figure 2 generally shows a positive effect on student satisfaction.

Further, the universities endorsement of the quality and evaluations was reinforced when the University supported changes in teaching practices by passing a policy to ensure that no further assessment can be called for submission until the previous assessment was returned with relevant feedback. Relevant feedback here is defined as providing students with relevant information on the strengths and weakness of their assessed work.

Supporting the quantitative data were the qualitative comments in the survey. The comments on feedback indicate that it is an important issue from the student perspective. The comments in general indicate student expectations in this area. Further, the comments don’t reveal a concern of the type of assessment that is utilised in the classroom but relate more to the practicality of the issue, that being the timely and usefulness the feedback. This finding is consistent with previous research of Gibbs and Simpsons (2004). Interestingly, almost a quarter of the comments on assessment were directly related to feedback issues.

The overall pattern of the results as shown in Figure 2 seems to suggest a general satisfaction in the other areas measured by the survey. However, on deeper analysis, students were discerning in that they reported units which were not performing satisfactorily. For example, students reported units where the unit objectives were not clear and the learning materials and assessment weighting to be not appropriate. The results also suggest that the trend of increased satisfaction resulted from the University’s commitment to hear the student voice. To achieve this outcome, a special team of academic developers was set-up from the Centre of Advancement of Teaching and Learning (CALT) to systematically analyse the results and then proceed into faculties to work with units which were not performing to standards set by the university. One gauge of measure was that items which scored a mean of 3.0 or less on a 5-point Likert scale were targeted for improvement. This approach resulted in activities tailor-made to help the academic and the faculty achieve the best possible outcome. The types of activities that were provided by CALT included: reviewing and reshaping unit objectives, aligning assessment tasks to objectives, providing advice and ideas on innovative assessment tasks, reviewing learning materials, providing unit guide and learning material templates, conducting workshops on how to give effective student feedback and highlighting the role of learning objectives in curriculum development.

An important step in any quality process that utilises stakeholder feedback is the communication involved once such feedback is obtained. For example a couple of faculties focused on improving communication of survey
results and the proposed future actions back to students. This aspect has been found vital in gaining feedback from students; ultimately impacting on the enhancement of learning and teaching and is supported in the academic literature (e.g., Harvey 2003). An example of this is the incorporation of changes in the unit outlines and explaining the changes in the classroom and various faculty and student forums.

Conclusion

University leaders and quality managers are acutely aware of the need to regularly listen to the student voice. Surveys are one of the most popular ways of routinely collecting student feedback with a key element being the union of evaluation with the improvement phase of the quality cycle.

The survey results and actions described in this paper along with the research literature in general, demonstrate that there is an advantage to engaging students, the key stakeholders in the educational environment. Student surveys in general provide institutions with a rich resource of students’ perceptions of the teaching and learning environment. By using student feedback to inform quality improvement, students will see that their opinions are valued by the institution. This is a critical factor in not only getting constructive feedback from the students but also sustaining their engagement. The paper also suggests that if actions are followed through stakeholders will further engage in the process.

In summary, an effective quality assurance system such as the one described in this paper relies on the effectiveness of the evaluation system, the tools and the actions that follow. Most importantly there is a need for universities to realise that not only feedback from students is an important and integral part of the quality cycle but also such feedback provides reliable and valuable information on which a university must act to better meet the needs of its students. It is best summarised in a paper presented by the Graduate Careers Council of Australia (GCCA) as follows (Graduate Careers Council of Australia 1999, p. 20):

“It is a myth that all you have to do is to send back the result of a survey to those concerned and action, improvement and innovation will automatically occur. Such an assumption ignores all the research on motivation and change management in universities.”

References


Exploratory Study of Students’ Perception Towards Learning Experience in Their Industry Placement in the Hospitality Industry

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The objective of this study was to investigate the student's perception towards their learning experience during their industry placement. Focus groups were used to obtain students' perception about their industry placement. All 15 students just enrolled in advance diploma hospitality courses in a Malaysian Higher Learning Institution were selected from one hundred twenty students and were arranged in 3 groups of five students. To analyze the data the method used to code and categories focus group data were adapted from approaches to qualitative data analysis. It was found that there is strong evident that students perceived their industry placement as being beneficial to them. The results suggest that the students after their industry placement had improved in their practical skills and were more confident towards their field of work. This study also found that the industry placement is meaningful for the students. Even though they had to pay their own expenses and go on rotation shift and long hours of work, they still perceived they had benefited from the industry placement. However, due to the limited period of the industry placement, the study found that the students were unable to apply all of what they had learned in the classroom during the placement.

Keywords: Education Internship, Hospitality Industry, Work Experience, Work Based Learning, Industry Placement

Background

In spite of the outbreak of Influenza A (H1N1) and the global economic downturn the number of tourists to Malaysia increased to 15.38 million 2009 from 14.73 million 2008 according to the Malaysian Ministry of tourism (The Star News Paper, 2009). The consistency of growth in the hospitality industry business has made employers demand for graduates who can bring sufficient practical skills and experience with them from the learning institution (Packert, 1996, Chapman, 2006), so that they can begin working without further training. However, the World Tourism Organization reported that many Asian countries are lacking adequately trained professionals, and similarly Malaysia’s high institution was not producing “work-ready” graduate (Wise, 1993; Fong, 2004). Furthermore, according to the National Restaurant Association (1999) educational requirements to work in a restaurant will become more complex.

Hence, students need to be aware of the importance of their learning experience in their industry placement. Kiser and Partlow (1999) indicated that one of the most common applications of experiential learning is the industry placement, which is also known by other terms such as internship, externship, and field experience. In fact, through this students have the opportunity to develop skills and gain experience in areas not easily learned in a classroom (Howard, 2003). Therefore in the early 1980s, both industry and academics agreed that industry placement experience learning was an essential component of the student’s academic (Morrison & O’Malony, 2003). Previous researchers found that through this kind of experience learning, students will attain a variety of outcomes that help them to succeed in future careers (Haimson, 2001; Hutchinson, 2001). Furthermore, the industry placement is to provide real world experience and hands-on learning to update their skill and knowledge (Kimberly & Zhao, 2004). Students learning how to survive in the workplace did not come until they stepped into the real world of hospitality industry (Dina, 2005).
In order to train the students well, hospitality educational programmes should aim to educate graduates who can be reflective practitioners, possessing a wide range of transferable skills, and exercising personal initiative (Ladki, 1993). This is based on Kolb’s experiential learning which is grounded on the basic these students on industry training would have chance to experience real life situation in the workplace. Kolb’s (1984) experiential learning is founded on the idea that learning is grounded in experience. It places learners in a model characterized by a four-stage process (Conceicao, 2004): Concrete experience (CE) stage, this represents learning that relies on feeling based judgments. They learn best from examples in which they can be involved with peers rather than authority. Reflective Observation (RO) stage, it is reflects a tentative, impartial, and reflective style of learning. The learners rely on careful observation or watching in making judgments. Abstract Conceptualisation (AC) stage, describes learners who are analytical, logical thinking and rational evaluation. Activities that reflective thinking can provide a more satisfying learning experience. The final stage is active experimentation (AE). This learning relies heavily on active experimentation. Individuals learn best when they can engage in hands-on work. However, in order to be an effective, one should be able to connect with the learning process at various stages on the model (Smith & Kolb, 1986).

Beckley (2002), pointed out that if students are to be trained in subjects that are relevant to the workplace they have to be given the opportunity to observe and learn how the theoretical material that is presented in class is demonstrated at work. In fact, Busby (2003) in his study encountered confidence increased through their ability to apply what they had learned in their classroom to the industry placement. It was also found that students were able to learn many skills and gain insightful experience of the industry. Pavesic (1993) discovered that students are aware that hospitality work ethics require long hours and personal sacrifice, and they must physically and mentally prepare for it. However, there are some students who participate in industry placement with little or no experience about the nature of the industry. To many students, the reality of split shifts, weekend work and long hours frequently comes as something of a shock to their system and there often follow painful periods of adjustment for students (McMahon, 1995). It may happen sometime students who has problem did not know where to turn too. According to Dwyer, (2001) it was found that new trainees experienced anxieties and frustrated during their new unfamiliar or perceived unfriendly learning environments. Although industry placement has long been recognized by higher institutions as an important learning experience, however, studies have found that many students do not work for long in the industry even with this type of placement training (Pratten, 2003, Dina, 2005). It was also highlighted that what students perceived may not exceed to what they expected initially (Waryszak, 1997).

From the literature review it is obvious that there is a need to develop further understanding about industry experience learning. It has been found that students’ ability to get experience during industry placement will depend on a number of factors such as “the type of model, strategies, and the quality of supervision in the workplace” to train them (Walo, 2001). To be successful, the learning should be done according to a structured program that uses task list, job breakdowns and performance standards as strategies plan (Blanchard, 1998).

**The Purpose of Study**

The purpose of this study is to explore how students perceive and evaluate their experiences during their industry placement. The findings may help improve students’ industry placement experience and also the decision making for the curriculum of hospitality courses in the future. At the same time it will also assist hospitality educators mould students to be more employable. Therefore, this study is based on two main research questions:

1. What are students’ perceptions towards their learning experience during their industry placement?
2. How do students’ perceive their ability to apply what they had learned in the classroom to their industry placement?

It must be noted that although this study is limited to a Malaysia population, it is hoped that the results will provide useful information that may be applied to other similar situations.

**Research Methodology**

A focus group design was used to investigate the student's perception towards their experience during their hospitality industry placement. Focus group involves organized discussion with a selected group of students to gain information about their views and experiences of a topic and is particularly suited for obtaining several perspectives about the same topic. The participants from which the sample was drawn consisted of 15 students.
from just enrolled the first year advance diploma in hospitality management students from 120 students who had just completed their industry placement during their last semester of the second year diploma course.

The 15 students were arranged in three groups, each group consisted of five students. Glesne (1992) suggest that interviewing more than one person at a time proves very useful; some students need company to be encouraged to talk, and some topics are better discussed by a small group of people who know each other. Before the interview the students were briefed that the information given by them were be kept strictly confidential, and they were free to leave the group at anytime. The students were interviewed using semi-structured interview questions. Students were encouraged to talk freely about their perceptions related with their industry experience such as their feeling, anxieties and frustration and the interview will record. The research questions led us to the interpretive approach. The aim of this approach is to view reality as being socially constructed where the behaviours of individuals are being continuously interpreted and reinterpreted to give a meaningful explanation to behaviours usually within a particular context (Holiday, 2002; Radnor, 2002). The interviews will fully transcribed and for coding the transcript it was necessary to go through the transcripts line by line looking for significant statements and codes according to the topic addressed.

Results

Students’ perceptions towards their industry placement

1) Anxiety at the workplace during training
The 15 students were asked to relate their perceptions of the working experience during industry placement. Three students shared feelings of anxiety during the industry placement. Students A noted that;

“On my first day in the kitchen training, I felt very scared and nervous because of the new unfamiliar workers. But after I found that I could mix well with all the staff and chef, I was not too scared and nervous anymore, I started to follow what the chef taught me and I was able to work normally in the kitchen”

Students B and C voiced similar feelings:

“At the beginning I was nervous and afraid of the hotel environment and everyday just hoped my training will finish faster. I also hated the hotel manager when he scolded me because I worked very slow”

“I was worried and nervous of how I would be treated by them and how to face real working life during my first day”

It must be noted that the first time the students were in the hotel environment they were nervous and anxious. The finding seems support to the research by Dwyer, (2001) that the new trainees experienced anxieties and fear of failure in new unfamiliar or perceived unfriendly learning environments.

2) Stressful during industry placement
Two students perceived that training in the industry was very stressful because of the shift rotation and long hours of working. Students F and G said that they felt stressed.

“Working in front office was very stressful. As I have to work at odd hours such as the morning shift and the afternoon shift. Furthermore I have to work very fast to complete my task”

“I realized I was very stressed because of the rotation shift, long working hours, having to stand all the time and did not get any salary”

The nature of work in the hospitality industry require individuals to withstand the pressures of working with people, stress of working in the close quarters, and standing for hours at a time. Pavesic (1993) found that students are aware that the hospitality work requires long hours and personal sacrifice, and they must physically and mentally prepare for it. Pratten (2003) and Dina (2005) found that many would not work long in the hospitality industry, because being a hospitality staff is a very physical profession. There are students who enter hospitality courses with little or no idea about the nature of the industry. To many students, the reality of split
shifts, weekend work and long hours frequently comes as something of a shock to their systems and are often followed by painful periods of adjustment for students (McMahon, 1995)

3) Better future career
Although the industry placement was stressful for the students, however, three of the students found it very meaningful. For them obtaining knowledge and skills especially for their future undertaking was important. Students N, O and H described that;

“I am very happy to have gained the knowledge and precious experience during this industry placement. In this training I have gain experience to improve my future career”

“The learning experience in College and the practical experience in the hotel are both significant for my future career development”

“The industry attachment has prepared me physically and mentally for my future career in the hospitality industry.

Although they felt that the industry placement training was stressful for them, they found that the placement actually prepared them for their future career. This finding is supported by Haimson and Bellotti, (2001) and Hutchinson (2001) who found that students through their experiences in industry placement attain a variety of outcomes that help them to succeed in future careers.

Students’ perception of their ability to apply what they had learned in the classroom to industry placement

1) Ability to apply technical skills and non technical skills they had learned
When asked to comment on their ability to apply what they had learned in the classroom to their industry placement. All fifteen of them agreed and said that industry placement actually gave them opportunities to practice whatever they had learned in the classroom, both technical and non technical skills. All fifteen students shared their own individual experience. For example students J said the abilities they had learned in the classroom were applicable during the industry placement:

“During my experience, I was very glad that almost every thing that I learned in the classroom was applicable there. For example, the cutting of vegetables: Julienne, cube, turned carrot and turned potato. This experience I had learned from Western food preparation.

Student K expressed something similar:

“My first industry training area was in the pastry kitchen. When I was stationed there, I had learned varieties of pastries. Most of the steps and methods used for these items were similar to what I had been learning before in the classroom in the baking and pastry subjects”

Student L shared her experience when training in the restaurant;

“The things that I have learnt in college is very useful and applicable to the industry attachment. For example like good manners while greeting the guests, tidy and hygienic grooming, welcoming and serving the guests, and letting the guest be seated”

The students were able to apply abilities they learned in the classroom during their industry placement, like basic cutting skills, cooking skills, that they had learned from western food and baking subjects. This finding is supported by Beckley (2002), that if students are to be trained in subjects that are relevant to the workplace that they have to be given the opportunity to observe and learn how the theoretical material that is presented in class is demonstrated at work.
2) Industry placement too short
The students commented about the industry placement seeing too short for them. Furthermore, it is difficult to learn all skills during in the industry placement in eight weeks. Students A and B commented as follows:

“The two months of training was not enough so if possible the college needs to make it more longer so that we can apply whatever we learnt in classroom over there”

“I feel that two months of industry training was not enough for me because there were many things I had not learned due to lack of time”

While another student D remarked:

“I personally felt that these two months industry training was no enough for me because I just went through four kitchen departments. I suggest the industry training period can be longer for five or six months, so that I can practice what I had learnt in classroom”

Due to the limited time frame students were not be able to use all of the abilities they had learned in classroom during the industry placement. At the same time they did not gain much experience either. This finding is supported by pervious research by Waryszak (1997) that found that students were able to learn a lot of skills and gain an insightful experience of the industry, it was highlighted that what students perceived may not exceed or equal to what they expected. Added in to this a hospitality educational program should aim to educate graduates who can be reflective practitioners, possessing a wide range of transferable skills, exercising personal initiative, and who are analytical in their approach to situations (Ladki, 1993).

3) Confidence
The industry placement was able to build student’s confidence level towards working in a real environment. Two students D and M said that;

“From this training I have greatly improved my confidence. The knowledge and skill that I learned in college classroom made me work easily and faster, it also made the supervisor need not worry about me when he gave me a task”

“What I had learnt from classroom had helped me improve my job skills in the different hotel’s departments, Furthermore, I can handle and complete the assigned job with more confidence and ease”

The students, who had completed their industry placement, seemed to recognize more clearly the connection between what was learned from classroom and practiced in the industry placement. Students knowledge and abilities learned from classroom were not perceived to be separated. This is supported by Busby (2003) in his study that found confidence increased through application what they learned in their classroom to the industry placement.

Conclusion

The finding shows strong evidence that industry placement is beneficial to hospitality students. It gives students the opportunity to transfer all they learned from the classroom to the actual working environment. It seems to show that the students after their industry placement had improved their practical cooking skills, ability, had gained confidence, improved their work attitude and strengthened their physical stamina and became mentally prepared for their future work. However, industry placement needs to be reviewed and possibly be extended for longer time so that students can gain more experience during in hotel. Although hotels have modern equipment, and convenient work areas many hospitality students perceived their training in the hotel very stressful because of the shift rotation and long hours of work especially in kitchens. Added to this students are not given any allowances by the industry other than food and lodging.

However, the industry experience has given them the opportunity to become better workers, and could in the future provide them with better employment prospects. According to this research some students found their industry placement experience very meaningful, and also among the most valuable learning experiences they
had. Although it was reported by previous research that many of them drop out of the industry altogether, realigning student expectations may help reduce the risk of drop out by giving them real hands-on experience. From the results, it would seem that hospitality students view their industry placement as an opportunity to enhance their personal and interpersonal communication skills and gain a better understanding of the organisational issues that surround the hospitality industry (Zopiatis, 2007). It is hoped that this study will provide an insight in to the needs for enhancing students’ industry experience at the same time helping educational institutions provide excellent candidates for the workplace. However further research is needed as it was found that up to 40 per cent of hospitality graduates do not work specifically in the hotel industry after graduation (Bray, 2002) even with meaningful industry placement. This problem needs further investigation, in order to understand the reasons for this and at the same time design more effective placement experience by working more closely with the industry.

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The Applicability of Bowen’s Family Theory to the Malay Population

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The changes of economic status in Malaysia have lead to many psychosocial problems especially among the young people. Counselling and psychotherapy have been seen as one of the solutions that are practiced in Western culture. Most counselling theorists believe that their theory is universal however there is limited research to prove it. This paper will describe an ongoing study conducted in Malaysia about the applicability of one Western counselling theory, Bowen’s family theory, to the Malay population. Two main tenets of Bowen’s family theory the differentiation of self and the transgenerational process have been examined in this study. Differentiation of self levels in the family allow a person to both leave the family’s boundaries in search of uniqueness and continually return to the family in order to further establish a sense of belonging. In addition Bowen believed that this process is intergenerational. Three hundred and fifty families were approached to complete a survey comprised of four measures; Differentiation of Self (DSI), Family Inventory of Life Event (FILE), Depression Anxiety and Stress Scale (DASS) and Connor-Davidson Resilience Scale (CD-RISC). Preliminary findings are discussed and the implication in enhancing the quality of teaching family counselling in universities is explored.

Keywords: Bowen theory, Counselling, Education

Introduction

Malaysia’s transition from a dependent British colony and third world economy to a modernised regional power has been extremely rapid. Transition from a traditional agriculturally-based to a modern industrial economy has improved economic growth and has led to a reduction in poverty. As a result, many Malaysians now enjoy a comfortable standard of living and an improvement in their quality of life. However, while the economic changes have provided substantial opportunities for growth in Malaysia, it has not been accompanied for some by an improvement in well-being. Often, as countries rapidly industrialise the complexities and demands made on the individuals, families and societies increase. Many young people are unable to cope with all the complexities and industrialisation for them has had a negative impact on their physical, social and emotional development. As young people’s well being has been identified as an important indicator that determines quality of life, this is a serious problem (Cartwright, 2000). The increasing number of social problems such as drug addiction, child sexual abuse and mental illness particularly among teenagers in Malaysia will impede the progress of economic development and also the creation of a well-balanced society in the future.

Counselling and psychotherapy has been seen as one of the solutions used in Western culture to overcome psychosocial problems. Several studies have investigated whether counselling is effective with these psychosocial problems (Bower, Rowland, & Hardy, 2003; Florentine & Anglin, 1996; Gregorich, Kannega, & Sangiwa, 1998; Warne & Mcandrew, 2005). Most of the research confirms the efficacy and effectiveness of counselling in reducing these psychosocial problems. Specifically, family therapy has been seen as a long-term solution in alleviating social problems especially with youth. A review of studies conducted by Stanton and Shadish (1997) concluded that family therapy can produce significantly better outcomes than non-family oriented individual counselling approaches to overcome psychosocial problems.
As counselling and psychotherapy have their origins in Western culture, most theorists believe that their theories have universal applicability. Western models of therapy have been used in virtually all parts of the world (Laungani, 2004). As a result, a number of family theories have been taken from United States and have been taught to counselling students in Malaysian universities without any specific reference or any amendment for cultural diversity. For example, Murray Bowen, the fundamental of Bowen Family System Theory has claimed that his theory is universal and can be applied to all cultures (Kerr & Bowen, 1988) without concern for any cultural differences.

While other researchers such as Carter and McGoldrick (1999) support that argument by declaring that Bowen’s family systems theory is a powerful theoretical framework which can be used among diverse cultural groups, only a few actual studies have been conducted. Most general findings have shown that Western approaches to counselling are different and cannot be applied directly to all peoples due to cultural differences (Raney & Çinarbas, 2005). The specific studies examining Bowen’s family theory in different cultures is limited. Skowron (2004) has examined the applicability of Bowen’s theory to different cultural groups who were living in America and found there were no cultural differences. Tuason and Friedlander (2000) looked at Bowen’s theory in the Philippines and found that there were cultural differences to consider before using Bowen’s theory with Philippines families.

Even though most counselling theories were developed based on western culture and background, it still acceptable to expect that this western approaches help to expand eastern own theory of helping (Talib, 2010). However, it is not known whether this approach is applicable to Malay families. Being a former British colony, Malaysia has been heavily influenced by Western ideas and systems. In addition, higher education has also been influenced by educational practices in the United States. For instance, Malaysia has 20 government-supported public universities along with six public university colleges but over 600 private colleges. The public universities are open to all who graduate from secondary school. Most higher degree students also attend these heavily subsidised government universities. These are the universities which offer counselling courses, often leading to licensure. However, while the education system has been influenced by Western philosophy, the population that the trainee counsellors will work with might not be similarly influenced. This could be particularly so with family counselling and family counselling theories as the traditional Malaysian family is focused more on the parent-child relationship than on the individual and almost all family problems need to be kept within the family (Ng, 2003).

The Malaysian government is beginning to change its focus from a punitive approach to these problems to giving more attention to social welfare and human service needs. At present, the Malaysian government has shown this commitment by adding more rehabilitation centres (Scorzelli, 2009), mental health campaigns to raise public awareness (Haque, 2005) and supplying more programs to strengthen the family (Stivens, 2006). Information has been disseminated in both print and electronic media to improve the public’s awareness and seek their commitment to help people in need and to assist their own family members (Crabtree & Chang, 2000). Additionally, extra commitment has been shown by adding more training for counsellors’ especially in universities (Haque, 2005).

Up to now however, the counselling courses have been taught without any evidence that Western counselling theories are universal and that cultural differences are unimportant. This could be particularly problematic for family counselling and the popular Bowen’s theory. The main tenet of Bowen’s theory is that the family as a system may be unstable unless each member of the family is well differentiated. Differentiation of self is defined as the ability to balance between: 1) emotional and intellectual influences in cognitive functioning and 2) intimacy and autonomy in relationships (Bowen, 1978). The level of differentiation is an intergenerational process in which individual and family functioning is similar across generations (Kerr & Bowen, 1988). However, more exposure to individual and family functioning does not explain the intergenerational process. The process occurs at an emotional level with levels of differentiation and patterns of functioning being transmitted from parents to children through the “family projection process” (Kerr & Bowen, 1988).

This paper is based on an ongoing study which examines the applicability of Bowen’s Family System Theory to the Malay population. The main research question for this study was to examine if the concepts of differentiation of self is a meaningful construct for the Malay population and if so whether is it intergenerational? Before this study could be commenced, a pilot study (labelled here as study 1) to measure the reliability of the translated instruments was conducted.
Study 1:

Method

Participants
Twenty-three Malay families living in Australia were approached to participate in the study. Participants were 23 parents (n= 10 mothers, 13 fathers; M= 48.87 years, SD= 8.81; range= 33-62 years) and 23 children (n= 13 males, 10 females; M= 15.83 years, SD=17.85; 11-17 years). Potential participants were identified from the Malay Student Association in Brisbane. One member of each family was a student from Malaysia who normally stays in Brisbane for 3 to 4 years to finish his or her postgraduate study. Families with children aged between 11-17 years who could read and understand the Malay language were recruited. All selected families completed the survey and post it back to the researcher within 2 weeks.

Measures
Differentiation of Self Inventory (DSI)

DSI is a self-report inventory (Skowron & Friedlander, 1998) which assesses differentiation of self amongst adults. This inventory is based on the Bowen Family Theory. The self report has 43-items and consists of four subscales. Emotional reactivity (ER), “I” position (IP), Emotional Cut-off (EC) and Fusion with other (FO). The 11 items in the ER subscale assess how a person responds to environmental stimuli with emotional flooding, emotional lability or hypersensitivity. The IP subscale contains 11 items that measure degrees of responsibility in taking an “I” position, ability to think and defined sense of self when pressured to do otherwise. The 12 items in EC reflect the feelings in the relationship, discomfort with intimacy, feeling excessively vulnerable, defensive over functioning and distance in close relationships. Finally the 9 items of the FO subscale reflect emotional overinvolvement with others including triangulation and overidentification with parents and significant others. ER and IP are the intrapsychic components and EC and FO are the interpersonal components.

Internal consistency reliability estimates in an adult sample of the DSI and its subscales are calculated using Cronbach’s Alpha ranged from .74 to.88 with the overall scale being .88 (Skowron & Friedlander, 1998). In the present study, the DSI and its subscales ranged from .46 to.76 with the overall scale being .85. This measure needed translating into Malay.

Depression Anxiety and Stress Scale (DASS)

The original version of DASS is a 42 item self-report measure of anxiety, depression and stress (Lovibond & Lovibond, 1995). A 4-point severity scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much) measures the extent to which each state has been experienced over the past week. DASS comprises 3 subscales with 14 items for each subscale, depression, anxiety and stress. DASS 21 is a shorter version of the DASS42. It is composed of 7 items taken from each of the 3 subscales of the original DASS. The DASS21 has already been translated into the Malay language (Musa, Fadzil, & Zain, 2007) with the translation process according to the guidelines stipulated by the US Bureau Guidelines. Two forward and two back translations were done by experts. The reliabilities, internal consistencies of BM DASS-21 were determined by looking at Cronbach’s alpha values. Overall scores were .91 which is comparable to the present study .91.

Family Inventory of Life Events (FILE)

FILE is designed to record usual and unusual stressors that a family encounters during a one year period (McCubbin & Patterson, 1987). The 71 items are grouped into nine life events categories which participants respond using dichotomous responses (yes or no) as to whether stressors were experienced within the past year or not. Overall internal consistency reliability score for the present study was .83 which is higher than .72 reported by McCubbin and Patterson (1987). This measure needed translation into Malay.

Connor-Davidson Resilience Scale (CD-RISC)

CD-RISC is a brief, self-rated measure of resilience (Connor & Davidson, 2003). It comprises 25 statements which are rated by respondents according to the extent which they agree with each item as it has applied to themselves over the past month. This scale measures the ability to cope with stress and adversity. Connor and Davidson (2003) report Cronbach’s alpha at .89 which is similar to the alpha values of .89 in the current study.
Demographic Questionnaire

The demographic questionnaire requested participants to indicate gender, age, marital status, parental status, educational level, number of children, occupation, income, and year of marriage.

Translation Process

Three measures; Differentiation of Self Inventory (DSI), Family Inventory of Life Events (FILE) and Connor-Davidson Resilience Scale (CD-RISC) needed to be translated into the Malay language. Each of these measurements was translated to Malay by the first author. These Malay translations were then back translated into English by the Head Department of Psychology and Counselling School in University Malaysia Terengganu.

Procedure

A packet containing two reply paid envelopes with the questionnaires, demographic sheet and cover letter was posted to each family. One envelope was for the parents and the other for their children. After completing the questionnaires, they posted them in the sealed envelope to the first author. Participants were asked to respond independently without any discussion with family members. Each family was identified through a unique code on each questionnaire sheet to ensure anonymity.

Results

Cronbach's alphas for the four scales ranged between .83 to .91. The Differentiation of Self Inventory (DSI) had a Cronbach alpha of .85, for the Depression Anxiety and Stress Scale (DASS) .91, for the Family Inventory of Life Events (FILE) .83 and .89 for the Connor-Davidson Resilience Scale (CD-RISC). Respondents had no further suggestions for clarification of the questionnaires. Even though the Cronbach’s alpha values were low for the Differentiation of Self Inventory (perhaps because of the small number of participants) all the measures were used in study 2.

Study 2:

All the translated measurements proved reliable and valid and so were used in the main study which involved three districts in Terengganu, Malaysia. All families were selected by their head of villagers and were chosen according to the population distribution. Nine hundred questionnaire booklets were distributed, only three hundred and fifty families willing to participate and completed the survey.

Participants

Nine hundred families were approached but only three hundred and fifty families consented giving a response rate of 38.9%. The families lived along coastal zone in Terengganu, one of the states in Malaysia. Participants were 350 parents (n= 247 fathers, 128 mothers; $M= 48.84, SD= 7.49; age range = 31-71 years) and 350 children (n= 150 males, 225 females; $M= 17.69, SD= 3.81; age range= 8-36 years).

Measures

All translated measures in study 1 were also used in study 2.

Procedure

Participants were identified through their head villagers (ketua kampung), from previous meetings before the data collection process. A packet containing two envelopes of questionnaires, the demographic sheet and cover letter were distributed to each family; one envelope for parents and the other for their children. Completed questionnaires were returned in the sealed envelopes to the head villager’s office.

Participants were asked to respond individually without any discussion with family members. Each family has been identified through a unique code number on each questionnaire sheet to ensure that participants will remain anonymous.

Results

Preliminary Analysis

The results of paired sample t-test between Malay sample and European American sample taken from Skowron (2004) on the Differentiation of Self Inventory (DSI) were compared with Skowron’s sample of European
American culturally different families living in the United States. There were no significant differences in levels of differentiation between these two samples; Malay sample ($M=3.56, SD=0.37$) and European American sample, $M=3.64, SD=0.52$; $t(809) = 1.17, p=.24$ (two tailed). There were no significant differences in level of differentiation of self between parents and children in the present sample; parents ($M=3.54, SD=0.58$) and children, $M=3.55, SD=0.59$; $t(748) = 0.27, p=.79$ (two tailed).

**Discussion**

As there was no difference on the Differentiation of Self Inventory (DSI) between parents and children then it can be tentatively concluded in this sample that differentiation of self is a meaningful construct for a Malay population as well as in United States. Transgenerational transmission was also confirmed by the fact that there were no significant differences between parents and children on the Differentiation of Self Inventory (DSI).

While this preliminary result confirms the assumption that counsellors in Malaysian universities should be taught Bowen’s Family System Theory, as there was significant difference in many subscales of the DSI, some modifications to reflect aspects of culture should be considered. Previous to this research, Bowen’s Family theory has been taught without any cultural consciousness even though Malay family life and values are very different from the United States. Bowen’s Family System theory it seems is applicable to the Malay population, but more stress on the important cultural differences still needs to be considered. These preliminary findings give some justification to continue to teach Bowen’s theory for family counselling interventions in Malaysian universities.

As this is an on-going study, further research will explore the influence of gender and socio-economic status in the process of differentiation of self among children and adolescence within this Malay family’s sample. This is to identify the appropriate consideration to apply Bowen’s theory in Malaysian settings.

**References**


Designing Teaching for Active Learning (DTAL) – Observations from the Joint Edinburgh Napier University and TAR College Staff Development Programme

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This paper is based on a joint staff development programme between Edinburgh Napier University, UK and TAR College designed to promote the use of active learning amongst staff and students at TAR College. The programme was inspired by a growing popularity of active learning in higher education worldwide and, specifically, by the need to facilitate the student experience for students from TARC preparing to study overseas.

Designing Teaching for Active Learning (DTAL) joint staff development programme was developed with and for staff at TAR College. Of specific interest is the involvement of local staff views in programme preparation in order to design a programme which addresses local needs and facilitates the dialogue with and benefits for the UK staff involved in the programme.

Active learning is discussed widely in the literature and this paper will first aim to briefly discuss active learning in the classroom and student and staff perceptions of the value of active learning. The rationale for the joint staff development programme, Designing Teaching for Active Learning, will then be presented together with the programme structure. The evaluation of the programme’s effectiveness based on the participants’ feedback and observations of mini lessons will follow. Finally, the paper will consider future development in introducing active learning strategies amongst staff and students in Malaysia.

Keywords: Active learning, staff development, staff and student perceptions

Introduction

Active Learning has received a lot of attention over the years, often seen as an alternative to traditional instruction and a tool to enhance greater student engagement. There are many definitions of Active Learning ranging from ‘anything that is more than passive learning’ (Jungst et al., 2003) to more specific ones such as ‘active learning requires students to engage in meaningful activities and think about what they are doing (Bonwell & Eison, 1991). It is the latter definition which will be used in this paper to refer to Active Learning.

Active Learning has got many associated elements. The core elements of Active Learning are student activity and engagement in the learning process. The instructional methods which help achieve these two elements and which will be discussed in this paper are: Student-centred Learning which sees students at the heart of learning (Boyer, 1990; Felder & Brent, 1996; McKeachie, 1999; Qualters, 2000); and Cooperative Learning in which students work together in small groups toward a common goal (Millis & Cottell, 1998).

Benefits of active learning

The benefits of Active Learning have been well documented particularly in the area of the effectiveness of active learning versus traditional teaching styles. McCarthy and Anderson report (2000) the results of two experiments that compared the effectiveness of role playing and collaborative activities to teacher-centred discussions and lectures in political science and history classrooms. They found that ‘in addition to being more engaging for the students, active learning techniques can sometimes more effectively impart information than traditional formats’ (McCarty & Anderson, 2000: 291). Bonwell and Eison (1991) summarise the literature on active learning and conclude that it leads to better student attitudes and improvements in students’ thinking and writing. One of the most consistent outcomes of studies into active learning has been a positive student attitude...
towards the subject and learning (Millis & Cottell, 1998). Other outcomes of the enquiry into active learning include higher academic achievement, increased comprehension, retention and development of higher level thinking skills (De Caprariis et al, 2001; Felder & Brent, 1996; Jungst et al, 2003).

Furthermore, proposals have been put forward with regards to introducing active learning in the classroom. Much of this work is devoted to introducing active learning in traditional lectures, including modifications such as pauses during a lecture to allow students to consolidate notes (Penner, 1984; Ruhl, Hughes & Shloss, 1987). Active learning does not negate the need for lectures, but provides opportunities for students to reflect, evaluate, analyse, synthesise and communicate on or about the information presented (Fink, 2003).

**Concerns about the application of active techniques**

Despite many benefits of active learning documented in the literature, there have been also calls for caution while introducing active learning due to the associated challenges. Designing and testing active learning activities can be a new and time consuming task with unknown outcomes. Introducing active learning in the classroom can present challenges such as a loss of classroom control, issues with evaluating student participation and effectiveness of the activities and students lacking prerequisite skills for working in teams (Cooper, 1995; Lord, 2001).

Some of the concerns stem from the paradigm shift of teacher-centred to student-centred learning, an instructional method helping to achieve active learning. ‘With the shift comes a change in the roles of authority from the teacher as knowledge giver to knowledge as created in the social context’ (Machemer & Crawford, 2007: 12). Modell (1996) draws further on this challenge for staff and students to have to revise their respective traditional roles in the classroom. He argues this process must be facilitated for staff by relevant staff development activities and for students by introducing exercises helping them to form appropriate course expectations, recognise the need for seeking clarification when communicating and become familiar with study supports. The introduction of active learning places responsibility for learning on the student, therefore managing students’ expectations about active learning can be a challenge. Students can resent cooperative learning techniques (Phipps et al, 2001). This can be caused by problems with contributing to the team, new skill development and conducting group work being perceived as less effective than memorising facts.

Other studies found that students had an overall positive attitude towards active learning, especially when they understood why the active techniques were being used. Machemer and Crawford (2007) built on these studies but examined students’ perceived value of a variety of learning activities within a course of study, not just active learning or just traditional teaching. The activities in Machemer and Crawford’s (2007) study ranged from the traditional, teacher-centred to active and cooperative learning. The variety of methods involved is represented against the constant of the syllabus, topic, instructor and the students (Figure 1).

**Figure 1: Study framework**

![Figure 1: Study framework](adapted-from-machemer-and-crawford-2007-13)
The results of the study revealed that students valued the traditional lecture component of the classroom equally well with the active learning projects. “Cooperative learning, i.e. learning in teams, was valued by the students lowest. They enjoyed being active, but did not want to be responsible to the group for learning” (Machamer & Crawford, 2007: 24). In conclusion, the students liked a range of teaching activities, not one or another and, although they valued active learning, they did not mind traditional learning as long as it helps to prepare them for assessments.

Rationale and guiding principles of a joint staff development programme DTAL

The literature about the value of active learning and the challenges involved in introducing it in the faculty underpinned the development of a new joint staff development programme between TAR College (TARC) and Edinburgh Napier University, who are partners. TARC identified the need to introduce active learning in their classrooms in order to foster new, innovative ways of working with the students as well as to prepare students for the learning and teaching environment they are likely to experience when they continue their studies overseas.

The idea was to develop a programme which would meet the local needs but which would also introduce active learning techniques as hands on activities ready to be used by the tutors. This was addressed by a series of discussions with the faculty and a pre-course questionnaire given to all participants. The pre-course questionnaire had two parts. Part one was concerned with the participants’ current teaching practice. Part two dealt with their expectations, including what they would like to get from the programme.

Twenty eight tutors from the Business Faculty at TARC were selected to participate in the DTAL programme. They completed a pre-course questionnaire. The needs analysis of the TARC tutors’ responses indicated that the teachers would welcome new ways of engaging students in learning and developing students’ independent and thinking skills but that this would have to fit within their current teaching context.

The outcomes of the pre-course questionnaire helped to establish joint principles guiding the programme’s design and delivery as follows:

- Active learning is beneficial but a variety of methods is appreciated by students and staff, therefore the programme will not exclude current teaching and learning methods but built on them and introduce active learning alongside current teaching and learning.

- Active learning is only effective if it helps students to achieve their learning outcomes, therefore the principles of active learning need to be adapted to the local learning and teaching context and act as aids to enhance it.

- The introduction of active learning in the classroom should be handled with great care and as a gradual change of beliefs, expectations, behaviours and roles of students and tutors. Therefore, the programme’s outcomes will be expected to take time to embed.

- The programme will be an opportunity to open a dialogue between TARC and Edinburgh Napier University staff to share good practice in learning and teaching and to work out joint practices of learning techniques which enhance student experience.

Structure of DTAL programme

Based on the tutors’ needs analysis and the guiding principles, a three day staff development programme was designed. The programme was called Designing Teaching for Active Learning (DTAL). It was a stand-alone event but with a view to extend it as an ongoing programme of staff development if the feedback is positive.

DTAL aimed to explore the meaning and the value of active learning and its use in a classroom. It was discussion driven and focused on the concepts underpinning active learning in class and on practical, hands-on ideas to promote active learning and motivate learners.

Specific objectives of the DTAL programme were:

- To consider the value of active learning versus traditional methods
- To plan and deliver teaching which promotes student engagement
- To adapt a range of new tools and techniques for the participants’ teaching context
- To design and use teaching materials for active learning.

DTAL took place in October 2009. It included 6 units (3 in the mornings and 3 in the afternoons). Morning sessions focused on new concepts and reflection on current teaching and learning, while afternoon sessions concentrated on trying out new ideas from the morning session and adapting them to the participants’ own context.

The afternoon sessions were carried out in groups. All groups were given a task. In day 2 and 3, the task involved designing and delivering a short teaching session (mini lesson) which would use new tools / techniques / tasks discussed in the morning. All teaching sessions were observed by the facilitator. The teaching sessions were followed by feedback and time to reflect on the task and its use in participants’ teaching context.

Specifically the structure of the programme was as follows:

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<thead>
<tr>
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<th>Day 1</th>
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<td>Icebreaker</td>
<td>Warm up</td>
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<td>Unit 1: The use of active learning in the classroom</td>
<td>Unit 3: Planning and delivering teaching for student engagement</td>
<td>Unit 5: Designing teaching materials for active learning</td>
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<td>- Key concepts</td>
<td>- Needs analysis</td>
<td>- Reflections from Unit 3 and Unit 4 activities</td>
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<td>- Active learning vs traditional methods</td>
<td>- Patterns of interaction</td>
<td>- Designing materials – key steps</td>
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<td>- Use in the classroom</td>
<td>- Tools for active learning:</td>
<td>- Planning use of materials in class,</td>
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<td>- Roles of students and teachers</td>
<td>group learning, peer</td>
<td>interaction, outcomes</td>
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<td>- Expectations</td>
<td>teaching, simulations, role</td>
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<td>Reflection</td>
<td>plays, student projects.</td>
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<td>Unit 2: Including active learning in our teaching context</td>
<td>Unit 4: Planning teaching and trying out new tools</td>
<td>Unit 6: Using teaching to activate learning</td>
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<td></td>
<td>Task 1 Sample activity discussion</td>
<td>Task 2: Plan an activity which includes aspects of active learning</td>
<td>Task 3: Planning and delivering a short activity</td>
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<td>Preparing for day 2 and 3 (altogether)</td>
<td>Discussion / reflection</td>
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<td>Reflection and feedback</td>
<td>Reflection and feedback</td>
<td>Reflection on the activity</td>
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**Evaluation of DTAL**

The programme was carefully planned over a period of six months which helped to ensure it was meeting the local requirements. It included introducing active learning techniques and considering their use in the participants’ local context. The programme was practical in nature hence the structure included only some input on the theories of active learning and teaching, with the majority of time spent on reflections on the current teaching practice, trying out new techniques and considering their use in the local context.

DTAL included a selection of examples from Edinburgh Napier University’s learning and teaching context and TARC which opened up a dialogue between the facilitator and the participants about a range of approaches and methods. The dialogue continued after the programme with participants sending in their comments and stories to the facilitator. One of the participants and the facilitator are now involved in a joint, pedagogic research which is one of the positive outcomes of the programme.

The evaluation of DTAL programme was based on the participants’ feedback and the observations of mini lessons delivered by the participants. Participants’ feedback was sought after the programme in order to evaluate its effectiveness and to guide future development. All 28 participants completed a questionnaire which asked about the general evaluation of and learning from the programme, applicability to the participants’ teaching
context, evaluation of the programme content, method of delivery, benefits of the programme and suggestions on how to improve the programme. 39% of the participants thought the programme was excellent, 57% good and 4% thought it was satisfactory. 61% of participants were very happy with applying the programme to their workplace, 32% were happy and 7% were satisfied that it would apply in their workplace. All participants were very happy with the programme content but 21% thought the programme needs to be shorter due to work commitments.

Below are selected comments from the participants:

Programme content: ‘DTAL shows how to enrich the teaching in lecture and tutorial with various activities and materials. Some of the activities and materials are very practical and can be applied into the lesson planning immediately’, ‘Good mixture of theory and practical, reflective parts for participants to digest and assimilate’.

Benefits from the programme: ‘This programme improved my use of hands-on applications for teaching. It reinforces the view that practical style learning enhances students’ comprehension’, ‘Learned new things that could be applied to teaching and learning. Reaffirmed that current practice can work and can be tweaked to incorporate improvement’.

The main thing that the participants would do as a consequence of the programme: ‘Incorporate some of the activities into my teaching from now on’, ‘Try to use the new techniques, one at a time, over a period, in my lecture and tutorials’, ‘Focus more on students LEARNING than on teaching and ensuring more variety in class’, ‘Increase students talking time (STT) and reduce teacher taking time (TTT)’, ‘Try to start each class with a warm up activity and introduce more team work’.

Suggestions for the development of the programme: ‘To have a follow up session to evaluate new techniques we applied’, ‘To include observation of class(es) taught by the facilitator’, ‘Include participants from other subject groups to enable more interaction across the College’, ‘Include more time for discussion, question and answer sessions, reflection’.

The observations of the mini lessons provided additional evidence about the participants’ learning from the programme. The participants worked in groups during the afternoon sessions, as explained in the above section ‘Structure of DTAL programme’. Each group was given an identical task of using the ideas and concepts from the programme to design and deliver a short teaching activity (mini lesson) with the students. The participants were given sufficient time to work out the mini lesson. The teaching delivered to volunteer selected students which came from a mixture of subjects. The mini class was not subject specific as the aim was to try out a technique or a skill to engage students in active learning.

Despite initial worries and fears of ‘losing face’, all participants got very involved in preparing the task. Everyone in the group participated in designing and preparing the mini class. As the groups were quite large, some participants delivered the actual teaching activity and some observed. After each mini lesson, the facilitator met with the group to discuss the outcomes. Afterwards all groups met together to compare their experiences and agree the key learning points from the exercise.

It was evident that all participants were very enthusiastic about trying some of the active learning techniques. They were very successful in engaging the students in the mini lesson, with a variety of activities aimed to involve students in learning. The students were very enthusiastic about the activities as well. The participants were inspired by the students’ response to the new techniques and enthusiastic about trying them in their teaching. The key learning point agreed amongst the participants was that a slow, trial and error approach would work well to use the ideas from DTAL as many activities were new to the participants and the students in the College.

Observations from DTAL

The programme was a new staff development initiative. Based on preliminary findings, it can be said that DTAL was a positive event. It was a joint project between two partner institutions, sharing the same interests and looking for joint ways of enhancing learning and teaching. The programme was attended by twenty eight tutors at one Faculty but the results of the programme are far fetching. The participants will act as ambassadors of the new techniques, which will hopefully be carried further by other tutors and by students they come in contact with. For Edinburgh Napier University staff, the involvement in the design and delivery of the programme has helped to understand and share the local learning and teaching context. It has also helped to establish a dialogue.
between the tutors at TARC and at Edinburgh Napier which can lead to further sharing of good practice in learning and teaching and joint projects.

Overall, owing to the commitment and hard work of all who supported and participated in the programme, DTAL was a great success. Initially most of the participants were a bit anxious about the contents and what would be involved in the practical teaching sessions. It was very rewarding to see the enthusiasm of the participants and their new perspective on some of the techniques and activities of DTAL.

**Future developments**

DTAL programme was a successful event but the main challenge now lies in the extent to which it will impact learning and teaching approaches and benefit students and staff in both partner institutions. A follow up event is planned to take place in 2010 to enable the participants to reflect on what worked and what needs further adjustments. It would be an opportunity for all to meet again and, having tried to apply some of DTAL activities, discuss ways forward on further development of learning and teaching.

The feedback from the programme showed that there is a need to observe each other’s classes and for further, hands-on work together to develop teaching. It is hoped that more joint teaching and observations of classes will be possible either as direct observations or as video recordings and video conferencing for students and staff.

Taking care of students’ expectations is an important part of introducing new, active learning techniques in the classroom (Modell, 1996). Further work needs to be done with the students in order to help them adjust their expectations and their roles in the classroom. This can be addressed as workshops and joint project work with students at Edinburgh Napier.

Finally, DTAL is a generic staff development programme which can be used anywhere as part of a wider staff development initiative or a stand-alone event. Feedback has shown that it does make a difference to introduce and consider new learning and teaching techniques which promote active learning in the classroom. DTAL is also tailored to work with the local context, to let the tutors take time to consider their current teaching practice and how it can be adjusted. There is a great potential for DTAL to be further developed to include student and staff interaction to enhance partnerships and joint learning and teaching approaches.

**References**


Mission Possible: Widening Access to Quality Distance Teacher Education Through a Win-Win Collaboration Between Open University Malaysia and the Teacher Education Division of Malaysia

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Like all countries in the world, Malaysia takes pride in her relentless efforts at improving her educational system. One such step taken by the Ministry of Education of Malaysia is the development and implementation of the National Education Blueprint (2006 – 2010). One of the five strategic thrusts in the blueprint is to improve the teaching profession and one of the ways that were identified was to encourage serving teachers to pursue degree courses. The target is for secondary school teachers to have at least a basic degree and some fifty percent of primary school teachers to be graduates by the year 2010 (Salleh Hassan, 2006). This paper describes the win-win partnership between Open University Malaysia (OUM) and the Teacher Education Division of Malaysia in offering the Bachelor of Teaching programme via distance education to a total of 16,427 in-service primary school teachers from all over Malaysia. It also reports the findings obtained from an evaluation of the quality of the programme offered, that was carried out in 2009 to ascertain OUM’s success in achieving its mission of widening access to quality education and providing a conducive and engaging learning while leveraging on technology and adopting a flexible mode of learning. Since OUM employs a blended learning approach, four major components of the programme were evaluated namely teaching and learning process in face-to-face tutorials as well assessments, online learning using the learning management system and the self-managed learning aspect using customized modules.

Keywords: Distance teacher education, Collaboration, Blended learning, Programme evaluation

Introduction

It is widely recognized that education is the corner stone of all nation building efforts. The fact remains that the quality of education in a country depends very much on the quality of its educational system and like all countries in the world, Malaysia takes pride in her relentless efforts at improving her educational system. One such step taken by the Ministry of Education of Malaysia is the development and implementation of the National Education Blueprint (2006 – 2010). One of the five strategic thrusts in the blueprint is to improve the teaching profession and one of the ways that were identified was to encourage serving teachers to pursue degree
courses. The target is for secondary school teachers to have at least a basic degree and some fifty percent of primary school teachers to be graduates by the year 2010 (Salleh Hassan, 2006).

**Background of the Bachelor of Teaching Programme**

The Bachelor of Teaching programme via distance education is a collaborative endeavour between the Teacher Education Division of Malaysia (TEDM) and Open University Malaysia (OUM). Initiated in 2002, TEDM acts as the secretariat for this project, it identifies the types of course for which training is required and selects the in-service teachers who qualify to be students while OUM provides the curriculum, resources and distance learning technological expertise. Regular programme monitoring is conducted by both parties to ensure smooth implementation of the programme as well as for quality assurance.

The main objectives of this programme are to

1. Help meet the required number of graduate teachers in Malaysian schools;
2. Act as a special career pathway for non-graduate teachers to upgrade their professional qualifications; and
3. Produce teachers who are well-equipped with up-to-date professional knowledge and skills in teaching.

True to her mission of widening access to quality education and providing lifelong learning opportunities by leveraging on technology, adopting a flexible mode of learning and providing a conducive and engaging learning environment of competitive and affordable cost, OUM offered the students of this programme, a blended mode of pedagogies which comprised self-managed learning using modules, online discussions using OUM’s learning management system (LMS) as well as fortnightly face-to-face tutorials (Refer to Figure 1). Tutors engaged include lecturers from teacher training institute and local universities. Assessment is in the form of end-of-year examinations, quizzes, assignments and online participation in discussion forums. The students are exempted from teaching practice since they have been trained as teachers albeit at a diploma or certificate level. In its place, students have to complete a School-based study.

The programme which is conducted across the nation has to date, an estimated enrolment of 15,578 teachers for the Bachelor of Teaching (Primary Education) programme, and another 849 in the Bachelor of Teaching (Pre-school Education) programme. The first batch of 3,200 for both programmes graduated in September 2009.

**Collaboration in teacher training - A win-win situation**

The collaboration between the TEDM and OUM using distance learning for teacher training may be considered a most practical and pedagogically sound move in stepping up efforts to upgrade the qualifications of in-service teachers in Malaysia. Daniel and Menon (2005) emphasized that in countries where there is a massive need to train teachers, it is clear that “conventional methods of teacher education can neither scale up to meet the numerical challenge nor supply the consistency of training necessary to ensure quality” (p.2). They strongly believed that with ODL which provides “opportunities for learning that are flexible and relatively free of constraints on the time and place of study”, the problem of training a significant numbers of teachers in a relatively short duration of time becomes less critical. Daniel (2005) suggested that ODL is revolutionary because unprecedentedly in education, through “division of labour, specialisation and economies of scale”, it enables education providers to “increase access, improve quality and cut costs, all at the same time”.

According to Adakole and Okonkwo (2008), effective collaboration between ODL institutions and their conventional face-to-face counterparts includes areas such as content development, assessment, capacity building and sharing of facilities and resources. Further, it has been noted that benefits that may be derived from such collaboration include:

1. Promotion of true life-long learning,
2. Exchange of academic ideas, materials and expertise,
3. Efficient use of physical infrastructure of the conventional institutions, and
4. Increased access to quality higher education.

As for the case of the special TEDM-OUM collaboration, the partnership has resulted in a win-win situation for the stakeholders. Firstly, OUM teachers can continue to serve at their respective schools while pursuing the programme. This means that schools are not adversely affected as the Education Ministry need not appoint relief teachers to replace those going for further studies at OUM. Ultimately, this makes it possible for a larger number of teachers to pursue higher education. Secondly, the employment of a good number of lecturers from various Teacher Training Institutes located throughout the country as OUM part-time tutors can be seen as a
form of capacity building for these institutes. Thirdly, the Teacher Training Institutes also derive tangible benefits from OUM in terms of upgrading of computer labs and teaching equipment. OUM’s 56 learning centres throughout the country include 27 premises rented out from Teacher Training Institutes during the weekend. In lieu of rent, OUM has done some upgrading of the classrooms and equipped them with computers and LCD projectors.

Quality in Distance Teacher Education

The ODL Quality Council of United Kingdom (2009) underscored the importance of delivering distance education courses that are of good quality. According to the Council, “Quality means that the learner can learn successfully from the opportunities on offer” and that “materials, advice and support must all be relevant, reliable and consistent”. In comparison with conventional teacher training, for optimal learning to occur, distance learning institutions need to facilitate their learners to assume greater responsibility for their own learning and help them deal with technical difficulties (AACSB, 2007). Additionally, Daniel (2005) suggested that distance learning lends to a more learner-centred approach in that there exists opportunities for greater interaction between learners and resource materials as well as between learners and tutors/lecturers.

AACSB International (2007) listed several crucial components that need to be looked into when evaluating the quality of distance learning. This includes:

1. Student-faculty interaction
2. Student-student interaction,
3. Technology use
4. Assessment, and
5. Instructional resource.

Meanwhile, Perraton, Creed and Robinson (2002) stressed that a key success factor to learning at a distance is the appropriate use of technologies both in distributing resources and in providing communication channels for learners and their educators. The effective utilization of technologies that reduce the transactional distance of space, time and psychology of learning would certainly help enhance learning for distance learners. In the case of OUM’s distance teacher education programmes, OUM’s very own learning management system (LMS) contains several features that have been included to help students in their learning namely “Announcements”, “Assessment”, “Forum discussions”, as well as course resources such as tutorial powerpoints and soft copies of all chapters of the printed modules. Access to OUM’s comprehensive Digital Library is also available online.

Methodology

Instrumentation

Feedback from students regarding the quality of the distance teacher education programme they were pursuing was obtained using the survey method. A quantitative approach was used and descriptive statistics (frequency and percentage) were utilized.

A questionnaire printed on OMR sheets was used to collect data. The overall reliability coefficient (Cronbach’s alpha) of the whole instrument was found to be .96. The reliability coefficients for the various sections in the questionnaire are as follows: .96 for Teaching & learning, .90 for Assessment, .94 for Module and .92 for LMS.

Response format for items in each section was the level of agreement on a five-point Likert type scale: 5 for Strongly Agree, 4 for Agree, 3 for Neutral, 2 for Disagree and 1 for Strongly Disagree. Percentage agreement was calculated based on the total percentage obtained for Strongly agree and Agree. Meanwhile, responses offered for items on overall rating for each section were Very good, Good, Average, Poor and Very poor.

Sampling and sample

The total number of students at the time the evaluation was conducted during the May 2009 semester was 11044. The sample for this study was obtained using the stratified random sampling technique according to six geographical zones in Malaysia:

a) North – Perlis, Kedah, Penang and Perak,
b) Central – Klang Valley,
c) South – Negeri Sembilan, Melaka and Johor,
d) East – Kelantan, Terengganu and Pahang,
Data collection

The questionnaires were sent to the various learning centre administrators by courier. The administrators were required to administer the instrument either during Tutorial 3 or Tutorial 4. Completed questionnaires were then sent back to the Institute of Quality, Research and Innovation of Open University Malaysia (OUM) by courier for data entry and analysis.

Findings

Background of respondents

There were 447 female respondents corresponding to 73.8 percent and 159 male respondents (25.2%). Analysis by race showed that Malay/ Bumiputera respondents was the majority with 400 respondents (69.9%) followed by Chinese, 94 respondents corresponding to 16.4 percent. There were 62 Indian respondents (10.8%) and 16 respondents (2.8%) were from other races.

Overall rating for the different components of instruction

From Figure 1, it may be seen that of the four components that were evaluated, the respondents seem most satisfied with the quality of the teaching and learning process. A total of 87.9 percent were satisfied (72.8% rated the quality as Good while 15.1% rated it as Very good). 12.1 percent were of the opinion that the programme was of average quality. None of the respondents in the sample had a negative perception of the quality of teaching and learning. This was followed by the quality of LMS where 64.2 percent of respondents found the LMS application was Good and 10.5 percent of them rated it Very good. 21.7 percent of respondents found the application was average and 3.5 percent seemed dissatisfied with the quality of the LMS application (0.5% rated the LMS ‘Very poor’ and 3.2% ‘Poor’).

With regards to the quality of Assessment, the majority of the respondents were satisfied; 62.2 percent thought that the quality was Good while 9.4 percent agreed that it was Very good. Meanwhile, 26.7 percent of them rated it as average. In comparison, only 1.7 percent of them appeared to be dissatisfied with OUM’s assessment when they rated it ‘Poor’ (1.5%) and ‘Very poor’(0.2%).

As for the quality of modules, 66.0 percent of the respondents in this study rated the quality of modules as Very good (59.2%) and Good (6.8%). 29.7 percent rated OUM’s modules as average and only 4.3 percent of respondents were found to be dissatisfied when they ranked the modules ‘Poor’ (4.1%) and ‘Very poor’(0.2%).

Quality of teaching and learning

Respondents were asked to give feedback to 16 items related to the quality of teaching. Of the 16 items, 10 items had a percentage agreement of more than 80 percent.

It was found that the total percentage agreement on ‘Tutors were friendly’ was the highest at 90.9 percent (32.6% strongly agree and 58.3% agree). The next highest total percentage agreement was 86.4 percent for two
items namely ‘Tutors provided useful feedback on assignments’ (26.3% strongly agree and 60.1% agree) and ‘Tutors encouraged learners to express themselves’ (22.4% strongly agree and 64.0% agree).

85.7 percent of the respondents agreed that tutors made learners felt welcome in seeking help (26.1% strongly agree and 59.6% agree). Next in rank was that tutors showed genuine interest in learners at 85.4 percent (22.9% strongly agree and 62.5% agree). Meanwhile, 83.5 percent of the respondents were satisfied that the concepts were clearly explained by tutors (23.3% strongly agree and 60.2% agree). 83.2 percent of the respondents perceived that their tutors gave meaningful answers to the questions asked (24.3% strongly agree and 58.9% agree). Meanwhile, 82.2 percent of the respondents agreed that tutors taught according to objectives (22.9% strongly agree and 59.3% agree). In addition, the students who were sampled agreed that tutors were ‘Dynamic’ at 81.1 percent (13.1% strongly agree and 68.0% agree) followed by ‘Enthusiastic’ at 80 percent (13.2% strongly agree and 63.8% agree).

Four items regarding quality of learning were asked to gain feedback from the respondents. It was found that 89.4 percent of the respondents agreed that they learnt something valuable with 25.4 percent for strongly agree and 64.0 percent for agree. The next highest percentage is 85.5 percent where respondents indicated that their interest in subject increased (26.1% strongly agree and 59.4% agree). Meanwhile, 81.2 percent of the respondents agreed that tutorials and seminars were intellectually stimulating (16.0% strongly agree and 62.5% agree) while 79.8 percent of the respondents claimed they understood the subject taught (21.6% strongly agree and 58.2% agree).

Quality of assessment

With regards to quality of assessment, respondents were asked to give feedback on seven items on assignments and examinations. Findings indicated that the highest total percentage agreement of 82.4 percent was obtained for ‘Assignments were challenging’ (26.5% strongly agree, 55.9% agree). The item on ‘Helped understand concepts better’ was found to be the second highest percentage at 81.4 percent (22.4% strongly agree, 59.0% agree). Meanwhile, 73.5 percent of respondents claimed that they understood what was expected for the assignments (14.6% strongly agree, 58.9% agree).

Quality of modules

It was found that 72 percent of the respondents understood the subject better (11.1% strongly agree and 60.9% agree). 71.2 percent were of the opinion that the topics in the modules were adequately covered (10.7% strongly agree and 60.5% agree). Next, findings indicated that 70.1 percent of respondents agreed that the activities in the modules helped them to achieve course objectives (14.3% strongly agree and 55.8% agree).

Quality of LMS

Respondents were asked to give feedback on five items related to accessibility and content of myLMS (OUM’s Learning Management System). Findings indicate that three of the items had percentage agreement of above 70 percent. The total percentage agreement for the item ‘Accessing was easy’ was found to be the highest at 76.2 percent (21.0% strongly agree and 55.2% agree). Next, 75.9 percent of the respondents agreed that contents available in myLMS were well organized (18.6% strongly agree, 57.3% agree). Besides, findings indicated that 74.7 percent of respondents agreed that asynchronous forum discussions conducted in the LMS were useful (24.3% strongly agree, 50.4% agree).

Respondents were also asked to give feedback to three items regarding the quality of interaction in myLMS. 76.4 percent of respondents agreed that the communication between learner and learner was good (19.8% strongly agree, 56.6% agree). This was followed by ‘Leaner-tutor interaction using myLMS was good’ at 72.2 percent (19.5% strongly agree, 52.7% agree). The least percentage was obtained for ‘myLMS was easy to navigate’ at 70.5 percent (17.0% strongly agree, 53.5% agree).

Feedback was also obtained regarding the usefulness of the same five features of myLMS: Announcement, Course Material, Examination Paper, Forum and Self Assessment. It was found that Forum discussion obtained the highest total percentage agreement at 91.6 percent (36.9% very useful and 54.7% useful). This was followed by Examination Paper at 79.1 percent (28.6% very useful and 50.5% useful). (Refer to Figure 3).

88.2 percent of the respondents agreed that the Announcements in LMS were useful (22.7% very useful, 65.5% useful). Next, 78.6 percent of the respondents found that course material found in myLMS were beneficial
(20.3% found them very useful and 58.3% agreed they were useful. Self assessment was found to have garnered the least percentage for usefulness as only 19.1 percent of the respondents agreed that it is very useful and 54.3 percent of them rated as useful.

![Figure 2: Perception of Usefulness of LMS Features](image)

**Overall rating for quality of whole programme**

Overall, 79.7 percent of the respondents were satisfied with the quality of the whole programme where 67 percent rated it as ‘Good’ and 12.7 ‘Very good’. 19.9 percent of them rated it as average and only 0.4 percent of the total respondents were found to be dissatisfied.

**Discussion and conclusion**

Findings obtained through this evaluation of the Bachelor of Teaching Programme indicate that distance teacher education is certainly a viable solution that may be used to upgrade the qualification of in-service teachers. The in-service teachers themselves seem to be happy with the quality of the programme, particularly the effectiveness of the teaching and learning process. The assessment that was carried out was also considered to be of much help to the in-service teachers in gaining the required knowledge and skills. Further, OUM’s well-established learning management system appeared to have been rated relatively well in terms of ease of access, content and quality of interaction. Likewise, the quality of modules according to the in-service teachers was fairly satisfactory in terms of content coverage and helping students achieve learning outcomes. In view of the fact the respondents in this study were satisfied with all three core components of the blended learning approach used, namely face-to-face tutorials, self-managed learning using modules and online interaction using the LMS, it may be said that such an approach appears to be well-received and very much accepted by in-service teachers who wish to participate in continuous professional development.

The collaboration between TDEM and OUM is surely the way forward in training high numbers of in-service teachers. The remarkable co-ordination and efficient administration by TDEM coupled with the experience and expertise offered by OUM is definitely a winning partnership that ought to be continued and strengthened. This augurs well for the future of distance teacher education in Malaysia as it is inevitable that the demand for higher education for teachers will continue to increase tremendously in the years to come. As Daniel, Kanwar, Uvalic-Trumbic, and Varoglu (2005) stressed, “traditional face-to-face education will not be able to cope with this demand, and therefore expanding distance education will be essential”.

Currently policy makers have very little critical information on which to make informed decisions about distance teacher education. It is hoped that findings from this evaluation will help stakeholders and decision makers to be better informed about the advantages of collaboration in distance teacher education.

**References**

Acknowledgment
The authors would like to record their appreciation to Norziati Mansor and Norazniza Ismail for their help in this study.
Involvement in Academic Quality Applications as a Means of Faculty Development

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This research assesses the faculty involvement in the applications of academic quality at Al-Majma’ah Community College of King Saud University, with the intention to achieve three objectives. (1) To evaluate the degree of faculty involvement in the QA activities in the College. (2) To find out if the educational challenges brought with QA could help improve the faculty performance. (3) To publicize the QA culture in the College and King Saud University at large. Alongside these objectives, the study attempts to find answers to the following questions: (1) Is there any relationship between faculty specialty and his interaction with the QA applications? (2) Is there any difference in the degree of involvement in different types of QA application? (3) To what extent does QA culture help improve faculty professionally? To give answers to the research questions, the study assumes the following: (1) There is no relationship between faculty specialty and his involvement in QA activities. (2) There is a significant difference between the faculty involvement in the syllabus activities and the self-development activities (3) QA applications enhance faculty participation in capacity-building programs to improve their overall performance. A self-assessment questionnaire was developed and refereed to collect data for the study. The statistical analysis of the data confirmed the three assumptions.

Keywords: Quality assurance, course specification, accreditation, professional development, quality culture

Introduction

The term “quality assurance” (henceforth QA) is a recent addition to the academia. Originally, it was associated with business, focusing on the excellence of products and services in order to satisfy the customer. Currently, most academic institutions worldwide are applying QA principles to all aspects of their academic and non-academic activities in order to obtain academic accreditation. Thus, in response to the policies adopted by King Saud University (Kingdom of Saudi Arabia) to achieve academic excellence, and, therefore, academic accreditation, the years 2008/2009 and 2009/2010 witnessed ceaseless efforts made by Al-Majma’ah Community College to enhance its academic environment so that it eventually obtains academic accreditation. Despite the short QA history in the College, it has become the subject-matter of a series of informative, evaluative and critical research. Al-Dahsh and Bedir (2009) conducted leading qualitative studies on total quality management, informing of the activities and steps taken in order to achieve academic accreditation in the College. In that connection, the present study sets out to address the involvement of the College faculty in the QA applications with intention to realize the following objectives: (1) To evaluate the degree of faculty involvement in the QA activities in the College. (2) To find out if the educational challenges brought with QA could help improve the faculty performance. (3) To publicize the QA culture in the College and King Saud University at large. Alongside these objectives, the study attempts to find answers to the following questions: (1) Is there any relationship between faculty specialty and his interaction with the QA applications? (2) Is there
any difference in the degree of involvement in different types of QA application? (3) To what extent does QA culture help improve faculty professionally? In the search for answers to the research questions, the study assumes the following: (1) There is no relationship between faculty specialty and his involvement in QA activities. (2) There is a significant difference between the faculty involvement in the syllabus activities and the self-development activities (3) QA applications enhance faculty participation in capacity-building programs to improve faculty overall performance.

1. QA in the Academia

It is convenient at the beginning of this section to report the defining features of the concept of ‘quality’ before proceeding to discuss its applications in the academia. To begin with, the relevant literature does not seem to agree on a definition of the term (for most articles on ‘quality’ renders it hard to define) to the extent that Mishra (2007:11) has been made to conceive of it as ‘beauty that lies in the eye of the beholder’. This ‘relativist’ approach, Mishra contends, contrasts with another ‘objectivist’ approach that views ‘quality’ as ‘specific attributes that can be identified’. SAUVAC (2002), as quoted in Materu (2007: 1), reports a comprehensive picture of the ways theorists approach ‘quality’; viz. in different contexts it is considered a ‘measure of excellence’, ‘perfection’, ‘value of money’, ‘customer satisfaction’, ‘fitness for a purpose’ ‘zero defect’ and ‘transformation’. Apparently, this pluralist definition of quality is traceable to W.E. Deming, Joseph Juran and Philip Crosby who are widely reported to be the founding fathers of ‘quality movement’ (Mishra 2007: 18); they are consecutively credited with ‘14 points’ of management guidelines, ’10 steps of quality improvement steps’ and ’14 steps’ of quality management (ibid). Therefore, it is not uncommon that researchers nowadays are divided as to what constitutes quality owing to its kaleidoscopic origin. A further consequence of this multifaceted origin of quality is reflected in the accreditation systems in that in different parts of the world, and even in the same country, different conditions are required to accredit different institutions. Indeed, since institutions differ in type and function, it is natural that they be required to meet different types of conditions to get accredited.

Turning to academic QA, research shows that the need for it emanates from a number of institutional, national and international concerns. Petersen (1991:1) points out that the rationale for introducing QA into higher education is given impetus by ‘the recent expansion in higher education worldwide’; thus, QA bodies are needed to ensure that academic standards are considered to the degree that ‘provision fulfils the expectations or measures up to the threshold minimum requirement’ (Kristofferson, 2007). Other such rationale for introducing QA into the academia is put forward by the European ‘Report on progress in quality assurance in higher education’, maintaining that ‘with globalization, economic integration and increased academic and professional mobility, there is a growing need for the recognition for qualifications outside the country which awards them’.

In the light of the views concerning the applications of academic quality, it is legitimate to ask: What are the practical steps taken in incorporating the quality culture into higher education activities? One such answer to this question comes from Mishra (2007:20). He points out that QA movement has resulted in eight implications for higher education:

1. Leadership and commitment of top management plays a significant role in quality improvement.
2. Creating an environment for learning and staff development is crucial to do tasks right every time.
3. Adopt new philosophies and technologies that can improve quality.
4. Encourage teamwork and participatory management.
5. Develop a communication strategy to report progress and results.
6. Recognize the efforts of staff without creating competitive environment.
7. Put appropriate systems and processes in place as per needs for the stakeholders.
8. Encourage quality circles and a culture of quality.

Apparently, these implications are but general guidelines that need to undergo operationalisation in order to provide a definite procedure for improving educational quality. A more specific model for ensuring QA in higher education is proposed by Owlia and Aspinwall (1996), as quoted in Usoro Abid (2007:2). This model consists of six dimensions of QA in higher education as illustrated in table (1) below:
### No | Dimensions | Characteristics
--- | --- | ---
1 | Tangibles | Sufficient equipment/facilities, modern equipment, ease of access, visually appealing environment, support devices (accommodation, spots, …)
2 | Competence | Sufficient (academic) staff, theoretical knowledge, up to date, teaching expertise, communication
3 | Attitude | Understanding students’ needs, willingness to help, availability of guidance and advice giving personal attention, emotion, courtesy
4 | Content | Relevance of curriculum to the future jobs of the students, effectiveness, containing primary knowledge/skills, communication skills and teamworking, flexibility of knowledge, being cross-disciplinary
5 | Delivery | Effective presentation, sequencing, timeliness, consistency, fairness of examinations Feedback from students, encouraging students
6 | Reliability | Trustworthiness

**Table: (1): Owlia and Aspinwall’s (1996) Quality Dimensions in higher education**


Table (1) includes both subjective and objective aspects of educational quality. For instance, such a dimension as “visually appealing environment” confirms Mishra’s view that quality can be ‘in the eye of the beholder’ while the majority of the dimensions are, of course, measurable. On the other hand, the International standards Organization (henceforth ISO), a widely cited accreditation agency, developed a quality model for universities that consists of four platforms as shown in figure (1) below:

**Figure (1): ISO 9001: QMS, process for a university**

Source: ISO INSIDER

Figure (1) illustrates ISO’s International Workshop Agreement (IWA 2) which is said to be distinct from other forms of ISO quality management systems (QMSs) in two ways: it was ‘written by educational professionals’ and it uses education-related terminology such as ‘educational organization,
educational services, educational provider, learner, education design, education delivery, assessment of learning, and more’ (ISO insider)

All academic QA guidelines and models reported above approach educational quality as a product of the collective effort of the academic institution. However, the thematic structure of each seems to put more emphasis on the role played by the institution administration. Of course, commitment of what Mishra calls ‘top management’ to the implementation of academic quality principles provides drive for efficient and sustainable quality applications. Still, the role played by the faculty is non the less important. It will be shown in section (4) below that academic quality movement has brought more educational challenges that are primarily the responsibility of the faculty.

2. Empirical study

This section presents the empirical study in terms of the subjects, instrument of data collection, instrument validity, instrument reliability and procedures.

i. Subjects

The subjects of this study are the teaching staff of Al-Majma’ah Community College of King Saud University; twenty-six of whom responded to the questionnaire. Table (2) gives a detailed description of the subjects in terms of their specialties.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>NO.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>5</td>
<td>23.1</td>
</tr>
<tr>
<td>Computer Science</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>Languages</td>
<td>8</td>
<td>30.8</td>
</tr>
<tr>
<td>Accounting</td>
<td>5</td>
<td>19.2</td>
</tr>
<tr>
<td>Nursing</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>Education</td>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>Medical devices</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>26</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table (2): Subjects

ii. Instrument

A self-assessment questionnaire was developed to collect data for this study. It consisted of twenty questions, covering the QA aspects related to the faculty responsibilities. The QA aspects fall into two types of activities: syllabus activities and self-development activities. All the questions were presented with four frequencies: all the time, most of the time, sometime and never - for the subjects to choose from. The syllabus activities includes the rewriting of the courses description in the manner reported in (4) below, the writing of course report at the end of each term, publicizing of the quality culture among the students, etc. As for the self-development activities, it consisted of attending training courses, workshops, conferences, etc. (for more please see the appendix). In principle the faculty assignments included in the questionnaire have always been there even before the introduction of the quality movement but the faculty, not like nowadays, was required to follow them to the letter.

iii. Validity

The questionnaire was sent to experienced faculty for assessment. A number of remarks were made about its content. After consideration and incorporation of these remarks into the questionnaire, it was sent to twenty-five referees to judge the suitability of its questions. Responses were treated statistically, resulting into the alpha value of .7413. Table (3) below illustrates the mean of referee responses and, hence, the instrument validity:

<table>
<thead>
<tr>
<th>N valid</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>.7413</td>
</tr>
</tbody>
</table>

Table (3): Instrument validity
iv. Reliability coefficients
Pearson correlation was used to calculate the instrument reliability coefficients. Table (4) shows the result:

<table>
<thead>
<tr>
<th>N of cases</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing</td>
<td>0</td>
</tr>
<tr>
<td>Alpha</td>
<td>.7538</td>
</tr>
</tbody>
</table>

**Table (4): Reliability coefficients**

v. Procedures
The subjects were given the questionnaire translated in Arabic and were requested to answer and return it at their earliest convenience. Since the subjects themselves refereed the questionnaire, they did not take long time to answer it. However, it took some of them a whole week to answer. Some subjects pointed out that they could have chosen the frequency ‘all the time’ to please the College Administration since the College Dean was the first author of the paper. But they were assured that all the answers will be checked against the content of their personal webpages and the official records of the Quality Unit in the College.

vi. Results
This section presents the statistical examination of the research hypothesis which will further be interpreted in section (4) below. Hypotheses while part two discusses the results in detail.

a. Examination of Research hypotheses

**Hypothesis one:** 'There is no relationship between faculty specialty and his involvement in QA activities.'

ANOVA was used to examine this hypothesis. Table (5) summarizes the result:

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>76.558</td>
<td>2</td>
<td>38.279</td>
<td>5.553</td>
</tr>
<tr>
<td>Within Groups</td>
<td>158.558</td>
<td>23</td>
<td>6.894</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>235.115</td>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Correlation is significant at .05 level

**Table: (5): Examination of hypothesis 1**

The statistics confirms the hypothesis, showing no significant difference between the subject’s specialty and his involvement in the academic QA activities in the College.

**Hypothesis two:** 'There is a significant difference between the faculty involvement in the syllabus activities and the self-development activities.'

T-test was used to examine this hypothesis. Tables (6) and (7) present the result:

<table>
<thead>
<tr>
<th>VAR00001</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syll.</td>
<td>26</td>
<td>41.9615</td>
<td>4.75378</td>
<td>.9329</td>
</tr>
<tr>
<td>Sd.</td>
<td>26</td>
<td>27.7308</td>
<td>3.06669</td>
<td>.60143</td>
</tr>
</tbody>
</table>

(where syll. stands for syllabus activities, and Sd. stands for self-development activities)

**Table (6): Group statistics**

<table>
<thead>
<tr>
<th>t-test for equality of means</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.827</td>
<td>50</td>
<td>.000</td>
<td>14.2308</td>
</tr>
<tr>
<td></td>
<td>12.827</td>
<td>42.736</td>
<td>.000</td>
<td>14.2308</td>
</tr>
</tbody>
</table>

Correlation is significant at .05 level

**Table (7): Independent samples tests**
The statistics confirms the hypothesis since the correlation is significant at .000 in favor of the syllabus activities. Parts (b) below will give further interpretation of this result.
Hypothesis three: ‘QA applications enhances faculty participation in capacity-building programs to improve their overall performance’

Descriptive statistics was used to examine this hypothesis, giving the following result:

<table>
<thead>
<tr>
<th>N</th>
<th>Valid</th>
<th>Missing</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Variance</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26</td>
<td>0</td>
<td>27.7308</td>
<td>27.0000</td>
<td>3.06669</td>
<td>9.40462</td>
<td>20.00</td>
<td>32.00</td>
</tr>
</tbody>
</table>

Table (8): Faculty participation in capacity-building programs

In this table, the mean of faculty participation in the capacity-building programs is greater than the median, thus, supporting the hypothesis, for more on this, see section (4) below.

3. Discussion

The formulation of the first hypothesis grew out of the general belief that pure science is more akin to technology than humanities. This belief is further reinforced by the widely used phrase ‘science and technology’. Now given the fact that the academic quality culture at King Saud University depends heavily on the employment of technology, some people might expect those doing science-related subjects to outperform those doing humanities and, therefore, show more involvement in academic quality applications. It is also worth mentioning that Community Colleges at King Saud University offer programs that traditionally have their origin in colleges of science and humanities. Such an unusual combination might not enable some faculty to make themselves at home and, thus, strengthen his prejudice against certain academic fields in the College. That all faculty, regardless of specialties, has been involved to the same degree in the QA activities at Al-Majma’ah Community College is a natural consequence of the University policy to have all its Colleges accredited nationally and internationally within a definite time limit. All faculty attended a series of capacity-building workshops to gain knowledge and skills necessary for the implementation of academic quality in the College. What is more, all the faculty, regardless of specialties again, has been placed in a number of QA teams in order to deal with specific aspects of QA in the College.

The result pertaining to the second hypothesis has shown that subjects were more involved in the syllabus activities than the self-development activities. There are many facts to support this tendency. First, and most important of all, dramatic changes have introduced into the description of courses in order to foster more academic transparency between the faculty and the students. Previously, the faculty is to develop course description into one- or two-page course outline to be the basis of teaching. However, with the advent of QA culture, the course description, technically known as course specification, is developed into a course file that amounts to 10 pages (on average). Second, the faculty is required to inform the students of the content of each course both online and in the classroom. Third, immediately after every final examination faculty should submit a self-assessment report about each course they have taught. In the course report, the faculty assesses the steps taken in implementing the course; it is of the same content as the course specification. Fourth, syllabus activities seemed of greater importance to King Saud University authorities in that it was circulated at the beginning of the academic year 2010/2011 that whoever failed to write course specification would have their contracts terminated. It is natural then, greater effort has been devoted to the syllabus activities

Where hypothesis three is concerned, it basically addresses the activities subsumed under the self-development category, which includes attending QA and professional workshops, conferences and training courses. No doubt, these are important capacity-building activities that greatly facilitate perception and interaction with a variety of tasks inherent in the QA culture. However, the result pertaining to hypothesis two shows that self-development activities have been given less attention than the syllabus activities. Still, this comparative situation does not detract from their value. In fact, The Quality Unit at Al-Majma’ah Community College has two date implemented two QA awareness-raising workshops attended by the entire faculty. So, one way to explain this situation is to argue that
self-development activities are negatively affected by the academic status of the majority of the faculty. Viz. Almost 60% of the teaching staff are lecturers who are generally understood to be lacking in (career) motivation to attend conferences and publish research since these do not contribute to their promotion.

4. Conclusion

The purpose behind this study is twofold. First, it was intended to assess the faculty involvement in the QA activities that have for two years been taking place in the college. Second, the study was hoped to give feedback on whether the challenges brought with the QA movement can themselves provide professional development for the staff. Fortunately, the faculty performance empowers us to argue that as the result of their implementation of the various aspects of academic quality, the faculty has acquired more professional skills in their specialist areas and, of course, in the quality culture. However, there still remain some issues of dispute. Many subjects have expressed their dissatisfaction with what they believed to be drawbacks that need to be seriously addressed by the College Administration. First, most comments concentrated on the lack of maintenance of instructional technology. Second, the present system of teaching load does not seem to support the academic quality philosophy; viz. doing up to five courses each term might detract from the value of the teaching process. Third, some faculty expressed their fear that the College concern with the extra-curricular activities might negatively affect the efforts made by the faculty in performing curricular and research activities.

References


Collaborative Higher Education Programmes as the Way Forward For Continuing Professional Development and Lifelong Learning

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In the United Kingdom, there is currently an increasing demand for professionals to engage in career-long continuing professional development (CPD) and to do so as internal practice researchers. The normal setting for this type of CPD is the professional’s own practice and organisation. This paper examines the issues facing the professional as insider researcher and considers the possibility of creating an approach to CPD that fuses desired institutional behaviour and change and the needs of the individual as learner, professional and researcher. The proposal is that demanding this approach to CPD can be successful through a particular form of partnership between an employer and a Higher Education programme. The data on which this study is based comes from a longitudinal project which is being conducted with one large Further Education College in the North West of England. It was collected from groups of first line and middle managers and members of the college strategic management team involved in a programme of work based planned provision to develop leadership skills in partnership with a large University in the North West of England, Liverpool John Moores University (LJMU).

The study focuses on CPD management and leadership programmes run in partnership between the College and the University. Partnership in design, delivery and participation are investigated as models for effective CPD. Based on over five years of field study, the research has addressed the question as to how an individual’s professional development can be managed and designed for maximum effectiveness of learning, both for the individual professional and their organisation. Data was collected through evaluations, critical incident reports, semi-structured interviews and critical reflection on action learning projects.

The data shows how professional staff in the Further Education sector, operating as first-line or middle managers, make sense of a role which is far from certain and often requires the capacity to live on the edge, while maintaining a commitment to professional values (Edwards and Coffield 2007,). It shows that appropriately organised and structured professional development opportunities can support colleagues in this turbulent context and enable them to develop as self-critical and reflective educational leaders. It also demonstrates that partnership approaches such as those suggested in the study can form the basis of effective learning and development for the individual and the organisation.

Keywords: Lifelong Learning, HE partnerships, CPD, Internal Researcher

Introduction

In the United Kingdom education context, demand for continuous change in practice has become the norm and innovation has become a necessity rather than a choice for most educational institutions. This paper proposes that this is markedly pronounced in the further education sector and supports Coffield’s 2007 acknowledgement of the sector undergoing waves of turbulent change. The increased emphasis on change and innovation alongside increased productivity and raising standards has called for the creation of systems and structures where new ideas can be fostered, managed effectively and built into the dominant cultures of organisations. This paper questions how first-line and middle managers should be supported in their role as change agents and asks whether this is possible through a work based partnership learning programme between an employer and a Higher Education learning programme. Unusual about this programme is the role of the college as employer and work based learning partner. Within the business world there are examples of chief executive officers setting companies on deliberate courses of learning and transformation (Kleiner & Roth, 2000), but such examples do
not appear to the same extent within education research. This paper and ongoing longitudinal study attempts to reduce this gap. In 2003 the college senior management team (SMT) initiated a change agenda partly through the vehicle of the work based learning and higher education management development programme. The intention was to use the programme and its outcomes to examine issues of structures, relationships, stress, conflict, communication and behaviour across a large multi-centred organisation. The fundamental intention was to identify and equip a group of managers with the skills and attitudes required to manage change and also become the group on which succession planning strategies could be based. The basic mechanism for this ambitious project was to encourage and support first line and middle managers as insider researchers and change agents (Coughlin, 2003). The main concern of this paper is to examine the manager as action researcher within a partnership work based formal higher education learning programme. Lessons from this study may be of importance to managers and organisations adopting this process on an international basis, and of particular importance to countries such as the United Kingdom, where professional development policy in many contexts is making work based practitioner research almost a prerequisite for institutionally supported continuing professional development.

Research Method

The data comes from a longitudinal project which is being conducted with one large further education college in England. Data was collected through evaluations, critical incident reports, semi-structured interviews and critical reflection on action learning projects with participants and members of the Senior Management team supporting the initiative.

The data shows how professional FE staff, operating as first-line or middle managers, make sense of a leadership role which is far from certain and often requires the capacity live on the edge, while maintain a commitment to professional values. It also demonstrates the tensions in supporting an initiative and ensuring its engagement within the day to day context of the organisation. It was essential to ensure both confidentiality and anonymity to respondents. In undertaking the project it was therefore essential, as far as possible to ensure confidentiality and anonymity in terms of the source of any comments being traced back to an institution or individual. However it is interesting to note that some respondents were keen to be identified to management in their organisation so that they could be identified and their voice could be heard.

A longitudinal study of one FE College suffers from the limitations of a case study approach but does suggest that local ecology; learners, history, institutional context and mission (Hamilton, 2007) may be of particular significance in assessing the impact of policy on practice particularly in the Further Education context. The research project has been running since 2003. Initially middle managers interviewed were exclusively lecturers promoted to middle management positions such as curriculum group leaders and course team leaders however, as the project developed the group also included managers and leaders from student support services, administration and human resource managers. As the project developed interviews have also been carried out with the senior managers responsible for the programme and significantly for succession planning. The emphasis with this group is to examine the curriculum and partnership design and effectiveness.

Context

The college under study is a large successful further education college in the North West of England. The college has over 24,000 students and a workforce of over 2,000 full and part-time employees. In England further education colleges were originally vocationally orientated training providers but as with the college under study they now offer a comprehensive range of programmes from basic skills to graduate and postgraduate programmes. The College has experienced change and turbulence post incorporation in 1993 but is now in sound financial health, has a reputation for excellence and has enjoyed “outstanding” status since its most recent Office for Standards in Education (OFSTED) inspection. During this period a commitment to quality and service to its community has been the explicit aim of the principal and senior management team who are committed to maintaining this through the development of appropriate management and leadership processes, including succession planning strategies. To that end in May 2003 an in-house work based learning management development programme was devised in conjunction with Liverpool John Mores University (LJMU) which was to be rooted in the principles of action learning and action research as tools for management and leadership development. It was also seen as a way developing the managers as change agents throughout the organisation. The use of action research and action learning for management development is not new. Writers such as Revans (1986) provide a range of case study evidence as to the effects of such learning processes. However, this project and this research is unusual in the use of managers from across the same institution, the relationship with the College with the Principal and SMT playing an active role in the action research element, and the explicit aim of
using the action research and action learning model as the basis for managing change, supporting succession planning and even as part of building a learning organisation as described by Senge (1992). The attractive concept of the learning organisation, as promoted by a number of writers (Argyris & Schon, 1997) and Senge (1990, 1992) was a source of inspiration to this thinking. Particularly seductive in their apparent simplicity were the definitions of Pedlar 1991 and Senge (1990) vision of organisations.

These unusual elements make the study important within the current strategy in many UK professional organisations of developing the professional as researcher on practice. Using first line and middle managers as change agents is a relatively recent but important change "discontinuous and radical organisational change is extending our notion of the change agent role beyond the singular, full-time mandated individual (usually a seconded manager or external consultant) to encompass a more diverse, multi functional, mixed status cast of characters who are now accommodating change responsibilities within their existing operational, professional or technical roles” (Doyle, 2002, p.465). This particular development in the first line and middle management role from change novice to change expert is considered in this study. This is also taking place as an element of a succession planning strategy explicitly identified by the work based learning partner as an opportunity to identify prospective leadership candidates with the aim of providing opportunities for developing their leadership skills.

The work based programme:
The programme was designed collaboratively with Liverpool John Moores University as the higher education institution (HEI) and accrediting body and the College as equal partners. The basic starting point for the programme design was the College insistence on being an active partner with the university, not only designing the programme but also in delivering some sessions, setting action research projects based on current targets, supporting colleagues as insider researcher and acting as the receiver of research project recommendations. What may be significant here is that even with similar sponsored courses the partner tends to take a more distanced and passive approach. In this instance the partner as with most partners wanted the development afforded by the programme and the qualification for their staff but they also wanted to play an integral part in the design and delivery of the learning. Underpinning involvement in curriculum design was the view held by the partner that if colleagues were to be asked to research, challenge and change then the College management team not only has to be committed to such a culture but has to be actively involved in its creation and maintenance. Consequently the College management team were involved in all aspects of the programme design and delivery and assessment. The outcomes of the design are considered in the data.

To complete the programme College middle and first line managers initially enrol on a postgraduate certificate in management. They can then choose to develop their award into an MA by completing further modules in the MA programme. For this study the work based learning postgraduate certificate is the main focus. Underpinning programme design was the view that individual action research leading to action learning sets provided a model for the development and implementation of an organisational learning culture (Senge, 1992) and that to achieve this, a particular“ intelligent” leadership style and organisational culture was essential to support managers as insider action researchers and potential agents of change.

Participants are taught sessions on organisational cultures, models of leadership, management and change led by university staff and supported by college managers when appropriate. This then moves into the action research/action learning phase, where participants work in small groups to complete internal action research projects set by the college principal and governing body. A key feature of the learning is the “real” nature of the problems set. All work based projects are real issues of prime importance to the college operating and strategic targets, such as a critical review of the management structure, the role of the governing body, new builds, marketing and so on. The final reports and recommendations are formally presented to the college governing body for action. The principal as chief executive guarantees either direct action based on recommendations or a detailed rationale for no action. In this forum participants raise their profile as future senior managers and as change agents. The insistence on using real problems as the basis for learning and assessment matches Revans (1986) claim that managers learn best through engaging with real problems requiring solutions. For this programme, just as for Revans (1986) there is no place for simulation.

As indicated earlier the concept of the learning organisation, as promoted by a number of writers (Argyris & Schon, 1997; Senge, 1990) was a source of inspiration to the programme design. Particularly seductive were the almost inspirational as well as aspirational definitions of Pedlar (1991) and Senge’s (1990) vision of organisations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to learn together. As part of the action research process in particular managers were
encouraged by their employers as well as the university partner to research potentially controversial or contentious areas of the college’s operation, striving for debate and change rather than consensus on the following premise:

“A learning organisation consciously permits contradictions and paradoxes. In a learning organisation conflicts are not seen as threats to be avoided but as challenges to be met, with the goal of stimulating ongoing debate on rules, insights and principles. (Swieringa & Wierdsma, 1992, p.55).

Findings

The following findings are drawn from interviews, evaluations, reflections, critical incident reports and action research projects with participants and college senior managers. This is a long and ambitious project and the findings will be developed into a more detailed critique in further papers. The emphasis in these finding are on participant’s views of the effectiveness of the programme in making sense of their role. For example, a key theme emerging across all programme iterations is participant’s views of tensions in their role as middle managers, change agency roles and the effectiveness of the programme in bringing about and maintaining change either in strategic succession planning or the ultimate ambition of it creating a “learning organisation”

- **Tensions in the management role**

Rather than seeing themselves as independent change agents respondents reinforced the widely held view amongst middle managers that it was common for them to see themselves as one-way “conduits” for centrally driven policies, where their role was to engineer consent and compliance. For example, ”consultation” was a theme many alluded to;

“My chief role seems to be to convince colleagues of the need for change. The idea of consultation being a process of telling and selling a policy to staff is very useful. It describes what I seem to do a lot. It also seems to be what happens at all levels in the organisation. Apologies are made for the policy or change and then reasons are given for its inevitability.”

**Course team leader (first line manager)**

Almost inevitably it is in this transmission of directives where much of the tension between professional and operational behaviour is witnessed.

- **Professionalism and Change**

A number of respondents identified conflicts between demands made on them by their change management roles and their own professional values.

“Often the best way to support staff is to provide some sort of role model. This may mean supporting individuals on a one to one basis, maybe even teaching their classes at times I’m not sure whether this would be seen as effective management, but it is often very necessary”

**First line Manager**

“In my role dealing with change goes well beyond my technical ability to do the job. It needs good interpersonal and coping skills. So far I have survived, but at times I have been close to the edge.”

**Student Services Co-ordinator**

- **Professionalism and Values**

“My job is essentially a roller-coaster ride with lots of highs and lows. The highs tend to be teaching and helping to maintain student-centredness. The lows are when these are challenged. The course team helps, but it can also be hard to convince friends and colleagues to do something when it’s clear that I don’t really agree with it.”

- **Strategies for Influence**

Although respondents often saw their management roles as confused and contradictory they were able to draw on their professional values and skills in dealing with the conflicting demands placed upon them.

“Like most of my colleagues on the programme I came into this role from a different professional background. For me it was teaching and leading teaching programmes. This programme has been really useful for me in giving me a chance to think, discuss and read about what I have to do or should be doing as a manager. It really strikes me that I have never been taught the skills of management or change and if I hadn’t come on the course I
wouldn’t have been. I don’t think most of my colleagues or bosses have. There seems to be a silent consensus that we will just pick up these skills or have them. It seems crazy we wouldn’t now allow a teacher to teach without the qualifications. I have enjoyed the course and I have learned a lot but I am still not sure if I have the skills or if my bosses back in the college take what we are doing here that seriously on a day to day basis.

The above comments indicate the success and appropriateness of the work based programme in both supporting their professional roles and also in giving participants a vehicle for developing their ideas about management and leadership. To use an over-used almost hackneyed phrase it has allowed busy professionals an opportunity to “look outside the box”.

**The effectiveness of the programme:**

As indicated in the previous comments and quotations since 2003 managers as participants have spoken positively of the impact of the programme on their personal development, confidence and motivation. Many have gone on to complete appropriate Masters programmes and many have been promoted both internally and externally having completed the programme. A key issue for the insider action researcher (Coughlan, 2003) is the organisational support required to challenge existing practice and almost all participants have affirmed that such support and encouragement had been extended to them whilst completing programme research tasks. None of the over100 participating managers had regretted taking the course. While access to the college principal and senior management team in their normal work was never particularly difficult participants appreciated the degree of “specialness” and access to work place systems, resources and influence provided to them whilst participating on the programme. There was also a general consensus that the academic learning input from the university was vital in providing “The scene outside the trenches “as one middle manager commented. Reading and reflection on research and theory helped to avoid the danger of too much informal institutional introspection. This is a danger of internal staff development programmes identified by many participants in the programme. Interview data in relation to the action research and assignment tasks is largely very positive. Most participants stated that the effect of being encouraged to investigate complex and potentially controversial areas of the college’s life was liberating and empowering-more so than had been the case with any other professional development previously undertaken. Despite the pressures on time and workload, which are serious professional issues, most found the experience personally and professionally significant;

“The most important professional development opportunity I’ve ever had….invaluable experience for me”

*Curriculum Group Manager*

“I certainly rediscovered my love of learning…I have really valued and appreciated the opportunity”

*Curriculum Group Manager*

“The programme has provided me with a platform and qualification to move my career forward”

*Administration Middle Manager*

“I have enjoyed doing it and it has taught me that I can be successful in an area outside teaching….I think the money invested in me has been recouped in terms of the changes in me as a leader”

*Course Team Leader*

Using real organisational problems as the learning and assessment vehicle, although challenging to all parties, has equally proved successful.

“I was dreading presenting my findings to the Senior Management Team. I teach and talk to groups everyday but this seemed a very different proposition. I wouldn’t normally meet these people but I did see more of them through the programme and even interviewed some for the research. I was relieved at the end of the presentation but it went well and was well received. It was a new and important thing for me to do.

*Curriculum Group Manager*

“It was a struggle at first to act as a researcher in the College. I thought colleagues would be hostile and indifferent and to be fair some were. The majority were really helpful and saw my project as having some real importance to them. It wasn’t easy to find the time to but I did receive a lot of support from Managers in the College.

*Curriculum Group Manager*

Positive comments were received from the College Strategic Management Team responsible for the design of the programme:
"I am really pleased with the outcomes of the projects. I have worked on staff development for many years and often staff don’t complete because of assignments. They usually tell me that the assignments are irrelevant and too academic. I haven’t received any comments like this from any of these groups. The projects are outlined by us and the participants choose one of direct relevance and importance to them. They produce excellent work and we get the outcomes of solutions to problems and motivate staff. They also complete the programme successfully. On other management programmes supported by the college the achievement and retention rate is no more than 30% on this programme it is over 96%. Clearly we are doing something right.

**College Staff Development Manager**

"The outcomes of the programme are what we hoped for. To have our staff learning in this way as part of their professional practice is incredibly valuable for us. It was recognised as best practice by OFSTED recently and is part of our achievement of outstanding College Status.

**College Vice Principal**

Equally the extent to which the College has become a learning organisation and the role of the programme in meeting that aim has been a matter of recurring consideration at the end of each programme. Even managers with a deep suspicion of anything deemed to be “management jargon” or “psycho-babble” a view expressed by participants about the messianic tone of much of the learning organisation rhetoric, appeared ready to accept the concept of the learning organisation as an appropriate aspirational state of being for the college. Interestingly, the term “learning organisation” has found its way into the college lexicon and an annual college research day is identified as an explicit part of developing the college as a learning organisation. However, it is still unclear what role the management development programme explicitly plays in this process.

One emerging conclusion therefore from this piece of longitudinal research is that work based management development through the vehicle of an employer supported and designed higher education academic programme may constitute an effective model for “leadership training”, “succession planning” and “workforce development”. However, there is an important sting in the tail. All of the above positive, critical and informed evaluations both from part participants and employers refer to managers whilst they are participating or have just completed the programme. Interviews taken two or three years after completion of the programme still comment favourably on the quality and benefits of the programme but there is concern about how it fits into normal ongoing college processes and systems.

"I felt inspired after presenting my research recommendations and hearing the Principalship’s commitment to my recommendations. But back in my normal role this and other work on the programme seemed to be quickly forgotten. In fact and I don’t want to be cynical but some of my colleagues took pleasure in ridiculing my “pretensions”. I was quickly put in my place. Even my line manager didn’t want to work with me on any different level. I really think there is a need for some of the senior staff to go on this programme”.

**Curriculum Group Manager**

This is not an unusual comment and the return to role is an issue which needs to be addressed by all participants in the programme design.

Equally comments from members of the planning senior management programme team identifying concerns about the programme focus and uncertainty about its link to succession planning need to be addressed by all programme designers if the programme is to meet all of its ambitious aims. At this point transfer back to the organisation and embedding of ideas and individual talents within the organisation must be addressed.

“We have a group of trained and informed middle managers. They have presented excellent projects and demonstrated their project management and presentation skills. I am not sure how we are building on this. I can see that many participants have been promoted internally and externally but whether there is a direct link between this and the programme is unclear. I think there is a task for us to manage this group better, although I am not sure how”

**College Strategic Management team member**

“We have a commitment to succession planning and this programme is an example of our investment in supporting staff development. I still think how we use our colleagues from this programme is still fairly informal. I don’t know what the answer is and treating these colleagues preferentially goes against our policies of equality and openness but if we don’t formally take advantage of the outcomes of the programme it is a missed opportunity. It could lead to us asking why we are doing this in the first place.”

**Strategic Management team member**
Conclusion

It is important to recognise the specific context and limitations of the study. However, this does not preclude the transferability of the design and programme processes to other contexts. This study suggests that it may be possible to create a process and culture within an organisation where managers operating as learners and insider action researchers can be instrumental in creating effective change and development. This research suggests that the action researcher/change agency role for the manager needs to be supported and driven institutionally by the employing body in an ongoing active role in the programme process if it is to be positive for the individual manager and the organisation. From this research it is not support on the programme which is the issue but dealing effectively with the individual’s return to their organisational role. Finally to end on an even more ambitious note, the College and University experience outlined here may demonstrate that a collaborative approach to learning with a higher education organisation and an involved and responsive employer might be effective in translating the nebulous concepts of “professionals/managers as researchers” (Day, 1998), “communities of practice” (Wenger & Snyder, 2000) or “learning organisations” (Senge, 1991) and lifelong learning into a functional reality.

References


This paper presents the establishment and delivery of the World of Work® programme at Liverpool John Moores University, including the context and background that led to the establishment of the programme; methodology used - included redefining existing careers provision; and, findings in terms of the numbers of students now engaged on a voluntary programme (over 3,000 students are registered on the World of Work® Blackboard module). Research into employer expectations of graduates and students’ perceptions of where they stand in the graduate market support arguments that there is a need to address the skills issue within the student lifetime (Mason et al., 2009; Tomlinson, 2007). Having accepted the skills-gap challenge, LJMU has entered new territory in terms of delivering a voluntary programme which will enable students to identify and develop their skills - and skill gaps, leading ultimately to an employer interview and World of Work certificate.

While the destinations of graduates are of importance to institutions in an increasingly competitive HE environment, developing an employability programme also begins to re-dress the imbalance for graduates whose future employment success may have been influenced by, for example, degree classification, gender, ethnicity, and socio-economic class (Prokou, 2008). The value of an employability programme for an institution that draws forty-five per cent of its student population from Merseyside has the potential to be of considerable value to those who participate in the programme.

Keywords: Employability, World of Work®, graduates, skills

Introduction

Liverpool John Moores University has responded to the growing consensus of opinion within certain sectors of business for the need to address the skills gap amongst graduates. This opinion has been most notably expressed by Digby Jones (2004), former Director of the CBI. Academic research into employer expectations of graduates and students perceptions of where they stand in the graduate market support the argument that there is a need to address the skills issue within the student lifetime at University (Mason et al., 2009; Tomlinson, 2007). Having accepted the skills-gap challenge, LJMU has entered new territory in terms of delivering a voluntary programme which will enable students to identify and develop their skills - and skill gaps, leading ultimately to an employer interview and World of Work certificate. This programme takes the student through the process of reflecting
upon study, work experience and extra-curricular activities so that they can draw on those experiences when it comes to the time of securing full-time employment after graduating. The process concludes with students having the opportunity to obtain a World of Work® certificate, verified by an employer.

While the destinations of graduates are of importance to institutions in an increasingly competitive H.E environment, developing an employability programme also begins to re-dress the imbalance for graduates whose future employment success may have been influenced by, for example, degree classification, gender, ethnicity, and socio-economic class (Prokou, 2008). In this sense, the value of an employability programme for an institution that draws forty-five per cent of its student population from Merseyside has the potential to be of considerable value to those who participate in the programme. This paper will detail the practicalities of establishing the programme, and the challenges faced along the way. Current and future developments will also be outlined at the end.

Context

Liverpool John Moores University (LJMU) is the tenth largest University in England, and is an important economic force locally, providing 300 million pounds in income generation for Liverpool. The student population at LJMU is comprised as follows: 24,000 students study in Liverpool; 4,500 are classed as overseas students; 66 per cent are in full-time study; 55 per cent are female; two-thirds of students are from disadvantaged or low income families; and, 45 per cent are from Merseyside. Almost 265,000 students graduated from UK Universities in 2007 – from this, around 20,000 gained employment with graduate recruiters while 1 in 3 graduates enter employment in non-graduate jobs. Over 60 per cent of graduates have a 2.1 grade or better.

LJMU has a long history and track record of vocational excellence, with significant existing links/contacts with employers and organisations both in the region and nationally, and the structures in place within the institution to create new offerings for all students on all programmes.

The World of Work® programme was established as a strategic vision in response to the challenges emerging from growth in the H.E. sector: increasing competition in the region from other H.E. institutions; increasing numbers of students studying locally; the possibility of decreasing numbers of new students; increasing competitiveness of graduate job recruitment market; and, consistent employer feedback of a poor understanding of the jobs market by students.

Most H.E.I.’s in the UK would claim to develop skills relevant to future employment and often have developed additional, small-scale, or ‘bolt-on’ activities to boost the employability prospects of their graduates. LJMU has taken a different, more radical approach which can be summarised as ‘Connecting both students and staff more closely to the World of Work (WoW)’. The unique element of this strategy is the role of employers, who are working in partnership with the University in defining and verifying employment-related skills. The graduate trends and employer feedback noted above have been evidenced in academic research and debates concerning employability.

In the foreword to the 2004/5 Prospects Directory, Sir Digby Jones noted:

A degree alone is not enough. Employers are looking for more than just technical skills and knowledge of a degree discipline. They particularly value skills such as communication, team working and problem solving. Job applicants who can demonstrate that they have developed these skills will have a real advantage. (Jones, 2004)

There has been a growing consensus of opinion sharing Jones’ view, and the increasing focus on graduates entering the job market with ‘soft’ skills is evident through research in the area of employability. Mason et al. (2009) note that employers are looking for a more finely tuned graduate, with a specific set of graduate level skills that can be transferred to the workplace (Mason et al., 2009). Tomlinson’s (2007) research into students’ understanding of the correlation between higher education credentials with future career prospects and earnings show that their expectations of automatically entering a rewarding career have changed, and they themselves understand that a degree alone is no longer the key to acquiring a graduate role. Tomlinson’s research points to a sense amongst students concerning how one differentiates oneself from peers against the context of the growth in H.E. – and the need to gain positional advantage through bringing soft skills and marketing themselves not only in degree terms, but with the added benefits of a set of behavioural and social skills. Andrews and Higson’s (2008) research of perceptions and experiences of business graduates and employers found that European
employers expect graduates to be employment-ready, including not only subject specific knowledge, but also to hold a set of soft business skills. Andrews and Higson conclude for the need of programmes within degree courses that focus on students acquiring such skills. Pool and Sewell (2007) note that around two-thirds of graduate positions are open to students of any discipline. This situation gives further support to the notion that graduates need to acquire a set of employability skills when subject specific skills are not the main criteria.

Prokou (2008) links the establishing of the employability agenda to the changes in H.E. in the 1980s, and moves towards universities being increasingly concerned with outputs, i.e. graduate employability. More importantly, Prokou also comments that the notion and deployment of employability skills also gives rise to the opportunity to re-balance the main influencing factors of student’s employability, such as type of institution, mode of study, discipline, social class. In this sense the employability theme – and value of it – is crucial to all students if it begins to put graduates on a more equal footing with their peers who may have advantages influenced by gender, social class, institution, and so on. Once employability skills are learned then they will be utilised strategically throughout a graduate’s career as they move from organisation to organisation (Clarke, 2008). Derous and Ryan’s (2008) research points to the benefits - both for academic achievement and establishing careers after graduating - of personal and professional development gained through part-time quality employment opportunities during study. The above research sets some of the background context for LJMU’s establishment for the World of Work programme.

Strategic aim of WoW®

The strategic aim of WoW® is clear: to deliver to our students a high-quality academic programme connected to the world of work and business, plus a range of measured and certified experiences and personal skills that will best equip them for successful careers. LJMU has faced the challenge posed by addressing the graduate and transferable skills issue, and is now providing a programme that ensures graduates will closely match what employers are looking for. Recognising the need for transferable skills and competencies is about establishing a sense of ‘employability’ in graduates. Providing a credible and robust programme of employability at LJMU has been done through working in consultation with employers, students and staff. Turning an intangible concept into something concrete has been the focus of 5+ years of research and consultation on employability and has led to successfully delivering the World of Work® employability programme and certificate. Employability is not only the concern of undergraduates but is relevant to all levels of study in universities. Not only is a degree no longer enough for the average undergraduate, but postgraduate and doctoral research students should also be concerned with (a) identifying and (b) developing their skills in order to (c) market themselves effectively.

Methodology

Establishing an employability programme that could be delivered centrally was done by:

- Reviewing relevant literature and canvassing opinion from relevant stakeholders, including academics and employers.
- Establishing an Employer Advisory Group (National) with major national and international employers to influence the skills agenda.
- Developing criteria that provide the basis for the three strands of WoW® (see below).
- Enlisting the support of local employers as verifiers of the WoW® certificate.
- Establishing Key Performance Indicators across the university.
- Redefining careers-related provision already in place within the University.
- Acquiring resources, ranging from the physical ‘building’ – The Graduate Development Centre (GDC) – to the staff that supports the WoW® programme, namely a delivery team, a brokerage team and an admin team.
- Vigorously marketing WoW® to students and academics.
- Delivery of the WoW® programme within each faculty through Careers professionals.
- Developing processes for the collection and assessment of personal statements against the WoW® criteria.

Additionally, LJMU:

- Earmarked significant institutional funding over a 5-year horizon and thereby recognising that all funded areas were allocating ‘their’ resources to achieve the WoW strategy.
- Recognised the importance of basic, practical skills related to the workplace and creating a Ready for Work programme within the GDC to raise students’ capabilities in these areas.
Created student E-portfolios to record skills development with a 20% take-up in first year and 50% expected during 2008/09.

Developed a new H.E.’s support role: the Skills Support Officer, working with staff across the university to develop effective and efficient methods of feedback on the various Graduate Skills (see below), and assisting students in the collection of appropriate skills evidence.

Self Awareness, Organisation Awareness and Making Things Happen: the three strands of WoW®

After extensive discussions with local and regional employers and ratified by the WoW® Employer National Group consisting of senior business figures in UK national and international companies, it was identified that students should possess 3 key areas: self awareness, organisational awareness and the ability to make things happen. This employer advisory group identified these higher level skills that they considered would give new graduates an edge in an increasingly demanding graduate market.

Initially, the development of these skills was to be offered to students once they had completed their undergraduate studies, with the opportunity to have them assessed and verified by an employer, leading to an additional WoW® skills certificate. However, it soon became evident that many of these skills were being developed as a natural part of undergraduate programmes, but not contextualised to gain evidence for WoW® skills. Psychology students, for example, would be knowledgeable around Self-Awareness topics; Business Studies students would have well developed skills around Organisational Awareness, and often have other skills, such as Project Management.

Each student, has an individual and unique skills set, complemented by experiences and development opportunities outside the course of study. The focus for WoW® development is to enable individual students (and staff through the PDP process) to identify what skills they are developing and to provide opportunities to further develop and broaden their skill set. Such opportunities for gaining evidence could come from within the student’s programme, work, or via workshops offered by the Graduate Development Centre.

The University wanted to acknowledge students gaining WoW® skills by issuing a certificate - but with the added cachet of employers judging whether the appropriate WoW® standards have been achieved. In essence, establishing a situation where employers have set the standards and will then verify the skills. The role of the university is to act as a vehicle to highlight and promote the importance of WoW® skills, to provide students with opportunities to identify and develop evidence and, to make arrangements for the evidence to be verified. The WoW® programme is open to all students at LJMU, both undergraduate and postgraduate. However, it is recognised that not all will opt for the final certification. Our thinking here is that the success of a WoW® student not only lies in whether s/he achieves certification, but it is also demonstrated by those students who gain-successful graduate employment having followed the WoW® skills development process.

Graduate Skills

The set of LJMU Graduate Skills is designed to provide the underpinning foundation for successful employment. From the outset we decided to use national definitions of transferable skills wherever possible, perhaps to be enhanced later as we gain more experience of usage. The UK HE Academy and the Enhancing Student Employability Skills Co-ordination Team (ESECT) have produced a set of Employability Guides for a range of subjects. Each Guide contains an appendix containing Descriptive Criteria and Indicators for Employability Competencies, which (interestingly) are the same for each employment subject area, although rather voluminous for our purposes.

Working through a set of skills experts within the University, we have identified a set of eight Graduate skills, as follows:

| A: | Analysing and Solving Problems | B: | Team Working and Interpersonal skills |
| C: | Verbal Communication | D: | Written Communication |
| E: | Personal Planning and Organising | F: | Initiative |
| G: | Numerical Reasoning | H: | Information Literacy and ICT skills |

Each graduate skill is defined by means of a descriptor and a set of criteria which set out the minimum standards required by the University for its 400 plus undergraduate programmes, reflecting what skill levels a
typical graduate should be able to demonstrate. Clearly, some programme areas will achieve standards well above the minimum definition. The important feature of the WoW® initiative is that we should move towards not only defining what Graduate skills are expected to be achieved, but also to make it explicit to students where in their modular programme there will be an opportunity to be taught about, to practise and to receive feedback on each element of each skill.

We are confident that this approach will provide students with more certain opportunities for skills development during their undergraduate careers, leading to skills certification. We also are conscious that we have ‘raised the bar’ in terms of proof of concept. When a student leaves us with certified skills it is vital for our reputation with employers that s/he demonstrates those skills in the employment context at a level that makes a real difference.

Work related learning

Our experience tells us that successful Work-Related Learning (WRL) can be hugely impactful for both learners and their tutors, with positive outcomes in terms of employability for learners, and with the external activities of tutors feeding into the curriculum and often leading on to enterprise activities.

From the outset we took a pragmatic line that we could not guarantee every undergraduate a meaningful off-campus placement in an employment setting, although we did wish to offer the guarantee of employer interaction to students. Thus we consciously widened the scope of these external employer connections by requiring work-related learning in every programme that would enhance connectivity with the workplace throughout the curriculum and offer a broader, more flexible scope for the promotion of the WoW® skills, focused upon the application of knowledge and skills within a work-related context.

Given this particular emphasis, it was felt to be important to be very clear from the outset what we meant by WRL. In looking to utilise a nationally-recognised definition that is most appropriate for the WoW® ethos, we concluded that the most suitable definition comes from Moreland (2005), citing a model developed by Knight & Yorke (2004), who provides a statement about WRL within four interconnected activities:

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“work-related learning as involving students learning about themselves and the world of work in order to empower them to enter and succeed in the world of work and their wider lives. Work-related learning thus involves higher education students in four interrelated areas of learning:

- Learning about oneself – one’s capabilities, confidence, life interests and career orientations;
- Learning and practising skills and personal attributes of value in the world of work;
- Experiencing the world of work (or facsimiles thereof) in order to provide insights and learning into the world of work predominantly associated with the subjects of one’s higher education studies; and
- Experiencing and learning how to learn and manage oneself in a range of situations, including (of course) those to be found at work and central to self-management and development activities.”
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To support these different aspects of WRL we are seeking various sorts of employer interactions with students:

- placements, short and long
- written case studies/scenarios
- WoW skill assessment interviews
- video clips
- work-shadowing/visits
- active case studies/scenarios
- guest speakers/Master classes
- discussion boards/interviews

Personal Development Planning

Personal Development Planning (PDP) is seen as the driving mechanism through which skills development is planned, monitored and verified. The PDP involves one-to-one meetings between tutors and students and is a requirement within all UK undergraduate programmes. The more general approach to personal support originally adopted at LJMU has been expanded to include a detailed consideration of skills gain. These discussions are aided by a new group of LJMU staff, the Skills Support Officers, who work with academic staff to identify best practice in skills development and with students in consideration of skills evidence. The University has developed special software to allow the Graduate Skills, and later the WoW® Skills, to be recorded and certified.
Success so far

This academic year has been our first full year after the pilot year. Currently there are over 3,000 students registered for WoW® development. For the 2008-09 period there were 1,698 students registered to attend the centrally delivered ‘Ready for Work’ workshops, with overall attendance standing at 44%. Delivery within the faculty for the same period stood at 9,534 for expected students, with attendance ranging from 61% for the Faculty of Science to 96% for the Faculty of Business and Law.

Conclusion

This paper has demonstrated how the World of Work® programme has been developed in response to the changing H.E. environment, the importance of graduate destinations, employer concerns regarding graduate skills, and informed by research in the employability field. The WoW® programme goes a long way to address the real problems posed for graduates who may be disadvantaged in the graduate job market by pre-determined factors, or by their degree classification. But equally, for those students who are high academic achievers, then it offers a rounded and balanced person to move easily into employment. The appeal of recognizing and developing employability skills also extends to postgraduates and postgraduate researchers, and has prompted the delivery of a Postgraduate Employability Programme for our postgraduate researchers. Additionally we have secured funding for a Graduate Accelerator Programme, aimed at equipping unemployed or under-employed graduates with the skills, confidence and self awareness to gain full-time graduate level employment. While we will continue and develop the WoW® programme, our future work will also involve international collaboration and delivery of the WoW® model in Malaysia. LJMU have been pioneering with the WoW® programme, and the value of WoW® is self-evident through the partnerships with businesses that have evolved both at home and abroad.

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ESECT guide information can be accessed at http://www.heacademy.ac.uk/2174.htm


Developing Universities Through Change Initiatives – Sheffield Hallam University, UK, and the Centre for Excellence for Employability

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In 2005 the Higher Education Funding Council for England (HEFCE) announced successful funding bids to establish Centres for Excellence in Teaching and Learning in England (CETLs). These centres were awarded £0.5 million for each of the next five years, plus £2.5 million for capital spend. The role of the centres, (74 in total), was to undertake innovative educational development work in specific aspects of the HE curriculum within their own institutions, to engage with colleagues within the institution and to disseminate their work across the HE sector. Sheffield Hallam University (SHU), UK, was awarded three CETLs, one of these being a joint undertaking with the University of Coventry. This paper:

- reviews the objectives of the employability CETL (e3i) in terms of embedding employability as a fundamental aspect of the student experience at Sheffield Hallam University;
- presents and examines the approach to educational change adopted by the e3i CETL at Sheffield Hallam University as a form of institutional change initiative;
- outlines the “emergent” modus operandi of the e3i CETL to ensure maximum impact;
- reviews the approach to the evaluation of the impact of the CETL and identifies its major achievements and difficulties along the way;
- reflects on the key learning points from this project that are relevant to universities involved in large scale educational development and change initiatives.

Keywords: Employability, change, institutional strategy, evaluation

Employability – what do we mean? The Sheffield Hallam University approach

For some, employability means being able to secure employment of choice after graduation. Attention here is focused upon the ability of courses to educate students who are then sought by employers in their graduate intake, and on the first destination statistics of these courses. For others, employability is about student attributes which employers find important, and which support continual personal development and enable graduates to engage in life-long learning and career management, so that they are successful in their chosen careers. Clearly, these perspectives are not exclusive, but they are different, encouraging universities to make a choice of their own working definition of employability. The understanding of employability adopted at Sheffield Hallam is:

"Enabling students to acquire the knowledge, personal and professional skills and encouraging the attitudes that will support their future development and employment."

It is important to note that this understanding was the outcome and product of a range of policy and curriculum developments within the University over a significant number of years i.e. the outcome of an evolution of the core mission of the University.
This was developed further to produce a fully fledged Employability Framework, adopted as a curriculum statement by the university in 2004. The Framework identified a number of features that gave shape and meaning to employability within the curriculum and acted as a guide for course and module teams:

**Essential Framework features**
- Progressive development of autonomy.
- Skills development (intellectual; subject; professional; Key Skills).
- Personal Development Planning (PDP).
- Inclusion of activities reflecting external environments.
- Reflection on the use of knowledge and skills between contexts.
- The development of career management skills.
- Engagement with learning from work (LfW).

**Additional features for appropriate courses**
- Preparation for professions.
- Engagement with enterprise.

The purpose of establishing a Centre for Excellence in Teaching and Learning in Employability was to enhance, embed and integrate employability within SHU provision. A bolt-on approach to employability within the curriculum (e.g. special “employability” modules) was eschewed in favour of an integrated and embedded one. This was to be achieved by the design of employability learning outcomes within modules facilitated by appropriate learning and teaching strategies, and integrated within assessment criteria for the demonstration of learning outcomes. In addition, a specific or singular model for integrating and embedding employability was not envisaged; rather, a holistic model that was flexible enough to be customised at the disciplinary and departmental level was preferred, and the Centre for Excellence in Employability would have the mission to engage the University in this way:

“The CETL offers to HE a holistic approach and models for implementation and transfer, using a flexible methodology grounded in a pedagogy of transformation and transfer:

- a conceptualisation and modelling of employability that is holistic, embedded and integrated through complete programmes
- a widening access approach reaching all students through their programmes and their staff
- a model of a University-wide steer clarifying aspects of best practice without prescribing implementation, allowing for the innovation and ownership so important in curriculum change
- a two-pronged change-management model: the use of key University processes to spearhead widespread change; the injection of excitement by supporting innovation in areas of proven excellence and by generating more excellence
- development of the pedagogy of employability through research and evaluation building on nationally- and internationally-renowned practice
- the ability to impact through our capacity to network, collaborate and disseminate.”

(Source: CETL bid document page 7.)

In terms of the modus operandi of the Centre, a number of key aspects were outlined. Four programmes that had been judged as being excellent in terms of integrating and embedding employability features were identified in the initial bid document. Representatives from these programmes would be seconded to the CETL in year one as employability champions. They would work with a number of other representatives from within the university, whose courses had been judged as being “good” in terms of embedding employability features. The aims were to facilitate a movement from “good” to “excellent” status for these programmes, by enhancing the employability dimensions of their curricula during the year, and to mentor and support the new members of the Centre, to become the next set of employability champions. At the end of year one, the original champions were to move out of the Centre, and have their place and role taken over by the new members, who would repeat this process for a further set of volunteers and courses who wished to work in with the Centre. This roll on – roll off process was designed to introduce new members to the Centre over a five year period, encourage academics who had worked in the Centre to return to the faculties to use and spread their knowledge, and progressively increase the number of students who were enrolled upon “excellent” courses in terms of their employability aspects. In addition, Champions would support course validation teams within the university, and encourage employability to be a key concern at the design stage of programmes, with a view to increasing significantly the
number of “good” programmes in terms of employability features. Taken over a five year period, the impact upon programmes and students was predicted to be of large scale, and institutional in scope and dimensions. In terms of change management, the strategy was identified as having both top down facilitation and bottom-up commitment and input, and would utilise the SHU infrastructure to create change within programmes:

(Source: CETL bid document page 16)
The Centre would also be involved in the evaluation of its work using both quantitative and qualitative methodologies, and in the dissemination of its work, both inside SHU and to the wider HE community and stakeholder groups.

**An evaluation of the change model proposed**

This section draws heavily on an internal report by Abbi Flint, Lecturer in Education, Learning and Teaching Institute, SHU (available from the author).

**Type of change** – multiple metaphors were used in the bid document to indicate the nature of change. The type of change envisaged can be seen as cultural development (improvements within an existing cultural framework) as opposed to transformational (step changes in practice and the cultural framework itself; (Bate 1998). As mentioned previously, four excellent courses were identified in the bid document, and the idea was to use these to leverage change across faculties, using the roll on – roll off process of Centre membership, in an incremental manner. Change was to be enacted through existing structures, processes and departmental practices.

**Communication and dissemination** – the Centre had a core team charged with its development and dissemination activities. This was envisaged as fixed and stable, based upon the experts who had contributed to the bid document.

**Membership of wider team** – this was clearly specified as being for two years. The work of Centre members was outlined in the bid document, but there was no discussion of an exit strategy and support for colleagues who would leave the Centre after this period. In addition, new members were nominated by the Heads of Learning, Teaching and Assessment from within the faculties, limiting the possibilities for other colleagues of participating in the activities of the Centre.

**Course planning/validation** – the SHU five yearly course planning cycle is perceived as a key opportunity for engaging course teams with the employability agenda. Whilst the logic of this is apparent, the course planning process is problematical from the point of the widest possible engagement of staff and internal politics of faculties, both of which may act to narrow the possibilities for genuine discussion and deep engagement. In addition, this mechanistic approach to course planning reinforces the notion of developmental as opposed to transformative change.

**Rewards** – to staff involved in the CETL included honoraria, buy-out of time, conference/dissemination support. Members received higher honoraria if they engaged as individuals rather than as teams, which could have acted as a disincentive to collaborative activity.
The language of change – the metaphor of journey is used in the bid document as a way of describing the nature of change envisaged. Useful as this is in terms of denoting movement and progression, it is also circumscribing in terms of future possibilities, and limiting in terms of pre-specifying the nature of movement from A to B. Other metaphors used include horticultural ones (e.g. organic change), and sporting ones (e.g. club atmosphere), and prestige and pride imagery. Such language proposes a certain status for the CETL and the people who work in it, but there is a danger that this can be perceived as elitist and exclusive.

Physical space – the successful bid was rewarded with both revenue and capital funds. The capital monies were targeted at refurbishing part of the SHU estate and badging this as CETL provision. This provided a physical presence for the CETL within the university, but could also have represented a clique, and something which is “other” to the mainstream of the university and to those colleagues not involved in the CETL.

Outputs – tangible outcomes arising from the work of the CETL in the form of tools, products and processes were identified as key outputs from the CETL. Useful as these may well be, this language is rooted in mechanistic notions of organisations which may not sit well with HEIs, and a deficit model of educational provision, where aspects of provision are deemed in need of fixing.

Post bid implementation

During the period between the announcement that the bid had been successful and would be awarded funding, and the time the CETL was to formally start operating (approximately seven months), and early into its actual operation, there were intense discussions within the team about the desirability of the change model proposed, and some of the potential limitations and implications as indicated above. A view emerged for the need to adopt a more organic and inclusive approach to change, one that encouraged transformational change and challenged existing structures and practices, without jettisoning all of the structural mechanisms identified within the bid document. These discussions were informed by debates about the nature of change in HEIs, which has been the subject of significant research and investigation in the recent period. Two sources will be used to introduce relevant issues here.

Commenting upon change in HEIs, Jackson (2005) identifies these as complex adaptive systems (Stacey, 2000) and concludes:

“Those responsible for creating improvement strategies and for supporting improvement have to be aware of, and sympathetic to, the complexity of change and changing. They must be conscious of the way in which social systems like teaching teams and departments self-organise in response to change in ways that are often unpredictable and which might appear illogical to those sitting outside the actual environment in which change is happening. They need to be aware of the inherent paradox and contradictions in the plethora of policies, strategies and support mechanisms that seek improvement and of the nature of learning that emerges through changing. It is necessary for individuals and teams to invent their own wheels in order to understand and take ownership of change to gain improvement. In short, those responsible for promoting and supporting improvement need to be aware that where people work is … the edge of order i.e. somewhere between the world where things make sense from a managerial perspective and the world where anarchy prevails.”
(Jackson, 2005, p.7)

Henkel (2000) undertook an extensive study of how academics and academic identities were affected by externally imposed change in the UK HE sector, and studied the impact of the introduction of the research assessment exercise and teaching quality assessment on academic work and academic identities at a number of levels within HEIs. She identified various strategies adopted by academics to sustain their identities (constituted by academic values, self-perceptions, epistemological assumptions and agendas) in the face of such change including powerful individuals ignoring change, active resistance to change, subversion, overt compliance but with minimal actual response, and working harder to accommodate new demands. She found that a consistent and persistent theme in her research was that academic lives, in the context of change, continued to be focused within the discipline, emphasising the social, and intellectual development of the discipline.

These ideas, and the associated academic literature, were used to inform a revised operating plan and modus operandi in the early stages of the CETL project.

Towards a new approach to implementation

The introduction to the first annual operating plan summarised the revised approach:

“Our philosophy is about engaging with all relevant stakeholders to create a wide ranging and inclusive community of practice around employability activities at SHU, in line with the University’s branding initiative – to create a sector leading focus for employability.”
Special Interest Groups (SIGs) were established, based on the notion of communities of practice, to bring together colleagues from all parts of the university with an associated interest, and to help join-up the work of the CETL, Learning and Teaching Institute and other university LTA initiatives. The following SIGs were established: Learning Technologies; Transitions into HE; Scholarship, Research and Evaluation; Institutional Processes; Career Management and Diversity, Enterprise and Entrepreneurship; Work-based learning; Personal Development Planning. Some of these turned out to be more active than others, but overall they acted as a focus for staff with a similar interest to explore and expand their practice in a collaborative manner; over 100 colleagues were actively involved in the SIGs. The revised strategy of engaging with staff and faculties to further embed employability within the student experience involved a number of elements:

**Communication and positive engagement** with, for example disciplinary subject groups, Heads of LTA and LTA co-ordinators, Student Support Services, Hallam Volunteering (a Student Union run volunteering venture), Course Leaders, Personal Development Planning Co-ordinators, Quality Co-ordinators, etc. to ensure that “employability” was understood and formed part of their thinking/practice within the context of their roles.

**Course Planning and Validation** with course and subject teams – the e3i Core team worked closely with teams who were (re)designing their provision if they requested support and guidance in embedding employability within the curriculum.

**Facilitation of projects, creation of tools and production of resources** e.g. through the SIG network, through inviting bids by faculty members for funds from the CETL to support this type of development work, and through the production of resources by the e3i Core Team.

**Collapsing of boundaries between the CETL, Faculties, Departments and Teams** e.g. two members of the Careers and Employment Service were members of the e3i Core team, which helped to ensure a synthesis of perspectives and expertise in the generation and implementation of ideas and initiatives.

**Evaluating the outcomes of the e3i CETL project**

The project has a five-year duration, completing in August 2010, and had to produce a summative evaluation of its work and impact for HEFCE by the end of March 2010. The evaluation was based upon a variety of sources of data and information (e.g. surveys with course leaders, documentary analysis of course validation documents, evaluation of funded projects and case studies of employability practice, evaluation of student perspectives on employability via interviews and surveys, surveys of alumni), which were synthesised to produce a summative account of the extent to which e3i had met its original objectives. The overall conclusions of this exercise are (project objectives in bold):

1. **Increase the number of courses within SHU that incorporate employability dimensions within their design and delivery.** Summary outcome – fully achieved. The evidence base to support this conclusion is the employability survey results (four iterations of the survey allowing a time series analysis over 6 years), the number of e3i funded projects that have impacted upon the curriculum or LTA practices, and the analysis of course validation documentation, undertaken for the years 2005-6 and 2006-7. The conclusion here is not that all SHU courses have significant employability dimensions as part of their offer, but that the number of courses with such features has increased.

2. **Deepen the impact and imprint of employability within course curricula.** Summary outcome – significantly achieved. This is evidenced by data sources outlined in 1 above, and the fact that SHU courses are now required to describe their employability strategies in detail as part of the validation process. Two informative examples here are in the Sheffield Business School, which revalidated all of its undergraduate programmes in 2006 and created an “Employability Pathway” within each UG course focused on employability skills development, and the programme of career development for sandwich students in the faculty of Arts, Computing, Engineering and Sciences.

3. **Foster and support innovative approaches to employability learning and teaching.** Summary outcome – significantly achieved. The following mechanisms have been used in this context: support/advice/resources for course planners, buy-out time for colleagues involved in innovative employability projects, funding of Assistant Directors of e3i from each of the four faculties who have been charged with encouraging innovation in their local contexts, research support and evaluation for colleagues seeking feedback on employability initiatives.
4. **Support specific and named individuals and projects that are actively involved in innovative approaches to embedding, integrating and enhancing employability within provision.** Summary outcome – **fully achieved.** The e3i CETL was able to allocate a significant proportion of funds for the project to secure this objective.

5. **Support the establishment of employability as a core value of SHU.** Summary outcome – **fully achieved.** Employability has been established as one of 3 core values of the university. The university Employability Framework has been updated. The university’s LTA strategy incorporates employability as a key feature, and this is replicated in faculty LTA strategies. The university corporate plan 2009-2014 identifies employability as a core value/objective of the university, and e3i has supported the work of a task group charged with producing the employability strategy (Core Minimum Entitlement for Employability) for the university going forward.

6. **Disseminate the findings and experiences of activities associated with the work of the CETL both internally within SHU and externally across the national and international HE sector.** Summary outcome – **partially achieved.** The Core team have used workshops and staff development events, newsletters, publications, conferences organised by e3i, conference presentations by e3i staff and the e3i website to achieve this goal. Most successful has been experienced internally and then within the national HE sector, with some exposure internationally (e.g. the staff development work some members of the Core team have undertaken in China), hence the summary outcomes of partially achieved.

**Challenges and constraints along the way**

As to be expected, there have been challenges and constraints which have impacted upon this work. These include:

1. It has been difficult to steer and co-ordinate the variety of issues and initiatives the CETL has been involved with, to coalesce these into a bigger whole, but the e3i core team attempted to resolve this issue by using the SHU Employability Framework as an organising and publicising framework.

2. Communication across the university has not always been straight forward. At times the e3i team had the feeling that some parts of the university felt challenged by the role of the CETL. The core team responded by producing a newsletter that came out 3 times per year, and targeted this in particular at colleagues with management responsibilities. Ad hoc and additional publications were also circulated e.g. a summary of activities and outcomes for 2008-9. There is a view within the CETL team that a more prominent location for the CETL office within the university could have helped with this. Communication outside of the university has been a greater challenge.

3. The University has gone through a significant restructuring during the life time of the CETL (moving from schools to faculties and a new Corporate Plan); this has meant that senior managers and colleagues more generally have had more immediate issues to devote their time to as opposed to employability development work.

4. The e3i team were clear at an early stage that they needed a well developed view of how to evaluate the work of the CETL and the nature of the data that would be required. This was a difficult intellectual exercise, and there was little guidance on this matter in the early stages from HEFCE, but by the time of the interim evaluation the team had a clear idea of the chosen evaluation strategy and framework and collected data systematically to this end.

5. Turnover of CETL staff over the five years has meant that momentum has been lost on occasions, but the response of a quick recruitment of replacements was, on the whole, accomplished.

6. The e3i team experienced resistance to the idea of an Employability Guarantee/Award for students which was proposed, and which was believed would give Sheffield Hallam a “Unique Selling Point” with respect to market position, and a differentiated student experience; however, the team could not convince university senior managers to adopt and support this proposal. Apparently this appeared a somewhat risky venture for the university at a time when it was focused on a new corporate plan and associated internal restructuring.

7. Some resistance was experienced when the e3i team worked with colleagues who had been ‘volunteered’ but did not opt-in to participate in certain initiatives e.g. course development workshops. Some resistance via apathy or opposition was experienced from some colleagues who were ideologically opposed to the employability agenda in HE, or who did not understand or have empathy with the language of employability. The team
responded to the latter resistances in two ways: by establishing employability as a key element of the SHU identity (e.g. by supporting work to make employability one of three brand values for the university) and thereby making this a non-optional issue for colleagues to engage with (e.g. in the context of course validation processes); and by suggesting and demonstrating that employability teaching, learning and assessment need not be at the expense of teaching disciplinary knowledge and skills - that these could be achieved at the same time.

Conclusion

There have been significant positive outcomes associated with the work of the e3i CETL. These are intimately related to the approach to educational change that evolved in the early part of the work of the centre, in the post-bid implementation phase. The e3i core team moved from what was perceived as a mechanistic approach to change, to an organic one, based on an understanding of universities as “loosely-coupled”, “soft” and “complex adaptive systems”, where the identity of key agents (academic staff) is complex, informed by allegiance to their academic discipline and reproduced through individual actions and choices based upon the principles of academic freedom and autonomy. A distillation of the experiences of the project with respect to promoting educational change within universities has produced the following insights:

- Adopting a theory of change relevant to the organisational context to inform practice is crucial;
- Working simultaneously at different levels within the university is beneficial;
- A proactive approach to identifying and working with colleagues with aligned interests within the university helps to create momentum;
- Aligning with and supporting key strategic objectives of the university creates support, sponsorship and legitimacy;
- A focus on course design and validation processes provides opportunities for manifesting change;
- Bold ideas/suggestions for university-wide initiatives help to generate debate, interest and awareness, even if these are not ultimately successful;
- Communication issues prove more complex than anticipated and significant time and attention needs to be devoted to these;
- Eliminating or collapsing boundaries between the project and the everyday work of faculties is beneficial e.g. by seconding faculty into the project team to provide a two way flow of activity and communication;
- It is important to place a heavy emphasis on “hearts and minds” and allow accommodation to proposals and customisation in different disciplinary contexts;
- It is important to demonstrate the impact of any changes made and provide evidence in relation to broader institutional objectives.

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Informing Institutional Inclusive Policy and Practice: Disabled and Nondisabled Student Teaching, Learning and Assessment Experiences

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This working paper presents evidence from a systematic survey of disabled and nondisabled students (N=484) regarding their teaching, learning and assessment experiences within one UK University. This study builds upon previous work in the sector, utilising a research instrument employed by Healey, Bradley, Fuller and Hall (2006). Pursuing this study was not only about compliance to recent changes in United Kingdom disability discrimination legislation to promote equality and diversity. The main aim was to gather evidence to inform the institution’s inclusive policy and practice for the benefit of all students, whether disabled or students with no known disability. The evidence from the survey has not only given the institution information about student views on their teaching, learning and assessment experiences. It has also given the institution insight into disabled student levels of attainment and progression, which, as of yet, has drawn little, if any, attention in the area of disability and higher education. While we believe that the findings will contribute knowledge to the sector, we are confident that it provides the institution with an evidence-base to inform inclusive policy and change for all students.

Keywords: Disability, disabled students, inclusive curricula

Context

There has been much international discussion on the increasing numbers of disabled students entering higher education (Getzel 2008; Hadjikakou & Hartas 2008; Hanafin et al., 2007; Lancaster, Mellard, & Hoffman 2001; Nelson, Dodd, & Smith 1990; Poussu-Olli 1999; Shevlin, Kenny, & McNeela 2004; Wilson, Getzel, & Brown 2000), most notably in the United Kingdom (UK) (see Borland & James 1999; Fuller et al., 2009; Goode, 2007; Holloway, 2001; Madriaga, 2007; Parker, 1999; Riddell, Tinklin, & Wilson, 2005). Since the passage of the Disability Discrimination Act (DDA) (1995) in the UK, there has been work which focused on the disabled student experience in UK universities (Borland & James, 1999; Holloway, 2001; Parker, 1999; Riddell et al., 2005). The latter drew attention to physical access, welfare support, transitions and disabling attitudes in universities. More recent literature has concentrated on teaching, learning and assessment experiences of disabled students to inform inclusive curricula (Adams & Brown, 2006; Freewood & Spriggs, 2003; Fuller et al. 2004; Fuller, Healey, et al., 2004; Hanafin et al., 2007; Jacklin et al., 2007; Madriaga, 2007, Madriaga & Goodley, 2010). The timing of the new literature paralleled prior discussion and subsequent implementation of the most recent amendment DDA (2005). This substantial amendment calls on all public bodies, including higher education institutions (HEIs); to not only eliminate discrimination against disabled people, but to make positive steps to promote equality. It calls for universities to be more culturally diverse and to work towards achieving social justice goals for disabled people. These goals have different dimensions, which include equality of opportunity and equality of cultural recognition (Riddell et al., 2005, p. 641).

While DDA (2005) was aimed to promote equality between disabled and nondisabled people, little work has been done comparing disabled and nondisabled student experiences in HE. Much of the literature has only focused on the disabled student experience with no regard of the nondisabled student experience. Questions revolving around this issue were first confronted during a study conducted by Waterfield et al. (2006) in
England. While discovering that only about a third of disabled student respondents entitled to 'special arrangements' actually received them in assessments, they questioned the consistency and efficacy of special provisions for supporting the assessment of disabled students in higher education (2006, p. 84). In considering the validity of alternative assessments for disabled students, they considered the applicability, possibility and equity of inclusive assessments (ibid). The latter they saw as being suitable for a diverse student population, regardless of disability. While recognising that some students may require an assessment that is quite specific, they sought an assessment toolkit which attempts to reduce discrimination and ghettoisation of disabled students (ibid). For instance, the common UK HEI practice of placing disabled students in separate exam accommodations from nondisabled students perpetuates the ghettoisation of disabled students. It was this knowledge that compelled the authors to eventually include nondisabled students in their study. From this, they found evidence to suggest that there were similar difficulties and experiences shared by both student cohorts in regards to assessment.

More recent work has begun sifting through official national datasets from the Higher Educational Statistical Agency, examining indicators of academic attainment and degree outcomes of disabled students (Pumfrey, 2008; Richardson, 2009). Findings from this work suggest a different account of the disabled student experience as concluded from survey work where expressions of disabled student dissatisfaction is perpetually indicated (Fuller et al., 2004; Healey et al., 2006; Mortimore & Crozier 2006; Waterfield et al., 2006). Findings from the work of Pumfrey (2008) and Richardson (2009) in their analysis of degree outcomes indicate that disabled students have been achieving academic success similar to their nondisabled student peers. According to Pumfrey (2008, p. 44):

> The numbers of students successfully completing their first degrees have increased for all students, for both nondisabled and disabled students. With reference to first-class honours degrees awarded, academic standards appear to have, at the very least, been maintained across time.

Richardson (2009) offered a similar conclusion in his examination of whether disability type predicts the likelihood of a student obtaining a 'good degree' (e.g. a 2.1 or first class degree in the UK). He found that disability only explained 0.10% of the variation in attainment, which is considered to be a small effect size (Cohen, 1988):

> In overall terms, then, disablement per se does not play a significant role in predicting whether an individual student obtains a good degree: provided that they receive appropriate support, students with disabilities are as likely to obtain good degrees as are students with no known disability' (Richardson 2009, p.134).

This conference paper will highlight this phenomenon in our own institution, as it foregrounds disabled student achievement. The methodological approach of the study is explained below, followed by a brief presentation of results.

**Methods**

In order to seek evidence to inform our own institution’s inclusive policy and practice in the background of recent change in disability discrimination legislation, we conducted a survey of disabled and nondisabled student experiences in teaching, learning and assessment. Instead of designing a research instrument, we adapted the same questionnaire employed by Healey et al. (2006) in their Economic Social Research Council Teaching and Learning Research Programme funded project (RES-139-25-0135). Although having utilised many of the same survey questions from their questionnaire, our project did not employ the same methods. Healey et al. (2006) sent out separately-worded questionnaires to disabled and nondisabled students, which emphasised a distinction between the two cohorts. Our project did not replicate this divide and used the same-worded questionnaire for all student respondents. In another departure from Healey et al. (2006) study, we attempted to match samples of students. Fifty percent of full-time undergraduate students who were registered in the institution's central database as having declared a disability or specific learning difficulties were randomly selected. To control as far as possible differences in the intrapersonal characteristics between disabled and nondisabled student groups each of the selected disabled students were matched by subject area studied, age, ethnicity, year of study and gender with two students who were not registered on the database as disabled (668 disabled and 1336 nondisabled). The decision to pair each disabled student with two as opposed to a single nondisabled student was based on the premise that this technique would increase the chances of receiving replies from matched students. From the initial sample of 2004 students, 484 students (24%) returned completed questionnaires.
As a research team, we wanted to address the question of whether disabled students who did not have institutional disability-specific support had a qualitatively different learning experience from those who did. Therefore, we divided survey responses to four cohorts for analysing data: (1) students with no known disability; (2) disabled students with specific disability institutional support; (3) disabled students without disability specific institutional support; and (4) disabled students with specific learning difficulties who have disability specific institutional support. As disabled students had been matched with non-disabled students using the institution's central student database, the research team was able to identify individual students who returned questionnaires. This allowed for examining the academic achievement of survey respondents. An overall end-of-year average mark was created for each respondent using their individual module grades and taking into consideration the module credit weight (see Table 1 for formula). The end-of-year average mark was then entered into the SPSS file with the survey questionnaire data.

### Table 1: Formula for calculating average yearly mark

\[
\frac{(a^1 \cdot a^2) + (b^1 \cdot b^2) + (c^1 \cdot c^2) + \text{repeated n times}}{Z}
\]

- \(a^1\) = mark for module 1
- \(a^2\) = credit weighting for module 1
- \(b^1\) = mark for module 2
- \(b^2\) = credit weighting for module 2
- \(c^1\) = mark for module 3
- \(c^2\) = credit weighting for module 3
- \(n\) = number of modules taken
- \(z\) = the overall amount of credit taken

To enhance our understanding of the structure of the survey results, the research team also conducted a principal component analysis on the 34 five-point Likert scale questions. Prior to performing the analysis, the suitability of data for factor analysis was assessed. The Kaiser-Meyer Oklin value was .813, exceeding the recommended value of .6 (Kaiser, 1970, 1974), and the Bartlett's Test of Sphericity (Bartlett, 1954), reached statistical significance, supporting the factorability of the correlation matrix. Six components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (34 variables x 484 respondents) were extracted.

To aid in the interpretation of these six components or themes, Varimax rotation was performed (see Table 2). The rotated solution explained a total of 57.6% of the variance, with Component 1 (Feedback) contributing 12.67%, Component 2 (Understanding Requirements) contributing 9.66%, Component 3 (Literacy Difficulties) contributing 9.50%, Component 4 (Academic Development) contributing 8.96%, Component 5 (Support for Lecturers) contributing 8.83% and Component 6 (Academic Participation) contributing 7.97%.

In having attempted to utilise matched samples in conducting the survey, researchers were not only given information about disabled and nondisabled student views on their learning experiences. More significantly, researchers were given insight into student levels of attainment and progression, which, as of yet, has drawn little, if any, attention in the area of disability and higher education. While we believe that the findings will contribute knowledge to the sector, we are confident that it provides us with an evidence-base to inform inclusive policy and change for all students at our institution.
Table 2: Varimax rotation of Six Factor Solution for Questionnaire Items

<table>
<thead>
<tr>
<th></th>
<th>Theme 1: Feedback</th>
<th>Theme 2: Understanding Requirements</th>
<th>Theme 3: Literacy Difficulties</th>
<th>Theme 4: Academic Development</th>
<th>Theme 5: Support from Lecturers</th>
<th>Theme 6: Academic Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The feedback on my work helps to clarify things that I haven’t fully understood</td>
<td>0.803</td>
<td>0.126</td>
<td>0.01</td>
<td>0.176</td>
<td>0.048</td>
<td>-0.066</td>
</tr>
<tr>
<td>The feedback on my work helps me to improve my ways of learning and studying</td>
<td>0.795</td>
<td>0.041</td>
<td>-0.003</td>
<td>0.183</td>
<td>0.05</td>
<td>-0.007</td>
</tr>
<tr>
<td>My lectures gave me useful feedback on my progress</td>
<td>0.759</td>
<td>0.138</td>
<td>-0.024</td>
<td>0.078</td>
<td>0.252</td>
<td>0.043</td>
</tr>
<tr>
<td>My lectures normally give me useful comments on my work</td>
<td>0.630</td>
<td>0.212</td>
<td>-0.011</td>
<td>0.129</td>
<td>0.277</td>
<td>0.055</td>
</tr>
<tr>
<td>I sometimes find it difficult to discover what is expected of me in my coursework</td>
<td>-0.077</td>
<td>-0.703</td>
<td>0.118</td>
<td>0.069</td>
<td>-0.072</td>
<td>0.145</td>
</tr>
<tr>
<td>I have experienced some difficulties with coursework because it is not always clear what is required</td>
<td>-0.111</td>
<td>-0.656</td>
<td>0.271</td>
<td>0.045</td>
<td>-0.186</td>
<td>0.236</td>
</tr>
<tr>
<td>It is easy to know the standard of work expected</td>
<td>0.150</td>
<td>0.677</td>
<td>-0.103</td>
<td>0.278</td>
<td>0.126</td>
<td>0.017</td>
</tr>
<tr>
<td>My lectures make it clear, right from the start, what they expect from me</td>
<td>0.253</td>
<td>0.581</td>
<td>-0.041</td>
<td>0.2</td>
<td>0.117</td>
<td>0.026</td>
</tr>
<tr>
<td>I frequently have difficulties in taking notes</td>
<td>0.145</td>
<td>-0.093</td>
<td>0.724</td>
<td>0.058</td>
<td>0.005</td>
<td>0.135</td>
</tr>
<tr>
<td>I sometimes experience difficulties with my literacy skills (spelling, grammar etc)</td>
<td>0.060</td>
<td>0.056</td>
<td>0.66</td>
<td>0.022</td>
<td>-0.107</td>
<td>0.189</td>
</tr>
<tr>
<td>I have problems writing continuously in exams</td>
<td>-0.141</td>
<td>-0.103</td>
<td>0.654</td>
<td>0.033</td>
<td>0.063</td>
<td>0.148</td>
</tr>
<tr>
<td>I have experienced difficulty reading materials because we are not given enough time</td>
<td>-0.074</td>
<td>-0.212</td>
<td>0.603</td>
<td>-0.023</td>
<td>-0.133</td>
<td>0.008</td>
</tr>
<tr>
<td>I have experienced some difficulty with handouts and other materials not being in an appropriate format</td>
<td>-0.062</td>
<td>-0.103</td>
<td>0.58</td>
<td>-0.276</td>
<td>-0.031</td>
<td>-0.013</td>
</tr>
<tr>
<td>As a result of my studies, I feel confident about tackling unfamiliar problems</td>
<td>0.171</td>
<td>0.154</td>
<td>-0.031</td>
<td>0.041</td>
<td>0.002</td>
<td>-0.138</td>
</tr>
<tr>
<td>My course is helping me develop my ability to work as a team member</td>
<td>0.149</td>
<td>-0.011</td>
<td>0.053</td>
<td>0.732</td>
<td>0.017</td>
<td>-0.091</td>
</tr>
<tr>
<td>My course is helping me to develop the ability to plan my own work</td>
<td>0.227</td>
<td>0.166</td>
<td>-0.099</td>
<td>0.629</td>
<td>0.159</td>
<td>0.098</td>
</tr>
<tr>
<td>My lectures have been helpful when I have approached them about difficulties with my studies</td>
<td>0.323</td>
<td>0.15</td>
<td>-0.62</td>
<td>0.002</td>
<td>0.675</td>
<td>-0.002</td>
</tr>
<tr>
<td>The handouts and/or other materials via e-learning technologies are helpful</td>
<td>-0.127</td>
<td>-0.069</td>
<td>-0.083</td>
<td>0.45</td>
<td>0.618</td>
<td>-0.052</td>
</tr>
<tr>
<td>My lectures give me plenty of examples and illustrations to help with my understanding</td>
<td>0.150</td>
<td>0.339</td>
<td>-0.107</td>
<td>0.119</td>
<td>0.61</td>
<td>-0.027</td>
</tr>
<tr>
<td>My lectures make a real effort to understand difficulties I may be having with my work</td>
<td>0.458</td>
<td>0.109</td>
<td>-0.01</td>
<td>0.019</td>
<td>0.583</td>
<td>-0.094</td>
</tr>
<tr>
<td>My lectures are good at explaining things in a number of different ways</td>
<td>0.397</td>
<td>0.171</td>
<td>-0.102</td>
<td>0.242</td>
<td>0.439</td>
<td>-0.002</td>
</tr>
<tr>
<td>I have had some difficulties when giving oral presentations</td>
<td>-0.002</td>
<td>-0.05</td>
<td>0.152</td>
<td>-0.041</td>
<td>-0.01</td>
<td>0.195</td>
</tr>
<tr>
<td>I frequently find it difficult participating in discussions</td>
<td>0.067</td>
<td>-0.081</td>
<td>0.134</td>
<td>0.044</td>
<td>-0.17</td>
<td>0.729</td>
</tr>
<tr>
<td>I have had some difficulties with participating in assessed group work</td>
<td>-0.122</td>
<td>-0.085</td>
<td>0.129</td>
<td>-0.155</td>
<td>0.062</td>
<td>0.726</td>
</tr>
</tbody>
</table>

% of Variance explained

|                  | 12.67% | 9.66% | 9.30% | 8.90% | 8.83% | 7.97% |

Sub-theme C: Institutional Policies and Professional Development
Findings

Having reduced questionnaire statements into themes (as indicated along top row of Table 2), and rating them by mean scores, the research team was able to employ a one-way analysis of variance (ANOVA) to explore any significant differences between different cohorts of students according to disability status: (1) students with no known disability; (2) disabled students with specific institutional support; (3) disabled students without specific institutional support; and (4) disabled students with specific learning difficulties (such as dyslexia) who have specific institutional support. Significant differences were only found in mean scores for the theme of Literacy Difficulties according to disability status \( F (3,468) = 50.06; p<.001 \). Tukey’s post hoc test revealed that the mean rating for disabled students with specific learning difficulties who have disability specific institutional support \( n=70 \) was significantly greater than the mean ratings for the other three groups. Disabled students without support \( n=51 \) had the next highest mean rating, which was significantly greater than the mean rating for students with no known disability \( n=313 \), but did not significantly differ from mean ratings for disabled students without support \( n=50 \). There was no significant difference in the mean ratings for students with no known disability and disabled students without support (see Table 3).

<table>
<thead>
<tr>
<th>Table 3: Mean ratings for literacy difficulties (1 = strongly disagree, 5 = strongly agree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students with no known disability</td>
</tr>
<tr>
<td>2.54</td>
</tr>
</tbody>
</table>

These results indicate that students with learning difficulties with university disability support report experiencing the most literacy difficulties. Students who have declared a disability but do not have university support report experiencing lesser difficulties than students with university support for specific learning difficulties, but do not differ from disabled students who have support or from students who have not declared a disability. However, even within the groups who report experiencing the least difficulties, the mean ratings at 2.54 and 2.72 suggests that there are some students in these groups who have indicated experiencing literacy difficulties.

As stated earlier, an average mark was created for each student in the sample using individual module marks and taking into consideration the module credit weight (refer to Table 2 for formula). With this average mark data, an independent samples t-test was first conducted to explore the impact of disability status on achievement. Students were initially divided according to known disability. Students with no known disability \( \text{mean} = 59.27, \text{SD} = 8.60 \) scored significantly higher than disabled students \( \text{mean} = 56.40, \text{SD} = 10.47 \) in terms of their average mark scores \( t [442] = -3.112, p = .002 \). Achievement results were then divided according to disability status and having disability specific university support, as carried out earlier: (1) students with no known disability; (2) disabled students with disability specific institutional support; (3) disabled students without disability specific institutional support; and (4) disabled students with specific learning difficulties who have disability specific institutional support (see Table 4).
Table 4: Disability Status and Average Mark

<table>
<thead>
<tr>
<th>Disability Status</th>
<th>Average Mark</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>No known disability</td>
<td>59.35*</td>
<td>313</td>
</tr>
<tr>
<td>Disabled with support</td>
<td>57.67</td>
<td>51</td>
</tr>
<tr>
<td>SLDs with support</td>
<td>56.45</td>
<td>70</td>
</tr>
<tr>
<td>Declared disability or SLD with no support</td>
<td>54.22*</td>
<td>50</td>
</tr>
</tbody>
</table>

*Univariate ANOVA (p<.05)

The application of a one-way ANOVA test to the data reported a significant difference at the p<.05 level in average mark for the four disability groups (F(3, 440) = 4.827, p = .003), which the application of a Tukey’s post hoc test showed to be between the students with no known disability (mean = 59.35) and those who declared disability but had no disability institutional support (mean = 54.22). There were no significant differences between the other groups. This could be understood that receiving university specific disability support makes a positive impact in achieving academic success as the students who received university specific disability support, with or without specific learning difficulties, did not differ from the no declared disability group. This finding stands in contrast to previous evidence showing that disabled students, specifically those with dyslexia, encounter difficulties in academic performance (Richardson and Wydell 2003). Perhaps, more importantly, the finding draws attention to disabled students who do not currently receive university support. The academic underperformance of these students is of particular concern in terms of their achievement and retention.

Concluding thoughts

Working towards an inclusive practice agenda should not be mistaken as a disability support agenda. Inclusive practice seeks out to address and eliminate inequalities in student learning and assessment. With this awareness, the research team did not want to only examine the disabled student experience. The findings presented in this paper offer institutional evidence to suggest that all students may benefit from an inclusive agenda. The evidence has shown that there is no significant difference in academic performance between disabled students who have specific institutional disability support and students with no known disability, despite the former expressing more difficulties with their literacy skills. Another significant finding was that those disabled students who do not have disability support perform less well than students with no known disability. It is this latter finding which is of concern, providing support for the call of more inclusivity in our classrooms that goes beyond distinctions between disabled students and students with no known disability.

There is awareness throughout the sector, particularly amongst staff within the institution of study, that expectations and requirements of potential students will become more extensive and complex. The institution seeks to further its commitment towards ensuring inclusivity for all its students, as it builds upon its reputation in combining widening participation with high rates of student progression. The evidence from this study is currently being used to inform and achieve this end.

References


The International Student Experience: Students from Malaysia Studying for a Degree in the UK

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All students, wherever they are from, face new and challenging experiences when they embark upon a university programme. They have possibly left home for the first time, they are living in an unfamiliar town or city, meeting new people and having to cope with academic work which may be unfamiliar to them. But students from overseas encounter something more: not only are they living in a strange and foreign environment, but also they have to use a language which is not their first, to communicate with others, both socially and academically. This is one of the reasons why they require additional support and guidance: so that they are able to complete their studies successfully. This paper aims to understand the perceptions of one group of international students (from Malaysia) who were studying at Liverpool John Moores University. It is based on a research which took place during one of the summer programmes, BA (Hons) Mass Communications, in 2009. Over the fourteen weeks of their course, students were asked to use diaries to record their views and experiences of studying in the UK. From these findings, I hope to understand how academic and non-academic staff can provide a suitable teaching and learning environment, and give further support to these students. To put this in context, I will also outline the support systems which are currently in place at the university.

Keywords: Summer school, international students, support, guidance

Introduction

Since 2002, Liverpool John Moores University (LJMU), has been offering a number of BA programmes to Asian students (mainly to students at Tunku Abdul Rahman (TAR) College), all of which have been delivered in the summer semester. This paper is based on a research which took place in 2009, during one of these summer programmes, the BA (Hons) Mass Communications programme. It aims to understand the international students’ (and in particular, the Malaysian students’) perceptions of studying in the UK. From the findings I hope to answer the following questions: how do Malaysian students feel about studying in the UK and what support can institutions provide to help them gain academic success.

Context: The Summer Programme (BA (Hons) Mass Communications Programme)

The BA (Hons) Mass Communications programme is a 120-credit summer programme, available to holders of the TAR College Advanced Diploma in Mass Communications. The programme is delivered through a combination of Malaysia-based teaching (2 weeks of lectures and workshops), e-Learning (6 weeks, through the use of Blackboard), and Liverpool-based teaching (full-time attendance for 14 weeks). Delivery and assessment of the 120 LJMU credits is currently undertaken by LJMU staff, and moderated by two UK-based external examiners. The BA (Hons) Mass Communications programme is taught in the School of Humanities and Social Science.

The BA (Hons) Mass Communications programme builds on the six routes of the TAR College Advanced Diploma in Mass Communication Programme (Media Studies, Public Relations, Journalism Studies, Broadcast

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6 The programmes that are currently delivered in the summer semester are: Mass Communications; Digital Media; Commerce; Tourism, Leisure & Hospitality; Chemistry and Biology; Computers & Information Systems; Building Contract Management; Human Psychology; Quality Surveying Studies; Micro Electronics; Electronics & Control Systems; Engineering and Mechanical & Manufacturing Engineering.
Communication, Advertising, Graphic Design). Eight LJMU modules take up material delivered in the core elements of the above six routes, and extend the learning experience of the TAR College Advanced Diploma. The LJMU modules provide students with the opportunity to broaden their knowledge of the subject area in a critically reflective manner, and to engage in independent research. In general, the BA (Hons) Mass Communications programme builds upon what is felt to be the ‘intermediate level’ subject knowledge and skills (as defined in the Quality Assurance Agency framework for Higher Education Qualifications, UK).

**Literature Review**

Research carried out by Furnham (1997), on the experience of being an overseas student, shows that for some, studying abroad can be so enriching that they may not want to return home, but continue living in the country where they have been studying. However, Furnham also points out that for others, studying abroad can be an unpleasant experience, leading to feelings of rejection and isolation. He highlighted some of the problems faced by international students: language problems, loneliness, financial stress, racial discrimination and academic problems associated with higher educational study. Brown (2007) looking at the challenges facing supervisors involved in supervising international students discussed similar problems. Brown discussed the central problems of time pressure, language difficulties, a lack of critical analysis and a prevalence of personal problems among international students. Furnham also studies the concept the culture shock, claiming that most international students will be likely to experience culture shock one way or another. The culture shock concept: “implies that the experience of visiting or living in a new culture is an unpleasant surprise or shock, partly because it is unexpected, and partly because it may lead to a negative evaluation of one’s own and /or the other culture” (Furnham, 1997:14). Drawing from an anthropologist Oberg (1960) understanding of culture shock, Furnham points out the six aspects of culture shock:

- Strain due to the effort required to make psychological adaptations.
- A sense of loss and feelings of deprivation in regard to friends, status, profession, and possessions.
- Being rejected by and/or rejecting members of a new culture.
- Confusion in role, role expectations, values, feeling and self-identity.
- Surprise, anxiety, even disgust and indignation after becoming aware of cultural differences.
- Feelings of impotence due to not being able to cope with the new environment.

Furnham highlighted that “culture shock is seen as a temporary stress reaction where salient psychological and physical rewards are generally uncertain, and hence difficult to control or predict” (ibid:16). Thus, he believes that the exposure to new culture is stressful and feels that language for international students could add to further to the stress. Furnham also looks at why and how international students experience loneliness. He explains that homesickness may affect, most importantly, a student’s academic performance. He suggests that homesickness occurs both in male and female students but: “female students were more likely to discuss their feelings with others and to respond by being more affiliative” (ibid: 18). Furnham argues that even the strongest student can suffer culture shock and homesickness. He advises institutions to recognise the symptoms of culture shock and homesickness at a early stage.

**Methodology**

International students from Asia are often considered to be passive students. In other words, it has been observed that, in comparison to other students, they tend not to express their emotions or feelings to authority figures (especially to tutors from non-Asian cultures). It was because of this that I decided to set the students the task of writing a diary on their learning experience in the UK, thus allowing me to understand how they really feel about studying in a foreign country. Upon the student’s arrival (in June 2009), I outlined the main purpose of the project. After that, the students were asked to volunteer to take part in the project. Those who decided to take part were given a notebook in which to record their thoughts and feelings from the day they arrived in the UK until the end of the programme (in September 2009). They were advised that they should be creative in expressing their thoughts and feelings. In other words, they did not have to limit themselves to words, but could also use other forms of expression – such as shapes, pictures and so on.

The aim of this project was to allow students to reflect on their learning experience. I needed to listen to the students’ own voices, produced and written in their own time and space. They were, however, reminded that
their main priority should still be on their academic performance and not on writing the diary. At all times, advice was provided and care was taken to avoid pain or stress for the students. Although the students were asked to write the diary everyday, it was pointed out that it was not compulsory for them to do so, and they could decide not to continue to write the diary at any point. Students were informed that if they were not able to complete or submit their diary at the end of the programme, it would not reflect on my perception of their attitude to learning or grades. This was felt to be an example of the good practice of researchers and educators to ensure that students remain happy and willing to be involved in the research process, with no pressures or stress of any kind (France, 2004). For the protection of the students involved, the diaries were anonymous and were destroyed after completion of this paper. In addition, by keeping the diaries anonymous, and making sure that the students were aware of this, meant that they were more open to being honest and truthful about their feelings and views. As the programme leader for BA (Hons) Mass Communications as well as the researcher for this project, I did not want the students to feel any conflict about having to give the ‘right’ answers, so as not to offend me or feel intimidated in any way about writing the diary.

Twenty-five notebooks were given out and at the end of the programme twenty-one notebooks were returned. The diaries were numbered – Student 1, Student 2 etc. Once I had studied the diaries, I highlighted specific phrases and grouped them into specific topics such as, teaching staff/styles, cultural and social activities, work load, homesickness and reading and study time. I was also looking for indicators of where additional support or improvement was required on the programme.

Findings

Four themes emerged from the data: the transition from a college to a university; teaching styles in the UK; meeting the expectations of parents; cultural differences. I will now look at the students’ journals to evidence the themes.

The transition from a College to a University

I guess I wasn't too much of a “homie” kinda person. I love my parents; my family but I think being out here, living independently, is probably something I sought for deep down. [Student 1]

In this one week period, I’ve learnt to be independent, not to say that I’m not independent usually when in Malaysia, but really learnt alot about taking care of myself without family’s aside. I used to stay with parents since I was born, I felt that I am living too good with family’s protection until I am here. I was lived in the shelter and been given the best from parents that they could. [Student 6]

Goodness... have a lot to read...how can I ever finish reading. Suddenly the feeling of fear that I cannot cope the assignments hit me...makes me really scared. [Student 15]

The teaching styles in the UK

The slang of the lecturer made me hardly to understand in lectures some times. I am trying my best to understand the lecturer by paying more attention. In the seminar class, the lecturer was friendly and apologetic to us for his slang. The lecturer then speaks slowly in the seminar. [Student 10]

[Lecturer name] had us do presentations in the seminar for not doing our readings. Well, I suppose we deserve it. Different country, different system, different methods. Better get used to it. Even so, the learning environment is still more relaxed than back home. [Student 3]

Classes started and had to adopt to the different styles and ways of teaching 45 minutes for lectures and 1 1/2 hours of seminars. Thought was awesome because it doenst feel draggly. [Student 5]

Meeting the expectations of parents

Early morning started to rain making me feel like skipping lesson, but I’ll definitely attend the lecture and seminar even though heavy rain, cooling wind as I come to UK to prove myself and my family that I’m here to get my degree, not for VACATION. [Student 8]

Some students wrote that writing the diary allowed them to express their homesickness. Others commented that writing helped to reduce some stress from their assignments.
I also don’t know how I facing my family and my girlfriend. They put much hope on me. ...I hope my work wont give [Lecturer name], my parent feel disappointed!! Work hard!! yes, you can make it!! [Student 21]

I feel I need to do well because I dont want to waste my dad’s money on a Third class degree. I want to do well for my parents. [Student 17]

**Cultural Differences**

I went to [name of a shop] today to order fish and chips. My first time and I was really pissed at the way the waitress attended to me. I ordered ‘Lobster Pot fish n chips’ and the waitress was like ???. So she asked her boss. Her boss said to her ‘Fish and Chips’. The waitress got me the fish and chips and sarcastically - “Here you go, your ‘Lobster Pot fish n chips’.” Honestly, I was intimidated by her. [Student 11]

At night decided to take a stroll down to town to checkout how’s everything like on a Saturday night at pubs and clubs. CULTURE SHOCK!! A culture I’ve not seen. Sad to see such stuff going on and the amount of people are drinking so much. Salute the police for being so efficient. [Student 5]

I noticed two men holding hands on the streets and suddenly kiss in the middle of the road! This is something new to me, where I can never see this in Malaysia. I am not discriminating for being gay but it is like the gay culture is around here and show that this society adding more and more different genres culture [Student 16].

**Discussion**

According to Brown (2007) “For international students, much stress is caused at the start of their stay by the differences between the academic conventions of the student’s origin country and those of the UK” (p 240). International students are placed under pressure in achieving good results, meeting the expectations (in some cases high expectations) from parents back home which add to further stress in addition to attempt to settle in a foreign country. The aim of such support and guidance is to minimise the stress of studying abroad for the first time. By showing the students who they can approach for help, or by providing sufficient information for them to embark on a learning journey, it will help to build their confidence and to complete their degree successfully. As Wallance (1999) puts it: “students who are better prepared – that is, who know how to ask for help and use the support opportunities – are more likely to complete their courses” (p 176). What kind of support can institutions provide to international students studying in the UK? The international student’s induction should start before they arrive in the UK, to ensure that the students are given the correct information and support needed at this stage. At LJMU the Collaborative Partnerships Support Officer works closely with the head of the Collaborative Partnership and the academic staff from all faculties involved in the Summer Semester programmes in co-ordinating the non-academic schedule of the programme. This includes arranging student accommodation, organising the arrival weekend (the induction event when the students arrive in the UK) and the end of programme social event. The officer also ensures that the information on the Summer Semester website is updated and is responsible for disseminating information to students via the yahoo email group and ensuring students queries are answered immediately and tactfully. Upon arrival, two inductions are organised for the students, a general induction and a School induction. In these inductions, students are briefed on British culture, learning paradigms and university resources. In addition two staff-student meetings (in June and August) are arranged where student representatives from each of the programmes meet with the programme leaders to share their views on their experiences of their stay. Their feedback is taken into consideration and, if necessary, appropriate actions are taken. The Student Union gets involved by organising a series of social events giving students the opportunity to travel around the UK and participate in cultural events during the summer. The quality of such support and guidance “relates strongly to the quality of the learning experience” (Wallace, 1999:177).

Different teaching styles and unfamiliar language can be problematic for some Malaysian students. Differences in vocabulary, sentence structure and pronunciation can lead to some students being misunderstood. For some students understanding the tutors and adapting to the different teaching styles can take a considerable amount of time. This can lead to a deterioration of self-confidence and add to the feeling being left out in the class – ultimately it can result in poor academic performance. Similarly, Roberstone et al. (2000) study, also suggests that students reported that difficulties with the language prevented participation in classes. There is no doubt that some students do make an effort and show a real desire to improve their language and get used to the new

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As soon as they arrive in Liverpool, student Representatives are appointed by their classmates and provided with relevant training by the Student Union.
learning styles, as in the case of Student 3. It is vital that the University should provide ongoing English language classes for international students. This will inevitably assist students, and tutors, in developing learning capabilities. The School of Humanities and Social Science at LJMU has appointed a Lecturer in Writing Skills to provide support to international students. Drop-in sessions are available during the summer to advise students on their writing skills. In addition, a number of study skills workshops are arranged for students throughout the summer to learn more about the teaching styles and academic practice in the UK. Tutors can also play a major role in helping students to adapt to the new learning environment. First and foremost, they must aim to understand the student’s background and be sensitive to their learning abilities. Therefore, as Carroll and Ryan (2005) suggested, institutions should consider well run workshops aimed at enhancing knowledge of teaching international students.

Mohammed (1997) pointed out that levels of achievement, motivation, stress and adaptation to different learning styles are all indicators of appropriate counselling techniques and approaches to international students, and particularly to those from South East Asia. He argues that not providing proper counselling support for these students may lead them to shy away from social interactions and allow them to feel homesick and inadequate – for not being able to meet the expectations of their parents and loved ones back home. Academic tutors teaching on the programme are not always in a position to provide such support. They may provide, to some extent, some motivation and encouragement, but these students require constructive advice and counselling from a non-academic member of staff who can distance himself/herself from the student’s academic performance.

**Conclusion**

LJMU has established a very successful and unique summer programme. LJMU aims to provide these students with the academic support and training that will result in them becoming good ambassadors for LJMU in their home country. Measures are constantly being put into place to ensure that they receive the experience they deserve and which will enable them to improve their lives, especially when they embark upon their careers. Further research is required to understand more about the expectations and needs of the students, studying for a UK degree on an intensive one semester summer course. For example, what kind of support can institutions provide to tutors teaching international students on the summer programme? What are the new challenges an institution may face to maintain the quality of teaching when running a summer programme? How can academic bodies play a role in assisting institutions establishing summer schools or in recruiting international students? If institutions are willing to welcome international students, they should be prepared to provide adequate support and guidance so that the students return home with not just a degree but also a positive, life-changing experience.

**References**


This presentation will outline a series of planned developments that have taken place over recent years within Edinburgh Napier University to enhance graduate employability. These include the development of a University Employability Skills and Attributes Model and mechanisms in place at programme and module level. University strategies will be discussed along with a review of current evidence, from the UK and international sources, together with our innovative co-curricular modules and the embedding of employability skills within the University module descriptor template.

Keywords: Employability, student choice, graduate outcomes, transferable skills, generic skills, core skills

Introduction

Edinburgh Napier University has one of the best graduate employment records of all UK Universities, with the Higher Education Statistics Agency (HESA) data consistently indicating a top ten position over the last few years. Many of its programmes are relevant to the ‘world of work’, examples include nursing, midwifery, journalism, media studies, accounting and law. This paper sets out strategies employed within the University to continue to enhance graduate employability and to facilitate integrated learning and assessment of employability skills. The University Employability Skills and Attributes Model and mechanisms in place at programme and module level will be explored in the context of current evidence.

Different terms are used to describe ‘employability skills’ and these include generic skills, attributes, abilities or competencies, transferable skills, core skills, key skills, soft skills and underpinning skills (Pukelis & Pileičikienė, 2009). Barrie and his colleagues at the University of Sydney, Australia developed the concept of ‘generic graduate attributes’, which emerged through research following its ‘Statement of generic attributes’ (2004). More recently, Gunn et al. (2010) in the UK and further afield in Australia, Barrie (2006) emphasise the increasing consideration given to ‘Generic Graduate Attributes’ particularly within undergraduate programmes. Despite increasing general acceptance of the value and importance of ‘employability skills’, debate about their nature and desirability within Higher Education continues (Bridgstock, 2009; Green et al, 2009). These Australian educationalists also highlight the importance of adopting a university-wide approach to development and successful implementation of these skills.

For the purposes of this paper, it is taken that employability skills are considered to be incorporated within the graduate attributes agenda. To further set the scene, it is useful to consider the following statement from Europe, specifically Lithuania: ‘There is no debating that a major responsibility for the smooth integration of graduates into professional life, and hence into society, lies with higher education institutions’ (Pukelis et al., 2007).

Edinburgh Napier University Core Values

The importance that the University attaches to employability is evident in the Vision, Mission & Values section of its most recent University Strategy in which it aspires to ‘have an international reputation for the employability of our graduates’ and ‘for expertise which can be used directly to enhance the lives and prospects of people and their communities’ (Edinburgh Napier University, 2009a). This is reflected in the second strategic objective which is ‘to develop confident employable graduates’ and expanded further with the following: ‘We will enhance our reputation and track record for delivering high quality, professionally orientated programmes linked to high levels of graduate employment. We will continue to develop our curriculum with a strong
emphasis on creating a learning environment which maximises the employability of individuals and develops graduates who are the first choice of employers.’

The Edinburgh Napier University Academic Strategy (2009b, p. 4) sets out the characteristics of the University ‘academic signature’ to be embedded within its programmes. The first two of these are [programmes that will]:

- have an applied, professional or vocational focus which contributes directly to employability
- respond directly to the key principles of the University’s Learning, Teaching & Assessment Strategy (2008).’

The three aims of the Edinburgh Napier University Strategy for Learning, Teaching & Assessment (2008) are:

a) to develop confident individuals with high quality achievements, skills and attributes that are valued by students, employers, the sector and the community;

b) to create inspiring, challenging and effective learning, by valuing teaching, research, scholarly activity and partnership as complementary and fundamental;

c) to strengthen [Edinburgh] Napier’s reputation for providing high quality learning that is student focused and flexible and that enhances students’ employability

It can be seen that the overarching strategic University documents contain and cascade employability as a value which is then translated into the operational documents that direct programme and module design which will considered shortly.

**The Edinburgh Napier University Employability Skills and Attributes Model**

This model (Figure 1) was developed by a Working Party with cross-university representation in 2000. Four groups of skills were identified: key skills, personal qualities, traditional intellectual skills and understanding of how organisations work. Within each ‘skill group’ a subset of exemplar attributes was provided. Traditional intellectual skills were considered to encompass the abilities to critically evaluate evidence, to argue logically, apply theory to practice and to challenge assumptions. Key skills included study skills, time management, written and oral communication, numeracy skills (as appropriate to the subjects of study), information and communication technology, problem solving and the ability to work with other people. It was understood that certain ‘Personal qualities’ also required development, for example self-motivation and self-reliance, personal adaptability, awareness of personal values and a certain amount of commonsense and creativity. The fourth employability skill set is to develop an ‘Understanding of how organisations work’ and that this requires knowledge of working practices, recognition of organisational culture and awareness of professional behaviour. It should be recognised that these are indicative skills and that others are also important especially in specific disciplines and professions. Finally, reflection is placed at the centre of the model to acknowledge its effectiveness as a mechanism that can effectively draw the skills at the corners together. Reflection which is facilitated initially by teachers and becomes more student led as the programme progresses, is seen as the central piece of the jigsaw of employability skills. In 2006, ‘Personal and professional development planning’ was added into the model to demonstrate the importance of reflection as a vehicle for facilitating development of personal and professional learning skills.

Programmes are encouraged to adopt varied learning, teaching and assessment strategies to maximise opportunities for practice followed by summative assessment of a wide range of employability skills that complement ‘traditional intellectual skills’ and traditional assessment methods. Programmes are encouraged to include practice or work-based assessment where possible.

The introduction of the new model was incremental and employed a strategy described since then by Knight and Yorke (2004) as a tuning approach which utilises a relatively small set of changes compatible with established practice and does not need learning of a new set of teaching practices by academics. The tuning approach is not dependent on new resources but relies instead on ‘tuning’ the existing curriculum and encouraging a culture which sees employability as ‘normal’ within curricula. This approach has been formalised into institutional culture more recently through aspects of programme and module design which are discussed in the next sections.

At the time of writing, the Edinburgh Napier Model is under review and a revised draft has been prepared (Figure 1) although early discussion suggests its currency remains largely relevant. Figure 1 shows that changes largely reflect updating of the original features and attributes in line with contemporary developments and terminology.
The Confederation of British Industry (CBI) and Universities UK (2009) recently identified employability skills as including self-management, team-working, business and customer awareness, problem-solving, communication and literacy, application of numeracy and application of information technology. This paper states that all these skills require personal motivation and that, additionally, many employers are looking for an entrepreneurial or enterprising approach in their employees. These findings support the continuing validity of the main components of the Edinburgh Napier Employability Skills and Attributes Model.

The emergence and establishment of co-curricular modules

The University decided to change the modular system from 15- to 20-credit modules with effect from academic session 2008-2009. This provided an opportunity to review programmes, their constituent modules and the supporting documentation in their entirety. One innovation at that time was the introduction of co-curricular modules. The term ‘co-curricular’ is used to define modules which are not discipline-specific and which reflect the broad aims and mission of the University in areas such as entrepreneurship, employability, student involvement and other activities which increase the social capital of students.

The underpinning principles and philosophy of co-curricular modules were laid out within The 20 Credit Handbook (Edinburgh Napier University, 2007, p. 5), which stated that as part of their design, programmes would have within them provision for ‘a set of approved co-curricular modules which will become a part of the option pool for every undergraduate programme in the University’.

Their purpose was to encourage student choice and further guidance to staff was provided:

‘... the option pools are specific to each programme... from which students will make a personal choice. Whilst they may ask for advice, the final choice is theirs... However, what you include in the pool will be a message from you to your students about the suitability of options and a further guide to them as they exercise their choices. In this context, you may wish to consider whether there are any specific co-curricular modules to which you would wish to guide your students or, where appropriate, whether there are any such modules which would benefit students if included in the compulsory or core element of your programme.’ (Edinburgh Napier University, 2007, p. 17). This provided a reminder to staff of their role in making the ‘hidden curriculum’ explicit to their students.
Edinburgh Napier University reaffirmed the value of co-curricular modules as an integral component of undergraduate programmes in its *Academic Strategy 2009 – 2015* (2009b). Co-curricular modules embody what the University has defined within its ‘academic signature’ as a ‘commitment to the principle of student choice’, ‘contributing directly to employability’ and to ‘develop students’ social capital’.

Around twenty co-curricular modules have been approved and delivered to date (Table 1).

**Table 1. Co-curricular modules delivered**

<table>
<thead>
<tr>
<th>Trimester 1</th>
<th>Trimester 2</th>
<th>Trimester 3</th>
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</thead>
<tbody>
<tr>
<td>Module title</td>
<td>Module title</td>
<td>Module title</td>
</tr>
<tr>
<td>Business skills portfolio</td>
<td>Introduction to the web</td>
<td>Creativity, innovation &amp; enterprise</td>
</tr>
<tr>
<td>Effective learning and career development</td>
<td>International travel, study and work</td>
<td>International entrepreneurship exchange</td>
</tr>
<tr>
<td>Sustaining people, planet profit</td>
<td>Communication skills for student representatives</td>
<td></td>
</tr>
<tr>
<td>Starting a new business</td>
<td>Introduction to French</td>
<td></td>
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<tr>
<td>Developing skills from part-time employment</td>
<td>Introduction to German</td>
<td></td>
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<tr>
<td>Personal investment &amp; portfolio planning</td>
<td>Introduction to Italy and Italian</td>
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<tr>
<td>Creativity, innovation &amp; enterprise</td>
<td>Introduction to Spanish</td>
<td></td>
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<tr>
<td>International exchange entrepreneurship exchange</td>
<td>Planning personal finance</td>
<td></td>
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<tr>
<td>Volunteering and employability</td>
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<tr>
<td>Information, communication and society</td>
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<tr>
<td>Launching your graduate career</td>
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<tr>
<td>Effective learner and career development</td>
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<td>Developing skills from part time employment</td>
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<td>Personal investment &amp; portfolio planning</td>
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<td>Sustaining people, planet profit</td>
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<td>Starting a new business</td>
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<td>Creativity, innovation &amp; enterprise</td>
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<td>International entrepreneurship exchange</td>
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An Edinburgh Napier market research survey of on-campus undergraduate students into co-curricular modules was undertaken in late 2009. A short online quantitative questionnaire was devised and 175 students participated. The response rate was low (around 5%), but was reported to be typical of this type and length of student survey and sufficient to investigate the key questions posed. Respondents almost equally represented each year of study (from year 1 onwards: 26%, 22%, 28%, 23% respectively) and all three Faculties (FECCI 32%, The Business School 33%, HLSS 31%, Other 3% respectively). The data reveals that, of those completing the survey, one third (33%) were aware of the term ‘co-curricular module’ prior to taking part in the research (Knew the term 33%; Do not know the term 53%; Not sure 14%). The majority had never selected a co-curricular module (61%) and students’ awareness of how to find additional information about co-curricular modules was low (19%). A plan has been put in place to facilitate increased student and staff awareness of co-curricular modules over the next academic year.

It was pleasing to learn that when respondents were asked to rate the appeal of co-curricular modules from the existing catalogue, the most appealing modules related to career development and employability. When students were asked about alternative terms to describe co-curricular modules, suggestions were mainly focused around the idea of ‘additional skills’, continuing development and increasing employability. This was reflected in the
perceived benefits of these modules, namely to improve students’ employability and to widen their skill base by choosing a module which complements the main subject area of their programme. It is pleasing to find that, for those students who are aware of co-curricular modules, their perceptions of their value is congruent with the Edinburgh Napier vision even though dissemination of knowledge about them within the undergraduate on-campus student population is limited.

**Employability skills as an aspect of module design**

As mentioned earlier, new modular programmes were introduced in 2008. This saw the development of a new module descriptor template, which reflects contemporary University values. The Section containing the Learning, Teaching and Assessment Approach (Box 1) includes within it specific mention of employability skills along with other areas of current University importance. Completion of every section of the descriptor is mandatory which requires each module leader to consider ways in which their module will contribute to enhancement of graduate employability skills. Descriptors must have been peer reviewed by a suitably qualified external peer appointed by the School and any comments responded to prior to their approval. This has resulted in an increased focus on employability skills across the University and makes acquisition of these skills explicit to students through the module descriptors.

Box 1. Extract from the Edinburgh Napier University 20-Credit Module Descriptor (2008)

<table>
<thead>
<tr>
<th>Section 16. LTA approach</th>
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<tbody>
<tr>
<td>Learning &amp; teaching methods including their alignment to LOs</td>
</tr>
<tr>
<td>Embedding of employability/PDP/scholarship skills</td>
</tr>
<tr>
<td>Assessment (formative and summative)</td>
</tr>
<tr>
<td>Research/teaching linkages</td>
</tr>
<tr>
<td>Supporting equality and diversity</td>
</tr>
<tr>
<td>Internationalisation</td>
</tr>
</tbody>
</table>

**Conclusion**

As stated at the beginning of the presentation, Edinburgh Napier University has one of the best graduate employment records in UK universities. The institution has moved from a ‘tuning approach’ to adoption of employability as a University value expressed in writing within the strategic documentation that underpins delivery of employability skills in every module. Since devising its Student Employability Skills and Attributes model in 2000, the model is being reviewed and employability skills are now made explicit in every module. Programmes contain co-curricular modules as student options, which have embedded within them employability skills and attributes that are of specific interest to the students who choose to take them.

Later this year the survey of students’ perceptions and attitudes towards co-curricular modules will be repeated to evaluate progress with the growing emphasis on making graduate employability explicit within the University. Another action for the future is to encourage students to maintain a portfolio of evidence of the employability skills they have developed from the co-curricular and other modules they have taken so that they can articulate these clearly to prospective employers.
References


Knowledge sharing is perceived to be crucial for many contemporary organisations, specifically for knowledge oriented organisation such as university. Knowledge sharing includes both donating and collecting knowledge. Effective knowledge sharing would allow academics to enhance job performance such as teaching, scholarly research and consultancy work. In order to achieve effective knowledge sharing, a suitable organisational climate is important. From the past research, a climate of top management support, affiliation, innovativeness and fairness can facilitate effective knowledge sharing.

The aim of this paper is to examine the relationship between the dimensions of organisational climate and knowledge sharing behaviour in the context of Malaysian Universities. A total of 558 full time academics in Malaysian Universities have participated in the study. The findings indicate that management support, affiliation, innovativeness and fairness posit a positive relationship toward knowledge sharing behaviour. Management support recorded the highest correlation with knowledge donating. Meanwhile affiliation reported the strongest correlation with knowledge collecting.

Keywords: organisational climate, management support, affiliation, innovativeness, fairness, knowledge sharing

Introduction

In recent years the ideology of knowledge sharing has drawn the attention of researchers and practitioners in the arena of knowledge management. This phenomenon occurs when organisation shifted their focus from hard and traditional resources to intellectual or knowledge as resources (Drucker, 1992). Prior research indicated that knowledge sharing can improve team work, enhance decision making and increase overall performance of the organisation (Prahalad & Hamel, 1990; Smith, Locke, & Barry, 1990). Knowledge sharing is said to be very critical to universities where higher education institution serves as a knowledge hub and new knowledge is generated from there (Jain, Sandhu, & Sidhu, 2007).

Organisation has placed much effort to identify a systematic approach to create, share and store knowledge (J. H. Lee, Kim, & Kim, 2006). Frequently, the focus has been on knowledge management system or data warehouse technology to facilitate knowledge sharing. However, researchers have argued that the emphasis should not be given on the technological tools but rather on the knowledge itself and the organisation (such as organisational climate) where knowledge is created (Bock, Zmud, Kim, & Lee, 2005). As to date, very little research has been conducted to examine the organisational characteristic towards knowledge sharing behaviour in the higher education setting in Malaysia. Therefore, this paper seeks to examine whether the perceived climate of management support, affiliation, innovativeness and fairness could lead to positive knowledge sharing behaviour.
This paper significantly contributes in two aspects. Firstly, most of the researches conducted only examine knowledge sharing from the perspective of knowledge donating and neglecting knowledge collecting. This paper investigates the impact of various dimensions of organisational climate toward both knowledge donating and knowledge collecting. Secondly, very little empirical research has been conducted in the context of higher education institution in Malaysia. As such, this paper serves as one of the pioneer to explore knowledge sharing behaviour in universities across all the states in Malaysia.

Knowledge Sharing

Sharing and transferring knowledge is crucial for a firm and it requires effort from all levels. This practise could involve different number of individuals within different levels of the organisation; an individual sharing with another individual e.g. one to one; an individual sharing with a group of people e.g. one to division or department; or an individual sharing with the entire organisation e.g. one to entire company (Argote, Ingram, Levine, & Moreland, 2000). This process assumes that at least two parties to be involved; one in donating or distributing the knowledge while the other acquires and collects the knowledge (Van den Hooff & de Ridder, 2004; Vithessonthi, 2008). Similarly, Ardichvili, Page and Wentling (2003), knowledge sharing requires both sides in the supply of new knowledge and in the demand for knowledge. Therefore, this dissertation will adopt the ideology of Van Den Hooff and De Ridder (2004, p.118) whereby knowledge sharing is divided into “knowledge donating – communicating to others what one’s personal intellectual capital is; and knowledge collecting – consulting colleagues in order to get them to share their intellectual capital”.

Organisational Climate

Organisational factors have been argued to play a significant role in initiating or discouraging knowledge sharing attitude (Alavi & Leidner, 1999; Jones, Cline, & Ryan, 2006; H. Lee & Choi, 2003). Szulanski (1996) considers these factors as institutional structures. There are two broad classifications of institutional structures known as organisational climate or organisational culture (Bock et al., 2005). In many scholarly researches, organisational climate has been reported to have strong influence toward knowledge management activities, specifically knowledge sharing (Bartol & Srivastava, 2002; Bock et al., 2005; Janz & Prasarnphanich, 2003; J. H. Lee et al., 2006; Lin & Lee, 2006; Moffett, McAdam, & Parkinson, 2002).

In many recent articles, institutional structure and knowledge sharing are positively correlated. According to Coleman (1988), social behaviour is bounded by elements of norms, rules and obligations which form the institutional structure. Some authors classify institutional structure as part of organisational culture or organisational climate (Akgun, Lynn, & Byrne, 2003; Bock et al., 2005). Organisational culture is regarded as shared “values, beliefs and assumptions” which is deeply embedded in the organisation (Dennison, 1996, p.624) and it is perceived to be crucial for all organisational activity (Lucas & dt ogilivie, 2006). Whereas, McMurray ” (2003, p.1) defined organisational climate as “a descriptive construct, reflecting consensual agreement amongst members regarding key elements of the organisation in terms of its systems, practices and leadership style.

Organisational climate differs from culture in the sense that climate is rather static, temporal and mainly constrained to those elements which are explicitly noticed by organisational members (Dennison, 1996). Culture on the other hand is harder to be identified and it is mainly based on the evolution of the social system over a period of time (Dennison, 1996; McMurray, 2003). Climate is known as the outer layer of culture (Patterson et al., 2005) and it is easier to be identified and described (Koys & DeCotiis1991). In order to obtain the perceived organisational factors that influence knowledge sharing behaviour, organisational climate has been selected to represent the salient aspect of institutional structure. This paper will only focus on the four dimensions of organisational climate which have been identified from prior research that will influence knowledge sharing behaviour. These dimensions are known as management support, affiliation, innovativeness and fairness pertaining to knowledge sharing activity.

Management support

Management support refers to the perception of assistance and encouragement given by the management to facilitate knowledge sharing. Senior management teams usually shape the overall practices, activities and capabilities of the firm (Lyles & Schwenk, 1992). Support provided by the management will influence various job attitudes and work performances in an organisation (Allen, Shore, & Griffeth, 2003; Spitzmüller, Glenn, Barr, Rogelberg, & Daniel, 2006). Ruggles (1998) noted that the inability of the top management to highlight the significance of knowledge might be the largest hurdle for knowledge sharing activities. Many scholars classified management support as the most vital component for implementation of knowledge sharing activities.
in an organisation (DeLong & Fahey, 2000; Davenport & Prusak, 1998; 2000; Voelpel & Han, 2005). Senior
executives in an organisation could provide support by recognising the value of knowledge sharing (Voelpel &
Han, 2005), develop an atmosphere which encourages sharing behaviour (Rockart, Earl, & Ross, 1996) and
providing sufficient resources to facilitate sharing activities (Garvin, 1998). Thus the proposed hypotheses are:

Hypothesis 1(a): Management Support is positively correlated to Knowledge Donating
Hypothesis 1(b): Management Support is positively correlated to Knowledge Collecting

Affiliation

A climate of affiliation is defined as “the perception of as sense of togetherness among an organization’s
members, reflects the caring and pro-social behaviour critical to inducing an organization’s members to help one
another” (Bock et al., 2005, p.94). Chay, Loh, Menkhoff and Evers (2005) contended that a pro social behaviour
encourages one to volunteer to assist those they like and feel compatible with. In other words, the sense of
affiliation measures the feeling of togetherness or closeness with other members. These feelings are developed
based on the care and warmth received by him or her during needy times. As such, strong affiliation in the
organisation encourages employees to go beyond their responsibility to help each other in the organisation
(Bock & Kim, 2002). Those with high sense of affiliation will develop a strong bond with others, such as
friendship, and increase social interaction (Cardador & Pratt, 2006). A friendly climate in the organisation
motivates members to frequently share and communicate in the organisation (Litwin & Stringer, 1968). This
reflects that the employee is more attached with the other members in the organisation and sets a platform for
him or her to share their knowledge. Thus a strong sense of affiliation is vital for knowledge sharing. Bock et al.
(2005) found that a high affiliation climate encourages employees to share their knowledge. The proposed
hypotheses are:

Hypothesis 2(a): Affiliation is positively correlated to Knowledge Donating
Hypothesis 2(b): Affiliation is positively correlated to Knowledge Collecting

Fairness

Bock et al. (2005, p.94) described fairness as “the perception that organizational practices are equitable and
neither arbitrary nor capricious, both builds trust between members and serves to overcome the public good
dilemma associated with knowledge sharing”. Fairness is perceived as a driver to initiates knowledge sharing in
an organisation (Burgess, 2005; Wasko & Faraj, 2000). If employees in an organisation believe that they are
evaluated and rewarded in a fair manner, then they are more willing to contribute (Hislop, 2003). As such,
fairness in the organisation aids to build organisational citizenship and trust between members (Bartol &
Srivastava, 2002). Thus, when employees recognise a climate of fairness in the organisation, they will have
higher tendency to engage in organisational activities, like knowledge sharing. Hislop (2003) proposed that
fairness helps to shape employees attitude toward knowledge sharing. Similarly, Bock et al. (2005) reported that
employees who perceived a fair climate are more willing to participate in knowledge sharing. Thus, it could be
concluded that a climate of fairness is capable in motivating one’s attitude toward knowledge sharing. The
hypotheses are formulated as:

Hypothesis 3(a): Fairness is positively correlated to Knowledge Donating
Hypothesis 3(b): Fairness is positively correlated to Knowledge Collecting

Innovativeness

Innovation is regarded as an iterative process that seeks to tap into new opportunities by creating new invention
(Garcia & Calantone, 2002). In order for firms to stay innovative, members of the organisation are required to
encourage open information flow; be focus-oriented on organisational learning; promote flexibility on work
routine; endorse reasonable risk taking and substantiate entrepreneurial values. (Bock et al., 2005; Hurley &
Hult, 1998; Roth, 2003; Slater, 1997). In an innovative climate, employees often require to anticipate changes
and they should always seek to recognise new and creative ideas (Hurley & Hult, 1998). As such members
working under an innovative climate will tend to share their ingenious ideas across the organisation (Kim &
Lee, 1995). Hence, in order to initiate knowledge sharing behaviour in an organisation, managers have to
develop an innovative climate which promotes frequent interaction and allow exchange of ideas freely among
the members of the organisation (Bock et al., 2005; Lopez, Peon, & Ordas, 2004). The proposed hypotheses are:
Hypothesis 4(a): Innovativeness is positively correlated to Knowledge Donating
Hypothesis 4(b): Innovativeness is positively correlated to Knowledge Collecting

From the above-mentioned discussion and hypotheses, the research model developed for this study is shown in Figure 1.

**Research Methodology and Findings**

A sample was developed based on non-probabilistic; quota sampling. Data were collected from online questionnaire. The measures used to operationalise the constructs were adapted from the past literature with minor modification to fit with the university setting in Malaysia. All items were measured based on a five-point Likert scales, ranging from strongly disagree to strongly agree. A total of 1,297 e-mails were distributed and after a series of reminders, 558 respondents completed the questionnaire. This indicates a response rate of about 43%. Only full time academics from private and public universities were invited to participate in the research.

In order to determine the overall fitness of data, Principal Component Analysis was conducted. Next, the reliability of construct was assessed by considering Cronbach’s alpha value. Lastly, the hypotheses were examined by using Pearson Correlation.

**Data findings and analysis**

Table 1 below shows the results from Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett’s Test of Sphericity. Both the tests help to determine the appropriateness of the factor model. A score of 0.881 from KMO indicates good fit of the model. In addition Bartlett’s Test of Sphericity indicates that the pairwise correlation is significant ($\chi^2 = 7257.53; df = 171; p = 0.001$). Based on these two tests, the data is adequate for factor analysis. In addition, Table 2(a) examines the construct validity by evaluating the factor loading within the constructs. The factor loadings on all constructs satisfied the benchmark of 0.5 as proposed by Hair, Anderson, Tatham, and Black (1998). This indicates satisfactory item convergence on the intended constructs. Meanwhile, construct reliability (see Table 2(b)) for all of the factors in the measurement model was above .70, an acceptable threshold suggested by Nunnally (1978).

Table 1: Results of KMO and Bartlett's Test

<table>
<thead>
<tr>
<th>KMO and Bartlett's Test</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</td>
<td>0.881</td>
</tr>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td>Approx. Chi-Square</td>
</tr>
<tr>
<td></td>
<td>df</td>
</tr>
<tr>
<td></td>
<td>Sig.</td>
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Table 2: Results from PCA and Cronbach’s Alpha

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td><strong>Affiliation (AFF)</strong>*</td>
<td>AFF3</td>
<td>0.841</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>AFF1</td>
<td>0.836</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AFF2</td>
<td>0.813</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<tr>
<td><strong>Knowledge Collecting (KC)</strong>**</td>
<td>KC1</td>
<td>0.815</td>
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<tr>
<td></td>
<td>KC2</td>
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<tr>
<td></td>
<td>KC3</td>
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<td></td>
<td>KC4</td>
<td>0.775</td>
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<tr>
<td><strong>Knowledge Donating (KD)</strong>**</td>
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<td></td>
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<td>0.846</td>
</tr>
<tr>
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<td>KD3</td>
<td>0.891</td>
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<tr>
<td></td>
<td>KD1</td>
<td>0.705</td>
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<tr>
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<tr>
<td></td>
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<tr>
<td></td>
<td>FRN2</td>
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<tr>
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<td></td>
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<td></td>
<td>INN1</td>
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<tr>
<td><strong>Management Support (MS)</strong>***</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>MS2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Items adopted from Bock et al., (2005)
*** Items adopted from Lin & Lee (2006)

Based on the Pearson Correlations analysis (Table 3), all the constructs were correlated. The strength of correlations ranged between 0.274 to 0.673 and the significance value are less than 0.01. This indicates that the perceived climate of management support, affiliation, innovativeness and fairness could facilitate both knowledge donating and knowledge collecting. Thus, all hypotheses were supported.

Table 3: Correlations

<table>
<thead>
<tr>
<th></th>
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<th>AFF</th>
<th>INN</th>
<th>FRN</th>
<th>KC</th>
<th>KD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>.546***</td>
<td>1</td>
<td></td>
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<td></td>
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<tr>
<td>INN</td>
<td>.551***</td>
<td>.673***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRN</td>
<td>.525***</td>
<td>.539***</td>
<td>.622***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KC</td>
<td>.375***</td>
<td>.420***</td>
<td>.329***</td>
<td>.345***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>KD</td>
<td>.323***</td>
<td>.274***</td>
<td>.307***</td>
<td>.280***</td>
<td>.431***</td>
<td>1</td>
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</tbody>
</table>

*** Correlation is significant at the 0.01 level (1-tailed).

Discussion and conclusion

According to the findings above, management support appears to have stronger relationship in facilitating knowledge donating (r = 0.323; p < 0.01) and knowledge collecting (r = 0.375; p < 0.01) as compared to other constructs. The empirical study indicates that management support is very crucial for one to share their knowledge in universities. Therefore, it is crucial for the top management to initiate programs and policies that support knowledge sharing behaviour. Furthermore, a climate which promotes innovativeness is also deemed as crucial for academics to donate their knowledge (r = 0.307; p < 0.01). Therefore senior administrative in universities should encourage open communication and continuous improvement, and provide a platform to assist employees to donate their knowledge.

On the other hand, a perceived climate of affiliation would encourage academics to collect or acquire knowledge (r = 0.420; p < 0.01). High sense of affiliation improves trust between academics and subsequently, they are more open to accept knowledge from others. Meanwhile a climate of fairness (r = 0.345; p < 0.01) also indicates
the willingness of others to collect knowledge being donated. Top management have to ensure that the policies and practices in the university have to be seen as fair and just.

As a conclusion, a perceived climate of management support and innovativeness promotes knowledge donating while a perceived climate affiliation, management support and fairness encourage knowledge collecting. Senior administrative in a university should understand that effective knowledge sharing behaviour has to be encouraged rather than forced. Universities have to develop a favourable working environment or climate that facilitates knowledge sharing behaviour. Due to the growing importance of knowledge sharing, we hope that this paper provides valuable insights for practitioners in the higher education sector on the characteristics of organisational climate which promote effective knowledge sharing behaviour.

References


Using Alumni Role-Models to Identify, Enhance and Integrate Employability Within the Curriculum

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This study addressed the challenge of enhancing and integrating employability within the curriculum to prepare graduates for the world of work in the current poor economic climate. The study’s objectives were to explore alumni employment experiences to identify appropriate employability enhancement opportunities that had been successfully utilized within the undergraduate psychology programme. The knowledge generated was used to inspire current students and to enhance employability skills integrated within the curriculum. The task was also designed to facilitate career orientated awareness and to develop career-related goal setting among undergraduate students. Methodology: a qualitative study based on thematic analysis of semi-structured interviews. A purposive maximal variation sample of thirty participants who had graduated from the LJMU undergraduate psychology programme between 2001 and 2009 was recruited. Knowledge generated was presented to current level 1 psychology undergraduate students in the form of role-model profiles. Scope of the findings: clear employability themes emerged that were consistent with previous research findings identifying subject specific skills, generic academic skills and interpersonal soft skills as the key attributes of student employability. A further theme ‘preparedness’ also emerged from the data, and this appeared to impact on the effectiveness of the other employability skills. This has implications for the widening participation agenda as first generation students reported poorer preparedness than other students. Informal feedback from current undergraduate students suggested they were inspired and motivated by the profiles of the role models presented, both in relation to career opportunities and identifying crucial skills associated with career progression.

Keywords: Employability, Soft Skills, Curriculum

Employability

It has been suggested that employability is a complex measure that is difficult to define and measure (Harvey, 2001; Yorke, 2003) and that there is a lack of conceptual clarity regarding graduate attributes that facilitate employability (Green, Hammer & Star, 2009). Glover, Law, & Youngman (2002) proposed a global definition of employability in terms of an enhanced capacity to secure employment, whereas Yorke & Knight (2007) proposed a more specific definition of graduate employability based on four broad areas of student attainment; evidence of powers of understanding, skills, personal qualities and metacognition. Bausch (2009) agrees that employability is necessarily complex and there is no clear definition, but argues that the focus should be on raising awareness of employability skills in undergraduates rather than debating over a clear definition. There has also been criticism of overarching discourse into employability that overlooks the subjective dimensions (Elias & Purcell, 2004a) and it is suggested that employability should be conceptualized as a form of identity that is influenced by the graduates personal experience (Holmes, 2001) because it is a personal matter that involves the self and identity and is an ongoing social process of engagement with the world of work in which they operate, based on the graduates own perspectives (Tomlinson, 2007). Andrews & Higson (2009) concluded that graduate skills are not distinct, unrelated individual traits, but a synergetic compilation of generic skills required of graduates in the workplace.
Graduate workplace

Traditionally, education has been perceived to be essential for enabling people in advanced society to compete with the best in the world (NCHHE, 1997), and graduates have been perceived as an elite social and occupational group who will access a wage premium and fulfill their potential as knowledge workers, but many are under utilizing their skills and there are still differences in graduate employment destinations based on social class, gender and ethnicity (Tomlinson, 2007). Furthermore, mass higher education has led to the rise in formal qualifications and the consequent reduction in value of degree status in the job market (Tomlinson, 2007) and has resulted in many graduates being over qualified for the jobs they are able to attain (Tomlinson, 2008). The graduate employment market was holding up in 2004, despite an increase in graduates (Elias & Purcell, 2004b), but the economic situation has since deteriorated leading to a rise in student over-qualification with successive age cohorts in employment experiencing greater over-qualification for the job (Green & Zhu, 2010). However, Bao (2009) suggests the job market could improve over the next economic cycle because baby boomers will be approaching retirement. It is generally agreed that the concept of a ‘job for life’ has expired (Bausch, 2009) and students now perceive the job market to be flexible and high risk (Tomlinson, 2007). The idea of ‘job security’ has changed conceptually to ‘employability security’, where employees must constantly adapt to the work environment to maintain their employability (Bridgstock, 2009) and students are increasingly dependent on their ability to maintain a positional advantage in employability (Waters, 2009). One way in which students can maintain a positional advantage is by engaging in postgraduate study at long-established institutions, as students from these institutions are preferred by employers (Harvey, 2001) and the teaching reputation of a university can earn its graduates a wage premium of up to 6% (Newman, 2009). Furthermore, Tomlinson, (2007) identified two distinct student approaches to employability which he described as careerist (professional backgrounds, active and goal orientated, understand the need for optimizing opportunities) and ritualist (lower middle class families, first generation students, passive, non-goal orientated). This clearly has implications for newer universities that have more non-traditional students.

There is some indication that graduate achievement is necessary but not sufficient for graduates to be recruited for employment in the current economic climate (Yorke, 2003; Bridgstock, 2009). Brown & Hesketh (2004) have highlighted the declining importance employers are attaching to academic attainments and the increasing importance of personal attributes. Graduates must be able to proactively navigate the world of work and self-manage the career building process (Tomlinson, 2007; Bridgstock, 2009). Employers have sometimes been critical about the poor level of graduate preparedness for work (Maher & Nield, 2005) with graduate skills not necessarily being assimilated into employment (Yorke, 2003). With the exception of specialist knowledge and competencies, employers and employees have judged employability skills to be generally poor (Bausch, 2009). Specifically, employers have suggested that psychology graduates can be lacking in career motivation and focus (Hugh-Jones & Sunderland, 2007) and only 20% of psychology graduates go on to become professional psychologists (Lantz, 2008). Leon (2002, cited in Maher & Nield, 2005) found that graduates were dissatisfied with their lack of preparation for the world of work and Elias & Purcell, (2004a) found that graduates from any degree can take five years or more to settle into careers. This supports the argument that first destination data is problematic because it only tends to indicate the short-term employment market in a particular area (Bridgstock, 2009; Harvey, 2001).

Integrating employability skills

There is no clear consensus from employers and educators regarding what specific skills need to be taught (Bausch, 2009) but teaching that enhances employability is associated with systematic thinking about programmes and learning environments and adopting a holistic approach (Harvey, 2001; Knight & Yorke, 2003; Green, Hammer & Star, 2009). The whole curriculum can be treated as a means of enhancing employability (Yorke & Knight, 2007) as many of the effects of higher education are the product of the whole student experience (Pascarella & Terenzini, 2005). There is no guarantee that the process of undertaking a degree programme will improve one’s employability (Yorke & Knight, 2007) as many of the effects of higher education are the product of the whole student experience (Pascarella & Terenzini, 2005). There is no guarantee that the process of undertaking a degree programme will improve one’s employability (Yorke & Knight, 2007) as many of the effects of higher education are the product of the whole student experience (Pascarella & Terenzini, 2005). There is no guarantee that the process of undertaking a degree programme will improve one’s employability (Yorke & Knight, 2007) as many of the effects of higher education are the product of the whole student experience (Pascarella & Terenzini, 2005). There is no guarantee that the process of undertaking a degree programme will improve one’s employability (Yorke & Knight, 2007) as many of the effects of higher education are the product of the whole student experience (Pascarella & Terenzini, 2005).
Furthermore, there needs to be learning cultures where students know what they are learning and why (Knight & Yorke, 2003) and career skills development needs to be integrated from the first year of study (Bridgstock, 2009). Students also need to learn to describe the skills they have learned in terms of activities that may be attractive to an employer (Kelly, 2010), and to identify the opportunities and develop short and long term goals (Bridgstock, 2009).

**Rationale for current study**

It has been suggested that employability is different in different areas and for different subjects (Holmes, 2001; Tomlinson, 2007; Andrews & Higson, 2009) and an individualized approach to integrating employability in the curriculum may be beneficial. Yorke & Knight, (2007) argue that considerable benefit can be gained from formative research on specific subjects in specific areas to identify employability skills needed for that cohort, and that the judgments and decisions educators make should be informed by local and provisional evidence for that specific subject at that particular university (Yorke & Knight, 2007). Moreover, it has been suggested that each discipline should be responsible for conceptualizing, mapping and assessing graduate attributes pertinent to that cohort (Green, Hammer & Star, 2009). There is an abundance of UK psychology graduates because it is the third most popular UCAS choice (Lantz, 2008) and there are a wide range of career opportunities, so it can be difficult for students to orient themselves, suggesting formative enquiry into psychology alumni experiences may be beneficial for inspiring current students and guiding activities to embed and enhance employability in the curriculum.

**Method**

**Design:** The Liverpool John Moores University funded study employed a qualitative design based on thematic analysis of semi-structured interviews. The interview schedule was devised to establish participant demographic data (age, gender, degree classification, year of graduation and employment outcome) and to generate sensitive in-depth knowledge of appropriate employability skills acquired on the undergraduate psychology programme of study. Particular emphasis was paid to the learning that was most useful and what they would do differently if they repeated the course of study. The semi-structured interview format was chosen for data collection because it is deemed to be a professional conversation where knowledge is produced in interaction (Kvale & Brinkmann, 2009), it is an academically accepted route for generating quality data (McHoul & Rapley (2002), and it has high ecological validity (Hugh-Jones, 2009).

**Participants:** A purposive sample of 30 participants was recruited using maximal variation sampling to generate data that encompassed a broad demographic mix. Factors that were considered for sampling included gender, age at graduation, time elapsed since graduation and whether the student was a home student or an overseas student. Participant degree classification and career destination was not known at the time of recruitment, so were not implicated in the sampling process.

Of the 30 participants, 8 were male and 22 were female, which is a typical representation of the gender bias within the undergraduate psychology programme. Participants graduated between 2001 and 2009, and of those who disclosed their age, the minimum age was 22, the maximum age was 44, and the mean age was 26.5. In terms of specific demographic data relating to prior experience, 10 participants were mature students, 4 participants were overseas students and 8 participants were first generation students. In terms of current postgraduate employability status, 2 participants were running their own business, 22 participants were employed (including part-time employment), 13 participants were engaging in further study (including part-time study), and 1 participant was unemployed. All degree classifications were represented with 7 participants attaining a first class degree, 17 participants attaining a 2:1, 4 participants attaining a 2:2, and 1 participant attaining a third class degree. One participant did not disclose degree classification. Full demographic data is shown in the table below.

### Table 1. Participant demographic data

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Class</th>
<th>Year</th>
<th>Current employment status</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>M</td>
<td>2:2</td>
<td>2009</td>
<td>Studying Diploma in Counselling &amp; employed as support worker for Obsessive Compulsive Disorder patients</td>
</tr>
<tr>
<td>22</td>
<td>F</td>
<td>*</td>
<td>2009</td>
<td>Unemployed</td>
</tr>
<tr>
<td>30</td>
<td>F</td>
<td>1</td>
<td>2008</td>
<td>PhD Investigative Forensic Psychology &amp; Sessional University Lecturer</td>
</tr>
<tr>
<td>38</td>
<td>M</td>
<td>2:1</td>
<td>2008</td>
<td>Police Officer, Criminal Investigation Department (CID) Management Training</td>
</tr>
</tbody>
</table>
Procedure: This study was first approved by the Liverpool John Moores University Psychology Ethics Committee where it was agreed that an independent research assistant should be appointed to carry out data collection using the approved interview schedule. An independent research assistant was recruited for this task to avoid demand characteristics and to prevent any conflict of interest or data contamination situations occurring between staff and former students. Academics within the School of Natural Sciences and Psychology were asked to nominate potential participants based on the single criteria of previous students for whom they had current contact details. Typically, these were students for whom the academics had previously provided an academic reference. From the nominated potential participants, the research assistant recruited a purposive sample of 30 participants who had graduated from Liverpool John Moores University between 2001 and 2009. Semi-structured interviews were then carried out either face to face, on the telephone, or by email correspondence, and transcribed verbatim. The transcripts were then used to create alumni role-model profiles, which were subsequently approved by the participants. Approved profiles were presented to current students at induction to increase awareness of career progression opportunities in the undergraduate curriculum. Transcript data was then interrogated by the principal researchers using thematic analysis, and findings used to embed and enhance employability skills within the undergraduate curriculum using the Board of Study medium.

Results

Consistent with previous studies (Yorke & Knight, 2007), the findings suggest that for this cohort, the key employability skills fall into three broad categories; subject specific skills, generic academic skills and interpersonal skills. Participants reported feeling very confident in their transference of subject specific skills to the new role - “I frequently use statistics, psychometrics, occupational psychology and SPSS, all this is highly job relevant to me now,
in fact I still use my course notes.” (Occupational psychologist). Participants also reported feeling confident in their generic academic skills, even when employment was not related to the course content – “My writing skills gained from LJMU were invaluable as I have to write many reports ... I also use presentation skills, the smaller group work in tutorials was really helpful as they are similar sizes to the meetings where I have to go and speak up.” (Transport Engineer). Both subject specific skills and generic academic skills are taught elements of the undergraduate psychology programme, so it is expected that successful students would feel confident as they are clearly embedded within the curriculum. Participants recognized the importance of interpersonal skills, but reported mixed competencies in this area, some positive – “There are so many skills I use in my current role that I gained from LJMU, many without actually being aware of it. Many of the children come and talk to me as they say I am approachable and this is one of the skills I have learned ... One of my core skills is I can see past the bad behaviour and identify that there is a problem and help the child through it.” (Secondary school teacher) – and some negative experiences where graduates appear to be floundering “The company was looking for any Sixth Formers interested in applying for a job, I might as well apply as I needed a wage, not a job I wish to stay in.” (Tele-worker).

The unique factor about this cohort is that a further theme ‘preparedness’ also emerged as a key factor that influenced the ability to develop and assimilate the key employability skills. Preparedness relates to an early awareness of career aims “I wanted to be a forensic psychologist from the start ... and steered my learning that way.” (Chartered forensic psychologist) and possible barriers to employment “It was important to me to make sure the course had BPS accreditation.” (PhD Neuropsychology). It also relates to setting career goals “It’s very important to keep setting short term goals ... to keep yourself motivated and moving forward.” (Editorial Assistant of Quarterly Journal of Experimental Psychology) and being proactive in progressing your career “I believe I have been successful in my career due to my ability to be assertive, if you don’t ask you don’t get.” (University lecturer). Participants who were strong in ‘preparedness’ were also more likely to have engaged in part-time career related paid or voluntary work alongside their studies “I did voluntary and paid work at various organizations which shaped my understanding and appreciation of the medical career.” (MB Chb), and taken full advantage of extracurricular activities when they presented “I also worked with one of the tutors in collecting data.” (MSc Cognitive Neuroscience). Participants who were weakest in ‘preparedness’ were often first generation students whose goal had been to get to university, having achieved that goal, further career goals had not been set until then end of the programme of study “I don’t suppose I realized what I had done until the end.” (unemployed). “I honestly didn’t know what I wanted to do ... I really didn’t know the areas I could get into afterwards.” (Investment banker). The participants low in preparedness, unsurprisingly, also reported the least job satisfaction. Preparedness appears to chime with the careercist and ritualist student approached described by Tomlinson, (2007). A model of how preparedness feeds into the key skill is shown below.

![Employability model](image)

**Figure 1: Employability model**

**Discussion**

A major advantage of this study was to familiarise current students with an array of attainable career outcomes using alumni role-model profiles, as advocated by Busch (2009). These profiles were presented at induction, which is consistent with the recommendation that employability skills are introduced in the first year of study (Bridgstock, 2009). A further advantage was to identify areas where psychology alumni employability skills are strong (subject specific skills and general academic skills) and where they are inconsistent (interpersonal skills and preparedness) and to feed this information into the system via the Board of Study to strengthen these areas in the curriculum.
References


The Management of Cross Cultural Relationships in Transnational Higher Education Partnerships

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This study (carried out by the author for his DBA Thesis) is multi-disciplinary bringing together both relationship marketing theory and cross cultural management theory for the purpose of researching the dynamics of individual level relationship development in transnational higher education partnerships. A better understanding of how relationships develop and how best to manage those relationships has an important impact on the quality of teaching and academic support provided to students by collaborative partners.

Research Objectives:

- To identify what the key issues are that drive relationship development at the individual level in higher education transnational partnerships
- To identify how cross cultural differences at the individual level can impact on relationship development within higher education transnational partnerships
- To better understand the specific dynamics that lead to either strong and healthy relationships or relationships that ultimately fail in transnational higher education partnerships
- To identify the drivers of long-term and sustainable relationships with a future in higher education transnational partnerships

In short, the study has revealed:

- Trust and commitment are central to building strong transnational collaborations
- Arms length approaches to managing transnational collaborations represent a high risk strategy
- Reciprocity between partners drives the future development of a transnational collaboration
- Interdependence is less important than trust and commitment in long term development.
- Joint strategic planning with a mutually generated vision is crucial to long term success.

These and other findings have led to the proposal of a new strategic approach to relationship development in transnational higher education collaborations:

- A tentative model is proposed for understanding relationship transition in higher education transnational partnerships.
- The model also includes an operational framework for the development of dynamic partnerships based on four levels of relationship intensity described as relationship states.

Keywords: Relationships, Transnational partnerships, national culture

Justification for the Research

Establishing, developing and maintaining successful business relationships with distant partners is not an easy task. A major barrier is cultural distance (Trang, et al, 2003). Poor knowledge or understanding about cultural differences can create difficulties for organisations. Previous research has shown that the ability of an organisation to break down cultural barriers and establish close business relationships with partners is a major factor for success in international business marketing (Ford, 1984). Unless exporters are sensitive to the cultural aspects of such relationships it is very difficult to build long-term high quality partnerships. LaBahn and Harich (1997) noted that little systematic empirical research has been conducted on how cultural differences combine...
with theories of relationship marketing in an international business setting. Patterson et al., (1998) point out that
the large number of international business partnership studies in Western countries needs to be supplemented
with other studies encompassing organisations from different countries, Lowe et al. (2002) agree with this
position and commented that the academic community is still grappling with these difficult issues, with
insufficient progress being made toward cultural research and that more research needs to be conducted.

The UK higher education sector is experiencing substantial growth in its international business and the
development of overseas collaborative partnerships, often typified as franchise arrangements. The need to
understand how to develop relationships over time in a way sympathetic to the national culture of the nation in
which those partnerships are formed is key to the long-term success of those relationships. Heffernan and Poole
(2004) have indicated that issues and problems in the management of offshore partnerships tend to relate to their
quality. For example, how well a university can successfully transfer teaching quality, assessment standards,
pastoral care processes and academic development through staff development are all key to long term
relationship development.

**Key Variables and Constructs of Relational Exchange**

Rao and Perry (2002) in defining relationship marketing encompass exchanges with customers along with
suppliers, internal units, the government and competitors. Various researchers have identified and categorised
elements in all these exchange processes, using different terms such as technical and social elements or
structural and social bonds (for example, Mattsson, 1985; Gordon, 1988). This paper will focus on the particular
processes related to social bonds and will be used here to identify the main variables and constructs of
relationship marketing and exchange.

**Social Bonds**

Social exchange is viewed as a dynamic process and plays a central role in ongoing exchange episodes by
fostering symbiotic adaptation (Pelton et al., 1997). Social bonds can be strengthened through multilevel
contacts between parties, from formal organisational contacts through to informal personal ones. According to
Rao and Perry, (2002), trust, commitment and interdependence are the most mentioned social bonds in the
literature.

First, trust is probably the most common construct in relationship models and has been a key feature in work
conducted by the International Marketing and Purchasing Group (IMP). IMP researchers Hakansson and
Snehota (2000, p.77) recognise trust is “built up over time in a social exchange process whereby the parties
learn, step by step, to trust each other”. Moorman et al. (1993) define trust as a willingness to rely on an
exchange partner in whom one has confidence. Fukuyama (1995) defines trust as ‘the expectation that arises
within a community of regular, honest and co-operative behaviour, based on commonly shared norms, on the
part of the other members of the community’. The conceptualisation of trust, indicators of trustworthiness and
the relative importance of social relationships are not universal but vary between different national cultures.

In turn, trust can lead to the commitment to a relationship (Morgan & Hunt, 1994) that results from an exchange
partner exerting all his/her efforts to preserve an important relationship (Morgan & Hunt, 1994). Both affective
commitment (which is based on a sense of liking and emotional attachment to the relationship) and calculative
commitment (which is based on a cognitive evaluation of the worth of the relationship) (Morgan & Hunt, 1994)
are constructive for developing mutually beneficial relationships, with affective commitment being more
effective (Kumar et al., 1994). Cullen et al. (2000) describe trust and commitment as the ‘social fabric’ of the
relationship. Commitment is an essential ingredient for successful long-term relationships (Walter et al., 2000).

In turn, interdependence is created by partners’ relationship investments (Wilson & Jantrannia, 1994), that is,
asset reciprocity that holds the relationship partners together and creates barriers to leave the relationship
because of the high costs involved (Wilson & Mummalaneni, 1988). The more the interdependency, the stronger
is the relational behaviour (Dwyer et al., 1987). In addition to interdependence in a relationship, reciprocity,
which is one of the basic norms of social exchange, emphasises symmetrical behaviour characterised by co-
operation, collaboration and co-ordination (Oliver, 1990; Palmer, 2000).

Further to the three central social bonds as described above, other key bonds include co-operation, mutual goals,
power imbalance and performance satisfaction. Each of these has been central to this research.
Although beyond the social bonds identified and described above the process of adaptation is central to relational exchange theory and the way social bonds will develop in an interfirm relationship. Adaptation occurs when one party in a relationship alters its processes or the item exchanged to accommodate the other party (Hakansson, 1982, Han & Wilson, 1993). Hallen et al. (1991) found that both buyer and seller made adaptations to the other. They expect that adaptation behaviour will vary over the life of the relationship. In the early stages it will be a means to develop trust, and in the mature stage it will expand and solidify the relationship. Hallen et al. (1991) goes on to suggest that where significant relationships exist, then, counterpart-specific, or symbiotic adaptation occurs and that such adaptation is considered a central feature in the dynamics of the business relationship. One or both parties may make adaptations to bring about initial fit between their needs and capabilities, but adaptations may also be necessary in an on-going relationship as the exchanging parties are exposed to changing business conditions. Moreover, within such on-going relationships the adaptations already made provide part of a framework for further business/relationship expansion.

This section has considered the concept of relational exchange from the standpoint of social bonds as the operational elements of relationship marketing. The section concluded with the idea of adaptation as a ‘process’ across the life of a relationship depicted as stages. The concept of stage theory in relation to inter-firm relationship growth and interaction will be considered next.

**Stages as dynamic features in inter-firm relationship development**

Ford, (1980, p.341) highlights the dynamic nature of relationship development, “We should note that the process described (here) does not argue the inevitability of relationship development. Relationships can fail to develop or regress depending upon the actions of either party or of competing buyers and sellers”. 

Rao and Perry (2002) in commenting on this issue suggest that inter-firm relationships rarely go through definite stage-by-stage development processes and that the simplicity of stage theory does not allow it to fully explain complex inter-firm relationships, particularly on the boundaries between stages. That is, it provides little explanation for the transition from one stage to another and indeed fails to address unsuccessful situations in the change processes.

Rao and Perry (2002) in dealing with the problems of stage theory identify States Theory as a closer approximation of reality in inter-firm relationships. States theory focuses on the unpredicted state of the relationship at a point in time because strategic moves of exchange actors occur in an unstructured and unpredictable manner (Ford et al., 1996). That is, relationship development is much more complex and may not be evolving in the structured manner that stage theory implies (Anderson et al., 1994; Bell, 1995; Hakansson & Snehota, 1995). Relationship development can move forward and backward or even stay in the same state for an undetermined period in the development process

States theory suggests that relationship development is both dynamic and unpredictable and is therefore closer to the reality of marketing practice. In an international context where individual interaction and development of social bonds is in a cross cultural environment, the unpredictable nature of how such inter-firm relationships adapt to each other and develop is clearly a significant issue and one which is not well understood or researched. The next section will briefly review relationships in a cross cultural management context.

**Cross cultural management and relationship development**

Tylor provides one of the earliest definitions of culture “the complex whole which includes knowledge, belief, art, morals, custom and any other capabilities and habit acquired by man as a member of society” (1871, in McCort & Malhotra, 1993 p.97). Subsequent contributions share the all-inclusive nature of culture as affecting aspects of human life in a society.

The difficulty in distinguishing strictly cultural factors from other macro-level influences further complicates the defining of culture. Culture differs intrinsically from other macro-environmental factors : Sekaran (1983, p.68) indicates that “Culturally patterned behaviours are thus distinct from the economic, political, legal, religious, linguistic, educational, technological and industrial environment in which people find themselves”. Soares et al. (2007) suggest that isolating purely cultural from other macro-environmental influences might be unfeasible, as no clear-cut boundaries exist among these interrelated influences. Sekaran (1983, p.68) goes on to say “Culturally normed behaviour and patterns of socialisation could often stem from a mix of religious beliefs, economic and political exigencies and so on. Sorting these out in a clear-cut fashion would be extremely difficult, if not totally impossible”.

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Such complexity led Triandis et al. (1986) to consider culture as a “fuzzy” and “difficult-to-define” construct. Furthermore, cultural values are posited to be subject to change over periods of time, leading to the phenomenon being defined as “…. those beliefs and values that are widely shared in a specific society at a particular point in time” (Ralston, 1993). Culture is thought of as being learned (Hofstede, 1984) and is manifest through history, religion and education which act as strong factors that define and shape a nation’s or society’s character and culture (Harris, 1979). Culture is also considered to influence all human activity, as Rosaldo (1989, cited in Monaghan & Just, 2000, p.42) argue: “... all human conduct is culturally mediated. Culture encompasses the everyday and the esoteric, the mundane and the elevated, the ridiculous and the sublime. Neither high or low, culture is all-pervasive”.

National culture is a complex yet manageable dynamic in the development of transnational relationships at the individual level. This paper will now attempt to encapsulate the issues raised in a proposed early stage model for the development of transnational higher education partnerships. This model is the outcome of the primary data collection phase of this study.

**A proposed early stage model**

![Image of the Relationship Transition Model For Transnational Partnerships]

The model and its descriptors (not included because of space constraints) take a ‘ground-up’ approach for relationship development in transnational partnerships and collaborations. The model is based on a dynamic approach that recognises the different needs of partners at different times in the long term development of the collaboration and how national cultural understanding can enhance relationship development.

**Conclusion**

This short paper has provided a short overview of on-going research into the dynamics of individual level interaction and relationship development in transnational higher education partnerships. It is anticipated that building relationships on the basis of a clear strategic and operational framework will enhance the quality of
learning, teaching and assessment in transnational higher education partnerships. Further, it is anticipated that future research will focus on the development of the model and underpinning dynamics to better understand collaborative partners, their needs and what makes a relationship sustainable and long-term. This will be done through further research with the transnational collaborative partners of Teesside University throughout South East Asia and elsewhere.

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Equipping the Curriculum and Our Graduates for the Real World

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The primary role of the Higher Education (HE) sector is to provide a graduate workforce with the skills and capabilities to enhance the UK’s ability to compete and to respond to the growing demands of the global economy (BIS, 2009). Indeed, the talented and skilled graduates that universities foster will be fundamental to the economic growth and recovery of the UK economy (ibid). Graduates are perceived as the future leaders and senior managers and are, consequently, crucial to the future performance of many organisations (Connor & Brown, 2009). Nevertheless, it appears that whilst graduates hold adequate qualifications, there has been a growing debate about how well they are equipped for the “real world” of work (Conner & Brown, 2009; Gibb, 2000). This paper will firstly explore the key issues raised by the policy community and employers, querying the appropriateness of the current approach in which a deficiency of soft skills, particularly enterprise and employability skills has been identified. It will subsequently look at the various pedagogies to facilitate the embedding of these skills within the curriculum, with the needs of different stakeholders highlighted. Finally, the paper concludes with Queen’s University Belfast as a best practice example of an approach in which soft skills are currently taught and assessed throughout the curriculum.

Keywords: Graduates, Soft skills, Enterprise education, Embedding skills within the curriculum, Best Practice Model

Introduction

The primary role of the Higher Education (HE) sector is to provide a graduate workforce with the skills and capabilities to enhance the UK’s ability to compete and to respond to the growing demands of the global economy (BIS, 2009). Indeed, the talented and skilled graduates that universities foster will be fundamental to the economic growth and recovery of the UK economy (ibid). Graduates are perceived as the future leaders and senior managers and are, consequently, crucial to the future performance of many organisations (Connor & Brown, 2009). Nevertheless, it appears that whilst graduates hold adequate qualifications, there has been a growing debate about how well they are equipped for the “real world” of work (Conner & Brown, 2009; Gibb, 2007). There is a consensus among employers that universities need to do more to prepare their graduates with the skills and capabilities required by business and industry, thus, empowering these individuals to reach their full potential (CBI, 2009; Archer & Davison, 2008). Therefore, one of the significant challenges facing higher education institutes presently is the matter of embedding these employability and enterprise skills into their undergraduate and postgraduate programmes. Queen’s University Belfast, recently nominated Times Higher UK Entrepreneurial University of the Year has attempted to overcome this challenge by embedding these soft skills into a number of disciplines throughout the institution. It is the process of embedding these types of skills within the curriculum which will enable our graduates to hit the ground running (Gibb, 2000).

This paper will firstly explore the key issues raised by key stakeholders such as the policy community, students and employers, querying the appropriateness of the current approach in which a deficiency of soft skills has been identified. It will subsequently look at the various pedagogies to facilitate the embedding of soft skills within the curriculum, with the needs of different stakeholders highlighted. Finally, the paper concludes with
Queen’s University Belfast as a best practice example of an approach in which soft skills are currently taught and assessed throughout the curriculum.

In the current tentative climate, there is a mounting need for our graduates to “improve their capacity to cope with an increasingly competitive, uncertain and complex world involving higher rates of innovation and change” (Gibb, 2000). Consequently, it is vital that higher education institutes across the globe take action and produce highly skilled graduates who can meet the challenges and ambiguity of the contemporary labour market (Andrews & Higson, 2008). Indeed, “the UK faces the same challenges as those of most developed countries. Rapid social change, a volatile economy and worldwide competition for talented students combine to make these challenges all the more pressing” (Herrmann et al., 2008). A number of governments believe that investment in higher education should ultimately “increase the stock of human capital, which is seen as a source of national economic well being” (Knight & Yorke, 2003) and therefore, there is an expectation that higher education will promote the learning outcomes that employer’s value (ibid).

Indeed, if the UK wants to remain the fifth largest economy in the world, there will be an increasing need for highly-skilled graduates who meet and exceed employer’s expectations (Richard Lambert in Universities UK, 2006). Nevertheless, the UK government has previously acknowledged a deficit in these learning outcomes, with graduate skills falling somewhat short of expectations as initially highlighted by the Dearing report (1997), with the resultant factor that higher education institutions were placed under increasing pressure to improve students’ repertoire of skills in preparation for the labour market (Knight & Yorke, 2003). Nevertheless, notwithstanding several efforts research to date suggests that there is “no evidence of a significant independent effect of the efforts devoted by university departments to the teaching, learning and assessment of employability skills” (Mason et al., 2003: 41).

This is despite the fact that numerous students go to university for reasons of employability, rather than a desire for knowledge or to excel in a particular area (Biggs, 2003: 3-5). Indeed, current students appear somewhat disillusioned that there will be sufficient graduate jobs across all disciplines (Brown, 2007). Nonetheless, it has been previously suggested that the demand for graduates has been gravely overestimated with 1.5 million students currently in UK higher education and approximately 400,000 graduates entering the labour market each year. However, it is estimated that there are a mere 62,000 graduate jobs available (Brown & Hesketh, 2004) resulting in a considerable amount of graduates in non graduate employment, with these figures expecting to increase as there is “no prospect of the graduate labour market expanding in line with the increased supply of graduates” (2004: 63). With the transformation of students into paying customers, they are increasingly expecting to receive value for their high tuition fees and to improve their chances in the job market by receiving both relevant knowledge and appropriate skills from their degree (Star & Hammer, 2008; Miclea, 2004). However, this is seldom the case and the following quote is just as relevant today as it was over a decade ago.

“Too many young graduates leave universities without the skills, attitudes, and understanding that are necessary to successfully enter the world of work. The unemployment rates among graduates are the highest in the country. Often jobs are readily available, but these graduates lack what is needed to get and keep jobs. It seems reasonable to expect schools to teach students what they need to succeed in the world of work.” (McCoy, 1991: 94)

Of concern is that many university graduates do not have appropriate ‘soft skills’ (Connor & Brown, 2009). According to the findings from the published report Graduate Employability: what do employers think and want?, “both the reality and perception of the skills deficit in graduates” needs attention (Archer & Davison, 2008: 5). Research carried out by the CBI (2006) demonstrated that nearly thirty percent of employers have issues with graduates’ soft skills such as team working, communication and problem solving in particular in addition to graduates’ attitude to work (25%), self-management (33%) and commercial awareness (44%). Indeed, Archer and Davison (2008) confirm that the majority of employers (60%) view soft skills as more important than graduates’ degree qualifications with over 85% of employers regarding these as important.

Employer representatives argue that graduates should provide a contribution from day one (Atkins, 1999), yet there is a skills gap between what employers require and what universities are turning out (ibid). Indeed, Singh and Singh (2008) suggest that “to succeed in this ever changing, increasingly competitive business environment, organisations must demand employees with competencies which will lead to a high return on the employee investment”. Thus, higher education institutes have been called to equip graduates with “deep intellectual capabilities and a battery of applied practical skills which make them more work-ready” (Archer & Davison, 2008: 8). Moreover, the HEFCE national study also exposed significant differences between employer’s perceptions of the skills requirements for graduate jobs and graduates’ own perceptions of the skills they were able to employ, and the degree to which their university education had supported them to develop those skills.
Therefore, one of the significant challenges facing higher education institutes presently is the matter of embedding these employability and enterprise skills into their undergraduate and postgraduate programmes. Consequently, there is a requirement for university curricula to evolve and adapt as a matter of urgency (Brown, 2007). This agenda has been supported by the European University Association with 91 percent of a sample of 1,800 heads of European higher education institutions identifying the employability of their students to be an important, or a very important (56 percent) concern when designing their curricula (Mason, 2003: 27). Nevertheless, it is for the most part unclear as to what employability skills are important and how these skills should be successfully embedded into undergraduate curriculum and assessment (Brown, 2007).

The Pedagogy for Employability Group (2004:5) has provided a list derived from research carried out over the last two decades that suggests that employers expect to find that the following generic skills to have been developed in their graduate employees:

- adaptability/flexibility;
- imagination/creativity;
- willingness to learn;
- good oral communication;
- independent working/autonomy;
- working in a team;
- ability to manage others;
- ability to work under pressure;
- communication in writing for varied purposes/audiences;
- numeracy;
- attention to detail;
- time management;
- assumption of responsibility and for making decisions;

Indeed, Dacre-Pool and Sewell (2007) suggests that an enterprising graduate would comprise the majority of the skills highlighted above and, thus, would be greatly valued in any organisation, large or small, profit or not for profit. These entrepreneurial graduates can add value with skills that enable them “to seize and exploit opportunities, solve issues and problems, generate and communicate ideas, and make a difference in their communities” (Herrmann et al., 2008). Nevertheless, it is for the most part unclear as how these skills are to be successfully embedded into the undergraduate curriculum and assessment (Brown, 2007), thus, enabling highly employable enterprising graduates to emerge. A number of challenges have been previously identified in creating environments which are highly conducive to fostering entrepreneurial graduates in the “Good Practice in Enterprise Development in UK Higher Education” report (Botham & Mason, 2007). These were further highlighted by Herrmann et al. (2008) and Hannon (2007) and include low levels of reach and scale of student engagement, funding issues to sustain and develop current activity, as well differing levels and experiences of entrepreneurship for graduates across Higher Education Institutes as figure one summarises below.
Queen’s University, having recently won the accolade of Times Higher UK Entrepreneurial University of the year has responded both by developing policies relating to graduate enterprise skills, and by designing and delivering a range of teaching and learning initiatives that address the development of these skills directly through the vehicle of entrepreneurship education. It is thus, recognised that “entrepreneurship education can both accentuate individual achievement, and provide opportunities for team-work and the development of other ‘soft’ skills that are so valuable to business and society today” (Herrmann et al., 2008). Indeed, entrepreneurship education is embedded in the fabric of Queen’s University Belfast which recognises that an entrepreneurial identity is essential if Queen’s graduates are to compete effectively in the global economy. This is in line with Gibbs’s (2000) recommendation that “if ... entrepreneurship is really to be embedded in the education system then it must be reflected in the culture of the education institution itself” and not as “an add-on to the curriculum”. This entrepreneurial approach is illustrated by the number of entrepreneurial students winning major prizes, award-winning student societies, a top ranking UK knowledge transfer unit, and excellent local and international links. The commitment to providing entrepreneurship education and training that is rooted in the very ethos of Queen’s University forms the basis of this success. Indeed, Queen’s Education Strategy for 2008-2011 emphasises that it “must promote creative thinking allied to enterprise and innovation”.

Queen’s is dedicated to ensuring that as part of a fully rounded student experience, it offers the opportunity for students to develop a repertoire of enterprise skills. It has pioneered a model of Entrepreneurship education within the curriculum which is now embedded in over 100 pathways, reaching more than 10,000 students across all faculties and schools. A series of innovative and experiential pedagogies, individually tailored to each discipline, are developed with discipline co-ordinators and supported with a series of publications/online social networks at both undergraduate and postgraduate levels. These pedagogies often encourages “learning: by doing; by exchange; by copying (and learning from the experience); by experimentation; by risk taking and ‘positive’ mistake making; by creative problem solving; by feedback through social interaction; by dramatisation and role playing; by close exposure to role models; and, in particular, interaction with the outside/adult world” as Gibb (2000) advocates. This award-winning initiative has been hailed an exemplar model and provides each student with a certified qualification. Student demand has led to the creation of a unique Masters in New Venture Creation which will be supported by a new incubation unit in the Students’ Union (Thompson et al., 2009; Gibson et al., 2009A). Moreover, entrepreneurship training is also delivered to our partner Teacher Training Colleges to advance the development of enterprise education across all levels of education (Gibson et al., 2009B). An innovative MSc in New Venture Creation, as a prime example of continuing development in the curriculum, was introduced this academic year (Gibson et al., 2009a). A role models panel included 16 of the region’s most successful entrepreneurs that added value to the enterprise
teaching on a regular basis by presenting their experiences to students, integrating practical experiences with the taught curriculum. Consequently, the provision of this panel offered “strong links with and input from entrepreneurs in all sectors … essential to align university curricula to the needs of employers” (Herrmann et al., 2008). Thus, students were able to learn from those who had practical and current expertise offering a crucial link between theory and practice (ibid).

These efforts have led to over 500 students directly engaging in business activity across numerous diverse areas. These include availing of Student Business Clinic support, engaging with entrepreneur role models, starting their own enterprise and attending and competing in business planning programmes. As a result, several of our entrepreneurial students have been successful both nationally and internationally. Moreover, Enterprise SU promotes enterprise opportunities for students within Queen’s Students’ Union. It is designed as an interactive, informative and accessible space to enable students to develop their enterprise and employability skills. The Centre has hosted a range of commercial and social enterprise events and activities to complement and extend the curriculum based effort. A new incubation unit within the Students’ Union complements the work of the Centre. The integrated efforts of both the curricular and non curricular based activities have been the catalyst for four student-led entrepreneurial societies, one of which, Queen’s SIFE, has been recognised both locally and nationally for its excellence. Thus, a myriad of opportunities are offered to students to develop their enterprising experiences that allow for experimentation with new ideas and concepts. They can also be a source of practical problem solving, opportunity spotting, project management, budgeting, communication, team-work, coping with pressure and managing complexity; all of which are skills in demand by employers”.

This summary aims to showcase the depth and breadth of entrepreneurial activity that permeates Queen’s University. This ranges from the support of senior management and influential stakeholders to award winning entrepreneurial students and societies, all empowering the University’s graduates, which will ultimately underpin Northern Ireland’s drive to establish itself in the global market place.

Conclusion

Given that we are in the midst of considerable economic and social structural changes, with the transfer to service and knowledge-based economies, as well as globalisation coupled with societal challenges such as environmental sustainability, all of which demand “innovative and entrepreneurial responses; not only to deal with such challenges, but to create opportunities from them” (DIUS, 2008a). Higher Education Institutes are recognized by the UK government as potential catalysts of economic and social growth (DIUS, 2008b), with a particular emphasis on their crucial role of unlocking the talent of our young people in order to thrive in today’s global economy. Broad initiatives to develop and enhance our graduate’s enterprise skills such as those carried out at Queen’s University Belfast all help contribute to this agenda. Indeed, graduates are viewed as the “key to national growth” whereby “inspired, self-confident, talented entrepreneurial graduates are more likely to find and lead dynamic new organisations and social ventures and to have the capacity to transform the organisations they lead and manage” in an increasingly complex and uncertain world (Herrmann et al., 2008). Nevertheless, creating entrepreneurial graduates is far from an easy task with several challenges facing HEI’s at the present time. Steps in the right direction include creating an enabling institutional environment, engaging stakeholders both inside and outside the university, as well as developing entrepreneurial teaching and learning practices (Herrmann et al., 2008). All of which Queen’s University have implemented effectively and consequently, were awarded the accolade of Times UK Entrepreneurial University of the year.

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Restructuring Aboriginal Education in Canada for Enhancing Human Resource Development, Employability, Equity and Social Justice

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Most of Canada’s indigenous population have been disadvantaged and marginalized through misconceived colonial educational policies in support of prevailing socioeconomic and political privileges. These policies produced a legacy of dysfunctionalism among Canada’s aboriginal population. The psychological harm of an alien education system that devalued aboriginal culture is enduring and problematic for Canadians. Aboriginal people are aware of the benefits of education and its relationships to development. However, only through a restructuring of education can their development be successful. This ideological shift from a linear, technocratic, non-participative system into a holistic, collaborative, ecological system is rooted in aboriginal perspectives. This approach, advanced in aboriginal policy papers and a Royal Commission Report, is viewed as a watershed in aboriginal education policy development. Decolonization policies focusing on devolution, human resource development, collaborative partnerships with industry and institutional bodies, and culturally relevant educational strategies emphasizing aboriginal perspectives are characteristics of the new paradigmatic shift.

This presentation uses ethnographic research methods such as personal lived experiences, field observations of educational programs, and an analysis of policy papers and educational documents. From this critical perspective, the objective is to assess the arguments, developments, processes and results of the initiatives undertaken to restructure education to improve the human conditions and achieve equality and social justice for aboriginal people.

The study reveals that restructuring initiatives have made progress in conceptual thinking, strategic gains with governments and institutions, increased site-based management and achievement levels, increased employment and most importantly, enhanced optimism. However, more needs to be done before aboriginals can take their rightful place in Canadian society.

Keywords: Holistic, Education, Aboriginal Perspectives, Human Resource Development, Devolution
Introduction and Background: Context of the Study

Canada’s indigenous people constitute a significant minority in Canada and are resident in every region of the country with majorities in the north on Indian Reserves which are special areas set aside for Aboriginal people. In this paper, the term Native, Indigenous, First Nations, Aboriginal and Indian are used interchangeably. In the western provinces the aboriginal populations are highly visible with over 15% in Manitoba and Saskatchewan. Migration from the reserves into urban centers such as Winnipeg, Calgary and Saskatoon, have resulted in larger resident Native populations. As a result, the urban non-aboriginal school jurisdictions are experiencing rapid growth in their Native student populations. This demographic is a result of a high growth rate in the Aboriginal population, (Preston, 2008). Census data for the period 1996 – 2006 show that the total Canadian population increased 9%. At the same time, the aboriginal population increased by 45%. Census statistics reveal a population structural change. In Manitoba, for instance, 26.4% of the population under 5 years is Aboriginal and 25.9% of all children under 15 are Aboriginal. Furthermore, 52% of the Aboriginal population in Manitoba is less than 24 years old compared to 31% for the non-aboriginal population. This composition reflects a change in the nature of the student population and does have serious consequences for the provision of both education and social services.

The creation of Indian Reserves, development of treaties and passage by parliament of the Indian Act provided a legal framework that codified subsequent relationships between federal/provincial governments and the Aboriginal peoples who were now registered as “Indians.” The codified system allowed for the development of residential schools led by churches. The residential school system that operated for over a century was perhaps the most horrific institution encountered by Aboriginals and represents, for many, the darkest chapter in their association with Euro-Canadians. Children were taken away from their homes at a very early age, sometimes forcibly and placed in residential schools far away from their families. The damage done to Aboriginal children have been well documented (Binda, 2001; AFN, 1994a, b). Physical, sexual and emotional abuses were rampant. Native languages were forbidden resulting in massive language loss as well as critical parenting skills. Intergenerational breakdown resulted in the alienation of generations of native youth. Many of them found it difficult to function as Indian while they were certainly not White. The propagation of a Euro-Canadian colonizing ideology was aimed at extinguishing Aboriginal culture and assimilating the people into the Canadian fold. The system managed to produce a society characterized by extreme dualisms and anomic dysfunctionalism. The theoretical nature of this reproduction of the mainstream social order has been explored by a number of postmodernist critical scholars (Apple 1982, 1995; Bowles & Gintis, 1970; Giroux,1983; Gutek, 2004).

Prior to European contact, the Aboriginal population had a holistic, pragmatic, functional system of learning for living that was rooted in oral tradition (Bear-Nichols, 1996). The Eurocentric model of education first introduced by the missionaries was aimed primarily to capture and transform the souls of the Aboriginal people who were viewed as heathens. British historian Arnold Toynbee (1946) encapsulates quite well this hegemonic, colonizing ideology of Europeans over indigenous people. Scholars have condemned this era of colonial aggrandizement and deculturation. Some notable Aboriginals have bluntly described the process as cultural genocide.

Teachers trained in a Euro-Canadian centric model generally lack the necessary knowledge and skills for successful instruction of Aboriginal students enculturated in a holistic world view. In many non-Aboriginal schools, the native children constitute over 40% of the student body. As a consequence of cultural differences between Eurocentric trained teachers and their Aboriginal students, many Aboriginal students under perform and frequently drop out of the education system (Binda, 2001; Preston, 2008; Richards, 2008).

The symbiotic linkage of colonial politics and education in support of the then prevailing ideologies, socio-economic and political order cannot be excused for the dysfunctional effects upon first nations as this legacy of exclusion and neglect remains with us today. More particularly, the psychological harm of an alien education system that devalued the indigenous culture has proven to be durable, persistent and problematic not only for First Nations but for the larger Canadian society as well. Social indicators show the extent to which Canada’s Aboriginal populations have been disadvantaged and marginalized. Aboriginals negatively suffer anywhere from 2-5 times the Canadian average in employment, income, child welfare cases, juvenile delinquency, death by fire, suicides, hospital admissions and incarceration in prisons. Examination of educational data reveals an even more disturbing phenomenon. The school drop out rate is close to 50%. Academic achievement levels are much lower than mainstream Canadians and graduation from high schools, colleges and universities are dismally low. In one high school, for instance, a new principal examined the total graduation rate over the last fifteen years in his school with an Aboriginal student body of over 30%. Of the 120 graduating students, only 5
were of Aboriginal descent (Principal, personal communication, December, 2009). This is not surprising given that the schools with large numbers of Aboriginal students have very few or no Aboriginal teachers who could be identified as role models. As Table 1 shows Aboriginal participation in key employment education sectors is quite low. The extent of the dualisms, inequalities, unfairness clearly show an absence of social justice for the Aboriginal community and a major problem for governments in Canada. Similar conditions exist in other countries such as Australia and New Zealand (Jordan, 1992; Smith, 2003)

Conceptual Change and Development

As early as the 1960s, there began a call for change. A fortuitous convergence of circumstances brought the problem to an explosive firestorm in 1969 when the government introduced a White Paper that attempted to abolish the Indian Act and integrate Aboriginals into the larger Canadian society. The Indians would have none of this, for in the proposed policy, they saw the erosion of their treaty rights negotiated with the British Crown as sovereign nations. The political firestorm led to the development of radical but constructive proposals in the form of seminal policy papers by First Nations, more notably, Indian Control of Indian Education (1972) and Wahbung–Our Tomorrows (1971). These documents whose basic philosophy expounded parental responsibility, and community control were accepted by the federal government by 1973 and they have been viewed as a watershed in the history of Indian education policy-making in Canada.

The Native organizations argued emphatically in their position papers for equity, equality and social justice, insisting that without community control by First Nations themselves, no education system can be truly successful, if those most directly concerned have no input into the system. After all, the principle of equality is a long-standing and very important part of the Canadian tradition. However, other mainstream Canadian communities did have control of their own education, constitutionally entrenched in Section 93 of the Canadian Constitution Act. The publication of the report by the Royal Commission on Aboriginal Peoples in 1996 poured more oil on the fire by promoting local control of education. The federal government, looking for a way out of this dilemma, accepted the policy papers on local control and began to vacate the education field turning control over to the Indian Bands. The devolution process had begun. In the fall of 1995, the last of the federal schools in Manitoba came under local control with the federal government acting as a funding agency only. By the end of the 1980’s, all Native residential schools in Canada had closed their doors. A new era in Aboriginal education had begun.

Purpose of the Study and Theoretical Framework

Prior to and subsequent to the devolution process, Aboriginal education generated a great deal of interest. Yet most of the writings and publications have been more phenotypic focusing on problems facing the education systems rather than a more genotypic approach to the issues. This paper, therefore examines from a critical perspective the arguments, developments, processes and results of the initiatives undertaken to restructure the education system in order to improve the human condition and achieve equality and social justice for Aboriginal people. This involves the study of personal life stories, accounts, narratives, documents, programs and field observations and surveys. The decolonization interpretive approach aims to provide a leitmotiv into what is happening in Aboriginal education (Kumar, 2009). Decolonization as defined in this paper is an active process of organized thought and action against the imposition of hegemony and colonization of indigenous cultures, institutions and socio-economic enterprises. As Chief Wesley (1993) stated in an address to his fellow Native chiefs, it begins with a cleansing of the mind from the oppressors thoughts and actions.

The theoretical framework, as noted before, draws heavily upon the Aboriginal position papers for a more holistic methodology as reflected in Indigenous Pedagogy (Grande, 2007; Cajete, 1994). Some scholars prefer the Paulo Freirian (Freire, 1970) method of conscientization which is seen as being more proactive in the New Zealand context (Smith, 2003).

The primary aim of this research was to use multiple data collection methods from an ethnographic perspective to provide a clearer picture as to the effectiveness of the restructuring strategies for improving Aboriginal education. The study focuses on the following:

1) Analysis of the Federal Government devolution process.
2) Analysis of the impact of Aboriginal teacher education programs and the inclusion of Aboriginal Perspectives in course content.
Discussion and Findings

The Devolution Process

The conceptual framework for devolution was a fundamental feature addressed in several Aboriginal papers. For example the First Nations document, Tradition and Education: Towards a Vision of Our Future (AFN, 1988) represented a significant consolidated vision and direction for Aboriginal education with key guiding principles. Issues of jurisdiction, quality education, management and resourcing are tenets of the concept of Aboriginal self-government. The First Nations people have argued that jurisdiction over education is an inherent right of self-government, an aboriginal right which they never relinquished. They contend that adequate resourcing is the key to quality education. The federal government responded to this request and has moved to alternative funding arrangements where bands now have more control and with fewer restrictions on the allocation and use of resources. If nothing else, it was the question of quality that led to the movement for Aboriginal control. The data presented earlier invariably outline the problem of poor quality education delivered to Aboriginal peoples. The First Nations now view the delivery of education from a holistic approach that incorporates a deep respect for the natural world with the physical, moral, spiritual and intellectual development of the individual. The First Nations state that “education will not truly belong to us until we can define how it is done, what is taught, and see our children come out of the school system well-skilled and sure of their identity” (AFN, 1994, p.1).

Management issues are invariably tied to jurisdiction, resource and quality. Skills for establishing, maintaining data bases and operating school systems are currently being developed to meet the need for a more responsive and efficient education system. Tradition and Education is now a guiding beacon for community control and education development in First Nations communities. Various Framework Agreements instituted with Aboriginal bands across the country have given back control to First Nations.

Progress has been made with band-controlled schools and with Native education in general. MacPherson (1991) who was asked by the federal government to review Tradition and Education commented that “the completion rate for Indian children at all levels of their schooling up to and including post-secondary, is significantly higher than it was two decades ago” (p.3). This success is perhaps reflective of what Biesta (1995) described as communicative pedagogy. Viewing this type of improvement from a postmodern perspective, Francois Tochon (1995) noted, a curriculum is a manifestation of human consciousness, reaching into the depths of the personal in the fight against hegemonies. The curricular thrust in aboriginal schools today certainly addresses the battle against cultural domination that previously existed.

In order to test the efficacy of local control, 100 residents in three northern Aboriginal communities were surveyed to measure six constructs- local control, school visitation, communication, student achievement, education systems and school curriculum. With the aid of a Likert-type interview questionnaire, Data were collected on the basis of sex, age, gender and occupation. Analysis of variance revealed no significant differences between the communities except for the construct on school achievement (p=.05). When the moderator variable of age was factored in, a significant difference (p=.05) between the communities was noted (see Tables 2 &3). Analysis of the simple descriptive statistics reveals a general satisfaction with the devolution process but much more needs to be done. Figure 1 illustrates the process of devolution taking place in the communities.

Teacher Education Programs and Aboriginal Perspectives Content

When the devolution process began in the 1970’s, most of the teachers were non-Native. In Manitoba, in 1970, only 10 teachers were Aboriginal out of a total of 12,000. There were many reasons for the virtual absence of native teachers in the school system, low completion rates of high school, a reflection of low levels of achievement, and very few Native professional role models for Native children. Other factors which have contributed to this very low representation include (a) high student drop out rates, (b) high turnover of staff (expatriate), (c) inflexible Euro-Canadian centric curriculum, and, (d) low parental and community participation.

To address this situation, several developments took place in the 1970s aimed towards providing training and certified Native teachers for positions throughout Manitoba, particularly in northern communities and later on across Canada. The primary objective was to reduce the critical shortage of Native teachers in communities where there was a majority of Native children. A secondary aim, later to become more important as expressed in a government Action Plan, was to develop human resources in the expanding Aboriginal populations. In subsequent years, teacher education programs (TEPs) were developed by several universities and often based in the Aboriginal communities, utilizing holistic methodologies with Aboriginal Perspectives. Brandon University
was a leader in this initiative. A historical study of the Brandon University Northern Teacher Education Program (BUNTEP) (Nicol, 2006) pointed out that such training not only provided teachers but qualified personnel for other jobs in the communities. To date there have been more than 1000 Aboriginal teacher graduates from the Brandon University community based programs.

Human capital development has been recognized as a major tool in development efforts. A study by the CD Howe Institute, a Canadian think-tank, on aboriginal training and employment found that employment rates doubled for Aboriginals who completed high school and university training (Richards, 2008). Schissel and Wotherspoon (2003) in a study of Aboriginal education stated, “Human capital theory draws attention away from people’s inherent limitations or characteristics in the sense that it acknowledges the need for a social or policy commitment to build upon and broaden existing capacities” (p.19). Binda (2001) noted in an analysis of this concept as it applies to Aboriginal education, that the principle has widespread support from numerous development agencies including the World Bank, the OECD, the UN and CIDA (Canadian International Development Agency). This principle has become a key development tool for improving Aboriginal conditions. Numerous other organizations, including resource companies, business and social agencies have embarked into new partnership agreements with First Nations for training and employment of Aboriginals to the mutual symbiotic benefits of all sides.

While Aboriginal attendance and graduation rates have increased significantly with the changes already identified, a large gap still exists between Aboriginals and Non-Aboriginals. A major problem was deemed to exist in the process of teacher training. Although Aboriginal teacher education programs exist in the province and across the country, most of the teachers in the education system are non-Aboriginal, trained largely in a Euro-Canadian centric model. Many teachers have no formal training in cross-cultural education. Given the influx of aboriginals into non-Aboriginal schools, the need for radical change in teacher training was identified. Accordingly, the Aboriginal Education Action Plan, introduced in 2004, called for changes that included employment enhancement. A mandated course in Aboriginal Perspectives in the B.Ed program became compulsory in the province of Manitoba in 2008. This was consistent with the changes suggested in the regional Western Canadian Protocol (WCP, 1993). This new course was designed and initially implemented with instruction for six separate groups of 2nd year B.Ed students, 91.4% of them being Caucasian and the rest Aboriginal.

While the course included some content on Aboriginal history etc, most of the program focused on pedagogical strategies in a cross-cultural context with holistic strategies and Aboriginal perspectives. (See Figure 2 – Medicine Wheel). A cohort survey of 84 students was conducted to measure the effectiveness of the course. The main focus of the course was to educate prospective teachers in the cognitive consciousness about effective strategies for the education of Aboriginal students. The survey followed standard research procedures approved by the University Ethics Research Committee and included interviews, a questionnaire as well as participant observations. A summary of some of the data is presented in Table 4.

While the survey from this group of student teachers revealed some initial hostility about the mandated imposition of the course, at the conclusion, most students felt that such training was needed, warranted, given the increases in the Aboriginal student population across the country. Our research found programs with similar goals across the country. For example, the Canadian Association of University Teachers (CAUT) has already held two conferences with the aim of “transforming the academy.” The recent conference identified the urgency that, “Post secondary institutions recognize cultural differences and Aboriginal learning needs and traditions, particularly the need to integrate and respect the importance of indigenous knowledge and the role Elders play in the educational process” (CAUT, Dec, 2009, p.8).

Writing in Education and Development, Garrett (1984) noted that the concept of education development is “concerned with change in the attitude of all, young and old, pervading formal educational institutions and the formal channels…” (p.2) this “mental climate” noted Pierre Pradervand (in Garrett, p. 15) is probably the most important factor influencing people’s perceptions of the world and hence, their behavior. From his extensive study of development education for the Swiss government, Pradervand (1982) came to the conclusion that the holistic vision of education, so lacking in Western industrialized education systems will lead, ironically, to a new definition of efficiency qua improved human conditions. Accordingly, efficiency, a key concept of bureaucracy and management and a major factor in the devolution process, will be viewed in terms of a wholesome process, community and ecological harmony, solidarity and wellness, all ingredients of the alternative paradigm.
Conclusion

The first step which took place in the devolution towards self-government has been the establishment of Local control of Education in Native (First Nations) communities. In assuming the responsibility for their education, as opposed to having it under the control of the federal government, the First Nations communities took a major step forward in bringing together traditional and contemporary values in education. In this context, a partnership evolved between the community, the university, industry and the various governments, committed to providing for the educational needs of the First Nations communities and their development.

Without Local control, the general non-interest in education which existed at the community level would not have changed to one in which there is active interest and participation. This element of change is one of the most important factors acting as a catalyst in the development of a responsive system of education and community development. While the University has acted as a major agent for change both Elders and community leaders have recognized the importance and relevance of education in the devolution towards self-government, and in the realization of a better social and economic future for First Nations communities. The result has been increased support for the expanding school system, modifying the curriculum to reflect the local environment, and promoting post-secondary education whereby the personnel needed in education, health, social services and economic development can be provided from within the communities for a more prosperous future.
FIGURES AND TABLES

**Table 1: Aboriginal Share of Employment in Key Education Occupations, Canada**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Aboriginal Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal share of overall Canadian population</td>
<td>3.9%</td>
</tr>
<tr>
<td>Main ten education related professions</td>
<td>1.3%</td>
</tr>
<tr>
<td>Administration in post-secondary</td>
<td>1.6%</td>
</tr>
<tr>
<td>Principals: elementary &amp; secondary</td>
<td>1.9%</td>
</tr>
<tr>
<td>University Professors</td>
<td>0.3%</td>
</tr>
<tr>
<td>Post-secondary teaching &amp; research assistants</td>
<td>0.3%</td>
</tr>
<tr>
<td>College and Vocational Instructors</td>
<td>1.5%</td>
</tr>
<tr>
<td>Secondary School Teachers</td>
<td>0.9%</td>
</tr>
<tr>
<td>Elementary and Kindergarten Teachers</td>
<td>1.6%</td>
</tr>
<tr>
<td>School and Guidance Counselors</td>
<td>1.0%</td>
</tr>
<tr>
<td>Instructors/Teachers of Disabled Persons</td>
<td>1.0%</td>
</tr>
<tr>
<td>Elementary &amp; Secondary School Teacher Assistants</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 1996 Census of Canada, HRDC Special Data

**Table 2: Perceptions of Local Control by Community**

<table>
<thead>
<tr>
<th>Source</th>
<th>ss</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Control</td>
<td>BG 0.8875</td>
<td>56.1017</td>
<td>2</td>
<td>.4437</td>
<td>0.71</td>
</tr>
<tr>
<td>School Visitation</td>
<td>BG 2.3687</td>
<td>76.0848</td>
<td>2</td>
<td>1.1843</td>
<td>1.46</td>
</tr>
<tr>
<td>School Board Communication</td>
<td>BG 2.8811</td>
<td>97.1394</td>
<td>2</td>
<td>1.4805</td>
<td>1.39</td>
</tr>
<tr>
<td>School Achievement</td>
<td>BG 2.1911</td>
<td>33.2071</td>
<td>2</td>
<td>1.0955</td>
<td>2.94</td>
</tr>
<tr>
<td>Education System</td>
<td>BG 1.0598</td>
<td>64.8782</td>
<td>2</td>
<td>0.5299</td>
<td>0.77</td>
</tr>
<tr>
<td>School Curriculum</td>
<td>BG 0.3154</td>
<td>37.0008</td>
<td>2</td>
<td>0.1577</td>
<td>0.40</td>
</tr>
</tbody>
</table>

* BG Between Group
  WG Within Group

**Table 3: Community Perceptions of Local Control by Age**

<table>
<thead>
<tr>
<th>Source</th>
<th>ss</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Control</td>
<td>BG 1.4315</td>
<td>55.1988</td>
<td>3</td>
<td>0.4417</td>
<td>0.74</td>
</tr>
<tr>
<td>School Visitation</td>
<td>BG 7.6130</td>
<td>69.5052</td>
<td>3</td>
<td>2.5376</td>
<td>3.25</td>
</tr>
<tr>
<td>School Board Communication</td>
<td>BG 0.1548</td>
<td>95.7376</td>
<td>3</td>
<td>0.9516</td>
<td>0.05</td>
</tr>
<tr>
<td>Education System</td>
<td>BG 0.2461</td>
<td>62.6785</td>
<td>3</td>
<td>0.0820</td>
<td>0.12</td>
</tr>
<tr>
<td>School Achievement</td>
<td>BG 0.4161</td>
<td>34.8805</td>
<td>3</td>
<td>0.1387</td>
<td>0.35</td>
</tr>
<tr>
<td>School Curriculum</td>
<td>BG 0.3903</td>
<td>34.7791</td>
<td>3</td>
<td>0.1267</td>
<td>0.33</td>
</tr>
</tbody>
</table>

**Figure 1: Composite Model of Decentralization**

**Figure 2: Medicine Wheel**


**Table 4: Survey Summary Data**

<table>
<thead>
<tr>
<th>Knowledge categories</th>
<th>Before course: little</th>
<th>Before course: some</th>
<th>After course: little</th>
<th>After course: some</th>
</tr>
</thead>
<tbody>
<tr>
<td>history</td>
<td>20.6/14</td>
<td>57.4/39</td>
<td>22.1/15</td>
<td>0/0</td>
</tr>
<tr>
<td>treaties</td>
<td>54.4/37</td>
<td>55.3/24</td>
<td>10.7/7</td>
<td>1.5/1</td>
</tr>
<tr>
<td>education</td>
<td>36.8/25</td>
<td>52.9/36</td>
<td>10.7/0</td>
<td>0/0</td>
</tr>
<tr>
<td>current issues</td>
<td>20.6/14</td>
<td>87.4/39</td>
<td>22.1/15</td>
<td>0/0</td>
</tr>
</tbody>
</table>

References

Assembly of First Nations.
Much of the key to affective learning lies in the power of words that teachers use with their students. The interpretations of these words by individuals have often been overlooked by teachers. Words used by teachers to indicate one thing is often interpreted by students to mean something else. Much of this happens without the awareness of either party. Communication of actual feelings about the task and how the task is viewed by the two parties is often left unexplored. Miscommunication arises and individual are often labelled, resulting in the categorisation of them into certain ‘personality types’. Often in the classroom no true communication takes place between the teacher and the student. Emotions are not dealt with or are conveniently put aside for ‘more important’ cognitive learning so as to meet the learning outcomes and achieve the required pass rates.

According to Klein (2002), individuals generally experience negative feeling more intensely and more readily than positive ones. This seems to be a survival mechanism that enables us as more primitive people to survive in a harsh environment. In all, we as individuals prefer tragedy. As such in the classroom where students perceive they must be able to ‘survive’ the rigours of the course they are attending would tend to interpret what the teacher says in a threatening way no matter how many times it is repeated that it not mean as such. Because we are built neurologically to look for danger and think of our own survival, it is important that the affective part of learning be more incorporated into the classroom.

The workshop aims to provide an avenue to help teachers develop to become “reflective practitioners” in their classrooms. Reflective practitioners implies that these teachers would be able to reflect on and analyse the needs of their students and provide for those needs rather than use a prescriptive approach when teaching them. This workshop does not provide a method for teaching critical thinking but merely suggests a strategy.
WORKSHOP 2

Developing Peer Support as a Means of Enhancing the International Student Experience

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The workshop will expose participants to different types of student support and provides the different aspects of student support at different stages of international students’ experience. There will be a brief overview of emerging good practices in student support, followed by examples of the different aspects of student support provided by Edinburgh Napier and Sheffield Hallam Universities, and how the different structures of the Universities have led to different ways of addressing the student support issues. Participants will be given examples of peer support together with student views on preferred support strategies. Participants will be asked to consider the examples in view of their own context and suggest ways in which peer support could be used to enhance student experience. There will be a brief overview of future developments of student support in both universities and an opportunity for the participants to share their views and examples of peer support as a way of enhancing student experience.
WORKSHOP 3

How to Better Prepare Students for E-Learning and Avoiding Common Pitfalls

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The term ‘e-learning’ is used in a variety of ways that is often used interchangeably with terms such as online learning, Computer-based Learning (CBT), Web-based Training (WBT), Online Resource-based Learning (ORBL), Networked Collaborative Learning (NCL), Computer Supported Collaborative Learning (CSCL) and others (Islam, Chowdhury, & Islam, 2009, p.519). These days most universities have begun to offer technology enhanced teaching in some form or other in order to enhance the learning experience and /or facilitate better learning amongst students. Today many technologies can be, and are, used in e-learning, such as wikis, blogs, reflective journals, chat rooms, collaborative software and e-portfolios. No doubt all this helps to inculcate good academic habits, promotes self learning and improves students’ study skills by the engagement in activities such as group work, searching, sifting and retrieving information and communicating with others. “The essential elements of learning online are an online faculty member, and a self-motivated group of students. The emphasis should be on high level of interaction, a great deal of collaboration, and a heavy emphasis on practical applications that meets the needs of individual students” (Arsham, 2009, p.44).

There are however a number of pitfalls with e-learning which require attention otherwise online courses can result in ineffective teaching, limited learning and unsatisfied students.

The goal of this session is to initiate discussion and share ideas on the effectiveness of online strategies that do and do not work in real life. This workshop intends to stimulate discussion on the challenges and pitfalls faced by many institutions today of clambering hastily and without much thought on the e-learning bandwagon.
WORKSHOP 4

Tailoring Research Articles to Journals

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Knowing the written and unwritten rules of the game in getting journal papers published is necessary to compete for research space in the international research discourse community. This workshop aims to provide guidelines on tailoring research articles to journals to increase chances of getting journal papers published. The theoretical knowledge for the workshop is drawn from research on conventions of research articles and studies on why papers are accepted or rejected. The workshop begins with a review of reasons for manuscript acceptance and rejection. This is followed by a presentation of how different parts of a research article are adjusted to fit targeted journals. Finally, several case studies are used to show how authors tailor their papers to targeted journals in terms of the relevance to the journal, novelty and soundness of research, methodological approach and, last but not least, the writing style and format requirements of journals. This workshop is designed to help participants develop a checking mechanism to ensure that their submissions are appropriate for the targeted journal and will get a fair chance of review. The workshop will benefit academics who are embarking on writing of research papers as well as academics accustomed to writing conference papers and who are venturing into journal paper writing.
Effect of Medical Student’s Emotional Intelligence on Academic Performance

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Emotional Intelligence is the ability to manage emotions so as to promote both better emotional and intellectual growth. There have been studies reporting the positive associations of emotional intelligence and better social behaviour amongst the adolescence, more dedication of the employee toward their employer in university and business entrepreneur, more effective leadership in the aborigines, better examination results of the college students, higher professional achievement of paramedics and better doctor-patient communication and relationships leading to higher patient satisfaction and lesser litigation. However, there was no research in our country and few in the world that studied the influence of this concept in the medical schools. Thus, it is important to discover the effect of emotional intelligence on medical student’s academic and clinical performance. Tools for emotional intelligence measurement abound and most of the previous studies utilised largely those that of self-report questionnaires. This study will use the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) which is an ability-based test that was well validated and demonstrated to less overlap with other psychological traits. The results of this study will better inform us towards a better readjustment of emphasis on medical student’s personal development or a more balance curriculum with EI training that would provide a great make-over on the quality of future doctors in the country.
Dissemination of good practice ideas has always been a challenge in large institutions of higher education. At Manchester Metropolitan University we explicitly adopted and applied the concept of a 'community of practice' to support our work in bringing dispersed professionals together in pursuit of shared interests and ambitions. We used new communication technologies to create virtual communities across a range of areas of interest and institutional priority.

We were open and tolerant in our approach, keen to recruit 'lurkers' and to provide opportunities for 'legitimate peripheral participation'. We empowered the emergent communities by providing access to project funds.

Some of our CoPs flourished, others failed to develop. This poster submission reports on the experience and on action research that sought to fine tune the area of activity.
The present study was to explore and to investigate the learning tendency of low achievement students in University in central Taiwan.

In order to explore the learning tendency of low achievement students enrolled in university, seventeen students who had half credit hours failed were interviewed, which generated 41 learning traits and were classified into 9 groups. A total of 425 students, including high achievement and low achievement students participated in this study.

This study showed that the sex of students, the entry channel of students and the work hours had effects on students’ academic performance. In addition, the average score on 9 groups of learning tendency of high achievement students was significantly different from those students with low achievement. This study suggested that students with high risk learning tendency may lead to low achievement in school. If these students are found as early as possible, the intervention can be provided in advance which is able to prevent low education effectiveness on higher education.
This study implemented peer-cooperative small group and peer assessment learning module to assist 46 university students with the major of early childhood education to develop creative art activities for future instruction. The involved students were divided into eight groups, and each group had 5-6 students. Each group was asked to design a creative art activity for kindergarten children. Each group’s activity plan was assessed by the other groups in three times. The initial and second submissions of activity design were encouraged students to revise them after taking other groups’ comments and suggestions. In the final peer assessment, the students needed to evaluate the other groups’ teaching activity in real kindergarten classroom. The whole peer assessment process took about three months.

The results from content analyses of peer comments provided by each group showed that the frequency of suggestion especially on meta-cognitive was increasing across three times of peer assessment. Comparing the scores of three times assessment, we find students significantly progressed. Their activities became more creative, used more teaching strategies and more suitable for the developmental stage of kindergarten children.
Electronic learning generally (e-learning) or web-based learning specifically has emerged and broadly used in education to facilitate and enhance learning as well as teaching process. However, there is insufficiency emotional aspect consideration in traditional e-learning system platform which in turn emotion is a significant criterion in learning process. Emotion could affect human thought and further give great impact on learning. Thus, to overcome this limitation, this paper propose e-learning system model that integrate with affective computing capabilities. This paper also aims to use aesthetic elements in the web-based learning interface design to stimulate student emotion. This is due to aesthetic values could attract students’ attention, engage the students to use the system, maintain the students’ interest and affect students’ emotion while learning.
Use of 3-D Printing Models to Enhance the Classroom Learning Concepts of a Casting Component

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The use of CAD software to design a casting pattern and the mold, followed by printing these components using a 3-D printer resulted in the student being able to see, touch and feel the design that they had created. By pouring molten metal into the 3-D printed mold, students were able to observe some of the defects in the casted components. This project allows the students to print the parts that are usually too costly and time consuming to produce using traditional methods and at the same time provides a good hands-on learning experience in understanding the fundamental concepts of casting.
Peer Review of Biology Final Year Project - A Platform for the Development of Critical Thinking

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In our program, students enrolled in the Final Year Projects (FYPs) are required to do research projects for a year. At the end, each student is required to do a poster presentation, and submit a written report. We found that some students could not communicate and present their ideas effectively. Besides, they might only focus on their own projects without attempting to learn from the others. In view of these, we decided to add in two new activities - “Online Peer-Review of Poster Presentation” and “Round-Table Discussion”. These can provide additional learning opportunities for the students, mainly through peer evaluation, to achieve improvement in the following aspects: (i) critical thinking, (ii) broader knowledge on different research designs and methodologies, (iii) communication and presentation skills, and (iv) self reflection.
POSTER 8

Promoting Students’ Personal Development through Biology Co-Curriculum in Partnership with Non-Academic Units

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Hong Kong University of Science and Technology
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This study focuses on the coordination of co-curriculum development and embedment of it in regular credit-bearing courses under the Bachelor Degree (Biology) Program in the Hong Kong University of Science and Technology.

Since 2008, our Department has organized a number of co-curricular activities to enrich our undergraduates’ learning experience and to promote their self-development. In one of these activities, which is collaborated with the Hong Kong Wetland Park, the students receive eco-tour training and are required to provide eco-tours and other voluntary services there. This year, we offer the project as a credit-based elective course. We believe that embedding soft skills and service learning in the curriculum can promote the students’ self-development and enhance their interest in their major study.

In Hong Kong, the university system will be transformed from a 3-year curriculum to a 4-year one in 2012. We anticipate that the new curriculum would offer more flexibility and extensive embedment of co-curricular activities in regular courses.
Department of Biology in HKUST has been taking a leading role in science school to implement the Outcome-Based Education (OBE) philosophy and methodologies in the development of our curriculum. In the past two years, we have carried out a series of projects covering the three basic elements of OBE: Objectives, Delivery and Assessment. First, after the comprehensive consultations with various stakeholders of biology program, eight intended learning outcomes (ILOs) covering both academic requirements and soft skills were determined. Second, we reviewed our existing curriculum to see how we have been delivering the ILOs by course objectives mapping. Last but not least, since the summer of 2009, the program assessment plan is developed and is under implementation. It focuses on evaluating the overall effectiveness of the program, closing the cycle of outcome based education stages. In 3 years, each ILO will be assessed by one direct and one indirect method.
Sustainable Quality Assurance for an Annual Professional Body Programme Review Visit

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This poster shares innovative practice to support annual programme review by a UK professional body in the School of Nursing, Midwifery and Social Care. Previously the School provided a combination of paper evidence and oral presentations that resulted in annual collection of extensive paperwork, much of which was neither consulted nor read. In the interests of efficiency and effectiveness, it was decided to present a combination of oral presentations, paper and electronic evidence for the review this year. The setting up of a tailored SharePoint represented not only a large saving in the amount of paper required but also staff time to required print, collate and review extensive paperwork. Our approach to selection of suitable material for the SharePoint, the advantages of electronic evidence and our reflections on the process are explored on the poster. This sustainable approach revealed an additional benefit as we now have a readily accessible repository of key information which can be easily updated and amended for ongoing evaluation and future reviews.
Collegial Conversations: Enhancing the Teaching Environment in Humanities and Teacher Education

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Research into one’s own teaching practices, in order to improve the student and academic experience, occurs preliminary to and alongside change in this area. This poster reports on a year long project in which a group of academics from Teacher Education and the Humanities, at a large regional university in Australia, worked collegially on a process of Peer Review designed to illuminate and improve over time one’s own and each other’s teaching practices including assessment, evaluation and active learning.

The research objectives were to enhance teaching practice through the reciprocal provision of structured feedback in a collegial environment, to highlight the institutional value of teaching by providing an explicit forum for peer support and to investigate the intra-disciplinary collaborative approaches to reciprocal peer review. The researchers were initially encouraged to use a tick box survey style of data collection however this was a format that none on the team were comfortable with as they found it too mechanical and removed from the informants. The team focused instead on developing an alternate methodology that used taped and transcribed conversations, peer meetings, peer viewings and feedback of lectures and tutorials, small group meetings and regular team meetings.

The research indicated the benefits and complexities involved when staff actively engage in collegial and supportive partnerships designed to facilitate professional development. Discussion of teaching and reflection on their own and each others’ teaching practices, the need for increased attention directed towards student engagement and practices to facilitate this, and an increased understanding and appreciation for the challenges involved in the development of reciprocal interdisciplinary peer review processes, were outcomes that have lead to the voluntary continuation of the project and an invitation by the university to apply for another teaching and learning grant to further explore this issue.