

IHE2010

IADIS
INTERNATIONAL
CONFERENCE



INTERNATIONAL
HIGHER
EDUCATION

Proceedings

Edited by:
Heling Huai
Piet Kommers
Pedro Isaías



iadis

international association for development of the information society

Co-Organised by:



Curtin University

**IADIS INTERNATIONAL CONFERENCE
on
INTERNATIONAL HIGHER
EDUCATION
(IHE 2010)**

**PROCEEDINGS OF THE
IADIS INTERNATIONAL CONFERENCE
on
INTERNATIONAL HIGHER
EDUCATION
(IHE 2010)**

PERTH, AUSTRALIA

29 NOVEMBER – 1 DECEMBER, 2010

Organised by

IADIS

International Association for Development of the Information Society

Co-Organised by



Curtin University

Copyright 2010

IADIS Press

All rights reserved

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Permission for use must always be obtained from IADIS Press. Please contact secretariat@iadis.org

Edited by Heling Huai, Piet Kommers and Pedro Isaías

Associate Editors: Luís Rodrigues and Patrícia Barbosa

ISBN: 978-972-8939-32-8

TABLE OF CONTENTS

FOREWORD	ix
PROGRAM COMMITTEE	xi
KEYNOTE LECTURES	xiii
PANEL	xiv

FULL PAPERS

SAUDI INTERNATIONAL STUDENT'S EXPERIENCE OF TRANSITIONING FROM A GENDER SEGREGATED CULTURE TO A MIXED GENDER ENVIRONMENT: "MIXING GENDER IS THE BEST" AN EMERGED THEM FROM THE INTERVIEWS <i>Ahmed Ali Alhazmi and Berenice Nyland</i>	3
DIALECTICAL TENSIONS IN INTERCULTURAL CLASSROOMS: WHEN DIFFERENCES MEET <i>Jiraporn Kerdchoochuen</i>	12
WEB 2.0 TECHNOLOGIES IN EDUCATION <i>Christina L. L. H. Chan She Ping and Tomayess Issa</i>	20
A GUIDE TO REMOTE TEACHING WITH INEXPENSIVE TECHNOLOGY: NOTES ON A MOBILE APPLICATION DEVELOPMENT COURSE <i>Caroline King and Chris Manford</i>	27
INTERACTING WITH E-TEXT IN MULTIMEDIA FORMATS BY ESB AND NESB STUDENTS <i>Xinyang Wang and Elena Verezub</i>	34
COLLABORATIVE CAPACITY BUILDING: A CASE STUDY OF THE DEVELOPMENT OF AN ON-LINE MODULE CONCERNING EMPLOYABILITY AND ENTREPRENEURSHIP <i>Dave Burnapp, Zhigang Yan, Omar Ahmedmia, Shaowei He and Wei Zhao</i>	41
USING AND RESEARCHING WITH INNOVATIVE TECHNOLOGIES IN A HIGHER EDUCATION MULTICULTURAL COURSE <i>Diane L. Judd, Inez A. Heath and Mark J. Fenster</i>	49
BLENDED LEARNING INTERNATIONALIZATION FROM THE COMMONWEALTH: AN AUSTRALIAN AND CANADIAN COLLABORATIVE CASE STUDY <i>Shelley Kinash, Susan Crichton and Margaret McAvoy</i>	57

PREPARING INTERNATIONAL ICT STUDENTS FOR THE GLOBAL WORKPLACE: AN AUSTRALIAN EXPERIENCE <i>Carmela Briguglio and Peter Dell</i>	65
WORKING WITH A DIVERSE CLASS: REFLECTIONS ON THE ROLE OF TEAM TEACHING, TEACHING TOOLS AND TECHNOLOGICAL SUPPORT <i>Lincoln C. Wood and Hendrik Reefke</i>	72
A PEDAGOGICAL FRAMEWORK FOR SUCCEEDING IN A CROSS-DISCIPLINARY PHD <i>Hussein A. Abbass and Eleni Petraki</i>	80
TEACHING BUSINESS ETHICS TO POSTGRADUATES DOES IT MAKE A DIFFERENCE? AN AUSTRALIAN VIEWPOINT <i>Theodora Issa and David Pick</i>	87

SHORT PAPERS

EXPERIMENTAL STUDY ON MOBILE GAME-BASED LEARNING DEVELOPMENT TO GAME DESIGN COURSE <i>Syamsul Bahrin Zaibon and Norshuhada Shiratuddin</i>	97
COLLABORATION BY ACADEMIC INSTITUTIONS: AN INVESTIGATION FOR ACCESS TO ELECTRONIC INFORMATION <i>Tendani J. Lavhengwa and JS Van Der Walt</i>	103
INTERNATIONAL HIGHER EDUCATION INSTITUTIONS IN THE ARAB STATES: HISTORICAL DEVELOPMENT AND TRENDS <i>A. M. Abouammoh and A. A. Mazi</i>	108
AN EXPLORATORY STUDY ON PRE-SERVICE TEACHERS' PERCEPTIONS OF THE DIFFERENCES BETWEEN KNOWLEDGE AND BELIEF: IMPLICATIONS FOR HIGHER EDUCATION <i>Chwee Beng Lee and Timothy Teo</i>	113
HOW FAR AWAY HAVE WE MOVED FROM THE EDUCATIONAL LEGACY OF THE APARTHEID ERA? A CONCEPTUAL ANALYSIS OF CRITICAL ISSUES FACING STUDENTS AND TEACHERS OF AFRICAN DESCENT IN THE CONTEMPORARY SOUTH AFRICA. <i>Thidziambi Tshivhase-Phendla and Takalani Samuel Mashau</i>	118
CHINESE INTERNATIONAL STUDENTS' IDENTITY NEGOTIATION: A COMMUNICATIVE PERSPECTIVE <i>Bin Ai</i>	123
STRATEGIC DECISION MAKING PROCESSES IN UNIVERSITIES <i>Emilio Rodríguez-Ponce, Liliana Pedraja-Rejas and María Elena González Plitt</i>	129
AN INTERNATIONAL PHOTOGRAPHIC EXCHANGE, UNIVERSITY FOR THE CREATIVE ARTS UK, WITH NATIONAL INSTITUTE OF DESIGN, INDIA <i>Anna Fox and Natasha Caruana</i>	135

PREDICTING IN-SERVICE TEACHERS' USE OF TECHNOLOGY: APPLYING MULTIPLE INDICATORS, MULTIPLE CAUSES (MIMIC) MODELLING <i>Timothy Teo and Chwee Beng Lee</i>	139
--	-----

REFLECTION PAPERS

THE ROLE OF ICT IN TEACHING FOR ENHANCING QUALITY EDUCATION IN HIGHER EDUCATION: A CASE STUDY OF INDIA <i>M.L. Ranga, Dinesh K. Gupta and Roshan Lal</i>	145
INCORPORATING GRADUATE QUALITIES BY ADDRESSING THE DIVERSITY OF THE STUDENTS IN A FIRST SESSION PRE-UNIVERSITY COURSE <i>Pranit Anand</i>	149

POSTER

CHINESE UNDERGRADUATE STUDENT INDUCTION PROGRAM: AN AUSTRALIAN UNIVERSITY APPROACH <i>Grace Ang, Michele Doray, Rosemary Kerr, Glennda Scully and Werner Soontiens</i>	155
--	-----

AUTHOR INDEX

FOREWORD

These proceedings contain the papers of the IADIS International Conference on International Higher Education 2010 (IHE 2010), which has been organised by the International Association for Development of the Information Society and co-organised by Curtin University of Perth, Australia, 29 November – 1 December 2010.

The IADIS International Higher Education 2010 conference (IHE 2010) aims at the scientific, pragmatic and policy awareness among scholars who face the direct need to make their curricula more culturally fair. European exchange programs like the Erasmus Mundus, the U.S. Council on International Educational Student Exchange, and the Euro-American “Atlantis” program, they all envisage an urgent agenda on how to balance local with the more global criteria in higher education.

This conference helps you to build your networks and international consortia on how to be a key player in this emergent trend.

The following seventeen areas have been object of paper and poster submissions. However innovative contributes that do not fit into these areas have also be considered since they might be of benefit to conference attendees.

- Technologies for spreading learning around the world
- Higher Education and International student exchange
- Learning far away from home and close to your future colleagues
- Learning in multicultural contexts
- Virtual presence as option for extending the students’ learning space
- Formal and pragmatic obstacles and opportunities in student exchange programs
- Double- versus joint degrees
- Funding resources for staff and student exchange
- How to establish campuses as multicultural communities
- Coping with incompatibility in semester-, trimester and quarter year course periods
- Trade-offs between student exchange in the bachelor- versus the master stage?
- Will English be the default language for master courses around the globe?
- Does studying abroad imply “living together with local students”, or prefer “international student houses”?
- How to recruit highly talented students abroad?
- How to defend the yielded higher criterion to the access of regional- and local students?

- How to evaluate students' readiness for studying abroad?
- Acculturation: what preliminary intercultural need to be trained before been sent to a study abroad?

The IADIS International Higher Education 2010 conference (IHE 2010) received 95 submissions from more than 18 countries. Each submission was reviewed in a double-blind review process by an average of five independent reviewers to ensure quality and maintain high standards. Out of the papers submitted, 12 got blind referee ratings that published them as full papers, which means that the acceptance rate was below 13%. Some other submissions were published as short papers, reflection papers and in poster format.

Best papers will be selected for publishing as extended versions in the IADIS International Journal on WWW/Internet (IJWI) and in other selected journals.

The conference besides the presentation of full papers, short papers, reflection papers and a poster demonstration, the conference also includes a panel and two keynotes presentation from internationally distinguished researcher. We would therefore like to express our gratitude to Associate Professor Catherine McLoughlin, Australian Catholic University, Canberra, Australia and Dr. Theodora Issa, School of Management and School of Information Systems at Curtin Business School, Curtin University, Australia.

A successful conference requires the effort of many individuals. We would like to thank the members of the Program Committee for their hard work in reviewing and selecting the papers that appear in this book. We are especially grateful to the authors who submitted their papers to this conference and to the presenters who provided the substance of the meeting. We wish to thank all members of our organizing committee.

Last but not least, we hope that participants enjoyed Perth and their time with colleagues from all over the world, we hope that you can join us in our next edition of the IADIS International Higher Education.

Heling Huai, Foundation of New Silk Route and Dragon Travel Service, The Netherlands
Program Chair

Piet Kommers, University of Twente, The Netherlands
Pedro Isaías, Universidade Aberta (Portuguese Open University), Portugal
Conference Co-Chairs

Perth, Australia
29 November 2010

PROGRAM COMMITTEE

PROGRAM CHAIR

Heling Huai, Foundation of New Silk Route and Dragon Travel Service, The Netherlands

CONFERENCE CO-CHAIRS

Piet Kommers, University of Twente, The Netherlands
Pedro Isaías, Universidade Aberta (Portuguese Open University), Portugal

COMMITTEE MEMBERS

Aderbal Correa, Texas Tech University, USA
Adrian Opre, University Babes-Bolyai, Romania
Alina Popescu, Bucharest University of Economics, Romania
Andrew Proctor, University of Arkansas, USA
Andrzej Sokolowski, Cracow University of Economics, Poland
Benjamin Vergel De Dios, UNESCO Bangkok, Thailand
Bernadette Charlier, Université de Fribourg, Switzerland
Bernd Krämer, FernUniversität in Hagen, Germany
Bruno Peeters, Sint-Lucas School of Architecture, Belgium
Carmela Briguglio, Curtin University of Technology, Australia
Charles Dziuban, University of Central Florida, USA
Chris Bowerman, University of Sunderland, UK
Christopher Ziguras, Royal Melbourne Institute of Technology, Australia
Clarita R. Carlos, University of the Philippines, Philippines
Daniel Guhr, ICG (Illuminate Consultant Group), USA
Dave Burnapp, The University of Northampton, UK
Demetres Briassoulis, Agricultural University of Athens, Greece
Diana Stentoft, Aalborg University, Denmark
Dumitru Miron, Academy Of Economic Studies, Romania
Elsebeth K. Sorensen, Aarhus University, Denmark
Fernando Marinho, Universidade de Sao Paulo, Brazil
Francisco Garcia Novo, University of Seville, Spain
Frank Schiller, Technical University Munich, Germany
Gabriela Prelipcean, University "Stefan cel Mare" of Suceava, Romania
Gayle Calverley, Manchester University, UK
Giovanni Fulantelli, Italian National Research Council - Institute for Educational Technologies, Italy
Harrison Atagana, University of South Africa, South Africa
Hsin-Yi Kung, National Changhua University of Education, R.O.C.
"Iulianna Marchis, Babes-Bolyai University, Romania
James Uhomoibhi, Ulster University, UK

Janerik Lundquist, Linköping University, Sweden
 Jerzy Moscinski, Silesian University of Technology, Poland
 Jianhua Zhao, University of South China Normal, China
 Jiao Jianli, South China Normal University, China
 Joergen Bang, Aarhus University, Denmark
 John Casey, Digitalinsite, UK
 John Kenneth Davies, University of Brighton, UK
 John Perkins, Newman University College, UK
 Julie-Ann Sime, Lancaster University, UK
 Kathryn Richardson, ISANA International Education Association, Australia
 Kent Löfgren, Umea University, Sweden
 Kevin Brosnan, University of Stirling, UK
 Ki-jeong Lee, Hanyang University, Korea
 Lavinia Haiduc, Babes-Bolyai University, Romania
 Leonica Popescu, Romanian - American University of Bucharest, Romania
 Lilian Ciascai, Babes-Bolyai University, Romania
 Lone Krogh, Aalborg University, Denmark
 Manuel Ramiro Muñoz, Pontificia Universidad Javeriana, Colombia
 María Morrás, University Pompeu Fabra, Spain
 Mariana Nicolae, Academy Of Economic Studies, Romania
 Mauro Mondino, Hertie School of Governance, Berlin
 Merete Wiberg, Aalborg University, Denmark
 Michael Klebl, FernUniversität in Hagen, Germany
 Mihai Korka, Academy Of Economic Studies, Romania
 Mike Murphy, Dublin Institute of Technology, Ireland
 Napoleon Imperial, National Economic and Development Authority, Philippines
 Panos Panagakis, Agricultural University of Athens, Greece
 Patsy Moskal, University of Central Florida, USA
 Pedro Garcia Barreno, Universidad Complutense, Spain
 Rauli Puuperä, University of Oulu, Finland
 Rie Troelsen, University of Southern Denmark, Denmark
 Robert H. Desmarteau, Université du Québec à Montréal, Canada
 Rosie Kerr, Curtin University of Technology, Australia
 Roxana Marinescu, The Bucharest Academy of Economic Studies, Romania
 Sally Bradley, University of Lancaster, UK
 Sarah Todd, University of Otago, New Zealand
 Sirkka Erämaa, Mikkeli University of Applied Sciences, Finland
 Stavros Moutsios, The Danish School of Education - Aarhus University, Denmark
 Steliana Toma, Technical University of Civil Engineering Bucharest, Romania
 Terence Karran, University of Lincoln, UK
 Teresa Restivo, University of Porto, Portugal
 Tina Wilson, Open University, UK
 Tom Nyvang, Aalborg University, Denmark
 William Radford, Simon Fraser University, Canada
 Wolfgang Greller, Open University of the Netherlands
 Xiangyun Du, Aalborg University, Denmark

KEYNOTE LECTURES

21ST CENTURY LEARNING AND HIGHER EDUCATION PEDAGOGY: WHAT IS CHANGING AND HOW DO WE CAPITALISE ON EMERGING TECHNOLOGIES?

**By Associate Professor Catherine McLoughlin,
Australian Catholic University, Canberra, Australia**

Abstract

Several major technology trends that are playing a role in shaping the future of higher education globally are ubiquity, mobility, personalization and virtualization. This keynote address offers a global view of changes in higher education and a conceptual framework for understanding the challenges and opportunities involved in rethinking curricula to transform schooling for the 21st century. The rationale draws on changes in the global economy, the impact of ICT on communication, learning and everyday life and shifts in the outcomes expected of millennial learners. A contextualised conceptual framework for 21st century pedagogy and learning is proposed that includes a global, lifelong learning perspective powered by technological change and an evolving learning society.

TELOS OF HIGHER EDUCATION A CHARACTER BUILDER OR A QUALIFICATION PROVIDER

**By Dr. Theodora Issa, School of Management and School of Information Systems at
Curtin Business School, Curtin University, Australia**

Abstract

The Internet is about to undergo a fundamental change. The supply of IP addresses, used by every device connected to the Internet and analogous to a phone number, is rapidly dwindling and will be completely exhausted by around January 2012. A new version of Internet Protocol, known as IPv6, was standardised more than a decade ago but has not been widely adopted and thus the transition to IPv6 will be a bumpy one – if indeed it happens at all. Either way, the Internet tomorrow will be different from the Internet as we know it today. This presentation will explore why the transition to IPv6 has not happened in the way the technical community had hoped, will describe potential Internet scenarios in the medium-term, and will investigate some of the possible social and economic consequences.

PANEL

IS ART & DESIGN A GLOBAL LANGUAGE?

Sarah Jeans, Anna Fox and Hilaire Graham
University for the Creative Arts, UK

ABSTRACT

This panel will discuss the proposition that art and design is a global language. It will consider the nature of that global language how it enables exploration of ideas and creates opportunities to share cultural understandings to support work in a global marketplace.

KEYWORDS

Art & Design, Transformational Learning, Employability, Entrepreneurship

‘Imagination is central to understanding the unknown; it is the way we examine alternative interpretations of our experience by ‘trying on’ another’s point of view. The more reflective and open we are to the perspectives of others, the richer our imagination of alternative contexts for understanding will be’ (*Mezirow 2000 p20*).

Language and misunderstanding go hand-in-hand, even in a first language misinterpretation through nuance, mishearing, expectations etc are rife, and in multicultural situations the potential for confusion is multiplied. However Art & Design subjects are concerned with the visual, tactile and cultural response to a brief or circumstance.

Using art and design as a language or platform through which to explore ideas - visually and conceptually – of identity, commonality and difference can be employed creatively to engage and inspire students to respond to multicultural contexts and through that process allow them to synthesise their experiences. Language in art & design is not just a verbal language but a language of experiencing or an act of doing

This exposure to cultural difference can be transformational and enables students to re-position themselves as globally connected citizens. For their future careers, exposure of students to multiculturalism and the journey of self-reflection they experience, enhances their employability and entrepreneurial skills by opening them up to the potential of embracing difference within their work and through the realisation that a global perspective can enhance their work opportunities and give them a competitive edge in a global market place.

REFERENCE

Cranon, Patricia. *Understanding and Promoting Transformative Learning*. Jossey-Bass 2006
Meizrow, Jack. and Associates’. *Learning as Transformation: Critical Perspectives on a Theory in Progress (Higher Education)* Jossey-Bass 2000

Full Papers

SAUDI INTERNATIONAL STUDENT'S EXPERIENCE OF TRANSITIONING FROM A GENDER SEGREGATED CULTURE TO A MIXED GENDER ENVIRONMENT: “MIXING GENDER IS THE BEST” AN EMERGED THEM FROM THE INTERVIEWS

Ahmed Ali Alhazmi* and Dr Berenice Nyland

**PhD Candidate School of Education*

School of Education - RMIT University, Bundoora campus: Building 220, level 2, Room 38

ABSTRACT

One of the interesting phenomena in the context of Saudi international students undertaking their education in western countries is the transition from a segregated gender environment to a mixed gender environment. This paper draws on an ongoing PhD study that explores the experience of Saudi international students in adapting to a mixed gender environment. The research investigates the meaning that Saudi international students make of their experience in this new environment. The research methodology utilized a phenomenological approach and data was generated from four in-depth interviews. Findings from two initial interviews from pilot study are reported in this paper. Six aspects of the participants' experience have emerged from these interviews (figure 2). However, in this paper, I am only reporting one aspect that has not been addressed in the scholarly research on Saudi international students, namely “mixing gender is the best”. The findings were based on in-depth interviews with two Saudi international students, a male and a female, who are studying at Australian universities. Both students have been here for more than one year and the preliminary analysis indicated that they have had a positive experience relating to two resilience characteristics of adaptation: personal independence and self confidence. These are the most invariant factors that have influenced the positive experience that has resulted from them living in a mixed gender environment.

KEYWORDS

Saudi international students, international education, intercultural engagement, gender segregation, cross-cultural transition, Saudis overseas

1. INTRODUCTION

This paper draws on a ongoing phenomenological study that is attempting to understand how a Saudi student cohort experiences being in a mixed gender environment during their period of scholarship at Australian universities. In particular, the study is seeking to structure the essence of the experience of Saudi international students who come from a segregated gender environment to study in a mixed gender environment. The major question for this research is: *How do Saudi students experience being international students in a mixed gender environment?*

Already critical aspects of student experience have emerged from the preliminary analysis of pilot interviews. Six themes have emerged from the analysis of participants' responses describing their lived experience in a mixed gender environment (figure 2). The current paper focuses only on one theme: “Mixing gender is the best”. This quote comes from a statement made by one of the participants to describe how he is enjoying his experience in Australia. This theme was used to label participants' positive experience. In order to examine the positive experiences belonging to this theme the paper provides, first, a background discussion about the examined phenomenon and then follows with a discussion of the relevant literature relating to Saudi international students and the findings of the preliminary analysis.

2. THE RESEARCH CONTEXT AND ITS BACKGROUND

In 2009, Saudi Arabia was listed as the fifth highest country – after China, India, Korea and Germany – having students studying overseas. (Deputyship for Planning and Information, 2010) Today, according to a final report by the Saudi Arabian Ministry of Higher Education, there are more than 80,500 Saudi students studying abroad (Deputyship for Planning and Information, 2010). Most of these students are studying in western environments (Deputyship for Planning and Information, 2010). This number, however, is expected to increase to more than 140,000 sponsored students in 2015 (Mahboob, 2010) due to the recent decision to extend King Abdullah's scholarship program for another five years starting from 2010 (Ministry of Higher Education, 2010). The number of Saudi Students undertaking their education at Australian institutions has increased dramatically in the last three years. In 2007, there were approximately one thousand Saudi students enrolled at Australian universities (Australian Government, 2008); today, more than 12,500 are studying in Australia (Department of Foreign Affairs and Trade, 2010).

Compared to other international students, it could be argued that Saudi international students' experience is relatively unique for two reasons. First, most of these students are sponsored by the Saudi government and are offered financial and academic support. They therefore have less issues relating to such concerns as finding accommodation, employment and struggling with course fees. The second reason is that this student cohort has come from the most segregated gender environment in the world. They come from a social context where gender segregation is evident in almost every public and private institution (AlMunajjed, 1997, Mayer, 2000). For example, a single-sex school is the only available system in all types of schools in Saudi Arabia (private, public, general and religious schools); the situation is the same in universities and colleges. Most restaurants usually have two sections: one for men and one for families (where each family is seated in a separate, partitioned arrangement). Some restaurants cater for men only; there are none that cater for women only. This phenomenon is central to most people's social, academic, and political activities.

Two of the important questions that usually arise when we talk about this phenomenon are; why Saudi people are segregated according to their sexes? And how do Saudi people regard the mixing of the genders?

Although these two questions are important in order to contextualize the researched phenomenon, there is not enough space in this paper to clarify these; to do so, we need to look more closely at the phenomenon of gender segregation in Saudi Arabia and try to understand it in its historical and contemporary contexts which better to be discussed separately in another work.

However, in general sense, a quick glance at the dominating discourse in Saudi Arabia confirms that most Saudi citizens believe that gender segregation is a religious order by Allah (God) and his prophet (Mohammed – Peace be upon him). Consequently, they also believe that the mixing of genders is a sinful practice. This belief can be traced back to the Islamist movement in Saudi Arabia known as Wahabism revival that commenced approximately 270 years ago. Many examples can be given to illustrate how the clerics of the Wahabism revival are so extreme when they come across any gender issue (Al-Ashaikh, 2009, Ibn Baz, 2010).

However, Islamic resources such as the Quran and the Hadith, as well as previous historical practices, reveal that the phenomenon of gender segregation did not exist in the past as an Islamic order (Abu-Shuqqah, 1999, Fanjar 1987, Zant 2002). The Quran and other Islamic teachings clearly indicate that a woman has a right to education as does a man; she also has the right to work as long as her work does not harm herself or her family (AlMunajjed, 1997). In Islamic history, in the centuries prior to the Wahabism revival, women not only mixed with men in Mosques but also played significant roles in society (Abu-Shuqqah, 1999, Fanjar 1987, Zant 2002). So why does the phenomenon of segregation exist in Saudi Arabia today as a religious order?

Theoretically, Saudi social life is divided by 'men' into two separate worlds: the public world and private world. The public world is the area of business and political activity which is the man's domain (AlMunajjed, 1997). Therefore economic, political and religious activity is associated with the male. Women belong exclusively to the private domain. This space is associated with the home, kinsmen or family members, family life, intimate relationships, and gardens. The private world is usually considered a retreat, and sanctuary that man should keep safe and secure (Deaver, 1980). Therefore, Arab people are usually very sensitive to what belongs to the public and what belongs to the private domains (AlMunajjed, 1997). Another concept has developed from the notion of "sanctuary": *Ird*, referring to a woman's chastity and family honor. From my

perspective as a Saudi, it is the concept of Ird that has been most responsible for the practice of gender separation. According to Patai (1983), the concept of Ird appears to be a “secular value” rather than a religious one. The term does not appear in the Quran, but it existed among the pre-Islamic Arabs and has been mentioned in Hadith (the prophet’s speeches). According to Baki (2004), Saudis are more sensitive to Ird than to anything else, therefore their society has been structured to keep Ird within strictly defined limits that make it difficult if not impossible for it to be lost. Thus, many restrictions were made on women because the tribe’s and family’s honor tie-in directly and strongly with Ird. A woman will lose her Ird if she conducts adultery or even attempts to do so and if the Ird is lost it cannot be regained even after many generations. As a result, there are many restrictions on Saudi women in society. One of these restrictions is keeping a woman as far away as possible from a man who is not a family member, which is what is what gender segregation achieves. Wahabism scholars argue that gender segregation is an Islamic teaching because Islam encourages chastity and virtue and the importance of respecting a person’s Ird. For Wahabism scholars this implies gender separation; the importance of protecting Ird has led them to slide into a belief that gender separation comes from basic Islamic teaching (AlMunajjed, 1997, Baki, 2004, Fanjar 1997, Patai, 1983, Zant 2002). Accordingly, gender segregation practices in Saudi Arabia have been formed and enhanced to protect people’s Ird or perhaps to block all passable roads that might lead to women losing their chastity and virtue. In other words, gender segregation has come about as a means of preventing people from committing adultery. In practice, in Saudi Arabia today, a loss of Ird is only associated with female – and not male – chastity. It has been argued that this perception of Ird has led to a woman being considered as an “erotic creation” (Jawhari, 2007).

An understanding of these issues is vital in understanding the situation of Saudi students, both male and female, when they come to study in a country such as Australia where there is no gender segregation. They require sensitive understanding and support on the part of those who work in educational institutions. So, one of the critical questions that should be asked, is how an individual who has spent most of his or her life in segregated gender environment experiences being in a mixed gender environment. Any academic response to such a question provides useful information to the body of international education literature and may also provide useful data to identify how to support Saudi international students.

3. OVERVIEW OF THE LITERATURE ON SAUDI INTERNATIONAL STUDENTS

There is a wealth of literature that has documented personal, academic and social problems that international students face while trying to adjust to an unfamiliar academic and cultural environment. In Australia, most of this literature has focused on students from East Asia and India, simply because of the huge number of students from these regions compared to students from other regions. It is quite obvious, after reviewing the relevant literature that only a few studies exist about Saudi international students and most of these were conducted in the 1980s and early 1990s in the USA. The lack of early research is that Saudi Arabia was characterized by isolationism, and a significant percentage of its population was nomadic Bedouins (Shaw, 2009). Another reason why Saudi people preferred not to study overseas in the past might be the restrictive religious discourse that did not permit travelling to “the lands of the infidel” (Abu-Sahlieh, 1996, Ibn Baz, 2000). Thus, the current study attempts to redress in part at least the absence of Saudi students’ voices in the international education literature. Looking closely at the literature about Saudi international students has provided the following conclusions.

Firstly, most of studies that have examined Saudi international students’ experiences have attempted to test hypothesis and correlate variables quantitatively (Al-Banyan, 1980, Al-Nassar, 1982, Shabeeb, 1996) in order to identify students’ academic difficulties, their attitudes toward their new academic environment, and their perception of the facilities and services offered by a university (Akhtarkhavari, 1994, Al-Dakheelallah, 1984, Al-Jasir, 1993, Al-Nassar, 1982).

Secondly, in relation to the current study, there has been no published research specifically about the experience of Saudi international students living in mixed gender environment. However, there is published material relating to Saudi international students’ general problems (Al-Jarf, 2004, Al-Jasir, 1993, Al-Khedair, 1978, Alkhelaiwy, 1997, Al-Shedokhi, 1986, Basfar, 1995, Fallon and Bycroft, 2009, Hassan, 1992, Midgley,

2009b), academic problems (Gauntlett, 2006, Shehry, 1989), adjustment issues (Jammaz, 1972, Midgley, 2009a, Shabeeb, 1996), perceptions of achievement (Al-nusair, 2000, Shaw, 2009), motivations (Gauntlett, 2006), engagement (Midgley, 2009a) and home-stay experiences (Fallon and Bycroft, 2009).

Thirdly, quantitative studies reported that Saudi international students consider the English language to be one of the most difficult adjustment areas (Jammaz, 1972, Rasheed, 1972, Shabeeb, 1996, Shehry, 1989). These studies found that students' age (Jammaz, 1972, Shabeeb, 1996), marital status (Jammaz, 1972, Rasheed, 1972, Shabeeb, 1996, Shehry, 1989), courses of study (Jammaz, 1972, Shabeeb, 1996), and gender (Shabeeb, 1996, Shehry, 1989) were associated with their perceptions of the difficulty experienced in adjusting to the English language. The literature reported that social relationships with local students and the community also have a significant effect on their ability to overcome language difficulties and hence increase their academic success (Jammaz, 1972, Shehry, 1989). Most unexpectedly, Al-Shedokhi (1986) reported that the greatest concern for Saudi international students was financial assistance, and they had least concern about interactions with the opposite sex; more subtle factors may have been operating here, for example, at that time many students who travelled overseas to study came from privileged families and this presented problems of a particular kind. Today, students from Saudi Arabia represent a broader cross-section of the society. Certainly, Al-Shedokhi's findings are not supported by the present research.

Fourthly, there is an absence of qualitative research about the Saudi international students' experience. Only five qualitative studies were found relating to Saudi international students' experience: one unpublished research (Shaw, 2009) and four papers. The first two papers were conducted by Midgley (2009). Both papers are based on ongoing PhD research about the experiences of male Saudi Arabian nursing students at an Australian university. The third paper was conducted by Gauntlett (2006) who reported ongoing research about the academic expectation of Gulf-sponsored students in Australia. The fourth paper was conducted by Fallon and Bycroft (2009) to develop materials for Saudi Arabian home-stay students. All of these papers have focused on Saudi international students in Australian institutions. In addition, Shaw (2009) undertook a PhD study to examine the educational experiences of Saudi Arabian students in institutions in the USA. In general, qualitative research demonstrates the following findings:

- Some Australian home-stays reported that some Saudi male students shows lack of respect for women (Fallon and Bycroft, 2009).
- Culturally, a Saudi male must take responsibility for his family members, particularly women who depend on him completely, therefore Saudi students relative to males from other cultures tend to have a 'higher' level of concern about their wives while they are studying and this might have a negative impact upon their experience (Midgley, 2009b).
- Some Australian home-stays who hosted Saudi students have reported positive experiences. They perceived that Saudi students "being reliable, respectful, caring, polite, honest, and involved in family life" (Fallon and Bycroft, 2009)
- Amongst Saudi students themselves there was a range of different experiences and approaches to living in Australia deriving from each student's individual personal relationships that epitomize "unique and highly complex internal networks of attitudes, values, experiences, abilities, beliefs and convictions" (Midgley, 2009a)
- Personal adaptation resilience and intercultural competence are the most fundamental characteristics for Saudi students if they are to have a successful international experience (Shaw, 2009).
- Saudi sponsored students might lack motivation to take responsibility for their studies compared to other international students (Gauntlett, 2006).

4. METHODOLOGY

To explore the Saudi student's experience of being in a mixed gender environment I used a (qualitative) phenomenological approach. This approach has been derived from Husserl's philosophy of phenomenology (Edmund Husserl 1859-1938), known as a descriptive phenomenology (Creswell, 2007, Todres, 2005, Lopez and Willis, 2004). One of the major reasons for utilizing such an approach is it allows participants to describe their actual experience as it emerges and, at the same time, assists the researcher in structuring the

meaning of these experiences within a social and cultural context (Lodico et al., 2006 p.16, Cohen et al., 2007, Moustakas, 1994, Creswell, 2007, Crotty, 1996).

Four in-depth interviews have been planned with four participants in order to provide rich descriptive data for the phenomenon being researched (Crotty, 1996, Moustakas, 1994, Seidman, 1998). According to Hycner (1985): doing phenomenological research usually requires only limited number of participants be interviewed given the vast amount of data generated. However, to date, only one interview each has been conducted with two participants and it is these interviews and the analysis that formed the pilot study for this research that is presented in this paper. The two interviews were conducted in April of this year (2010) with two Saudi international students – a male and a female – who are currently studying at different Australian universities.

Participants for the study were selected according to the following criteria; (1) they are studying in a mixed gender environment; (2) they are Saudi-sponsored students; (3) they have lived in a segregated gender environment most of their life and have been here for more than one year; (4) they are willing to share their experience voluntarily and can participate in more than one interview (Creswell, 2007, Moustakas, 1994, Rogers, 1983).

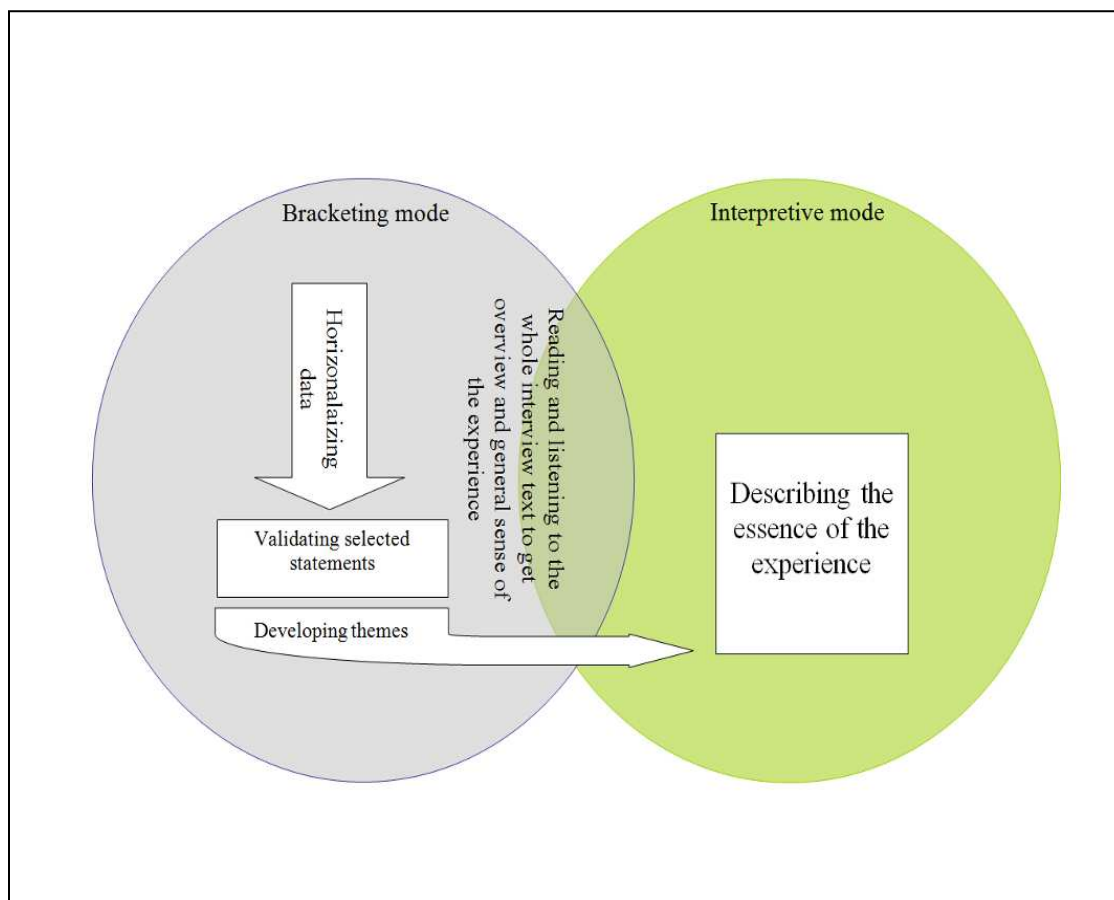


Figure 1. Data analysis procedure

5. FINDING AND DISCUSSION

During the interviews, descriptions were provided by the participants regarding their studying and living experience. For example, language and communication difficulty was one of the major challenges that participants shared with me. Participants also encountered some difficulty in adjusting to the new academic

system and “fitting in” the new lifestyle. However, the current research seeks to explore the essence of the experience; it focuses on the meanings derived from the individual’s experience. During the analysis process, I was looking to provide an answer for the research question which is how the Saudi international student experiences being in mixed gender environment. However, I realized that there are two phenomena involved in Saudi international students’ lived experience. The first is the phenomenon of being ‘international students’; the lived experience of the ‘foreigner’ who uses a different language; studying in a different academic system. This phenomenon also contains the experience of being ‘far away’ from social and friendship networks. The second phenomenon is the lived experience Saudi students in the mixed gender environment itself; the phenomenon of how individuals, who spent most of their lives in a segregated gender environment, experience the transition to a mixed gender environment. It is not an easy task to distinguish between these two phenomena, since the experience of being in a mixed gender environment is strongly tied to and is involved with the participants’ experience of being ‘foreign’.

Six essential themes emerged from the analysis of the interviews that describe how Saudi international students experience being in a mixed gender environment. These themes are difficult in the beginning, positive and good, adjustment, social network and engagements, cultural identity, and pre-departure course (Figure 2). In this paper, only one theme is discussed. The theme is presenting the positive experience that Saudi students have by being in mixed gender environment as international students.

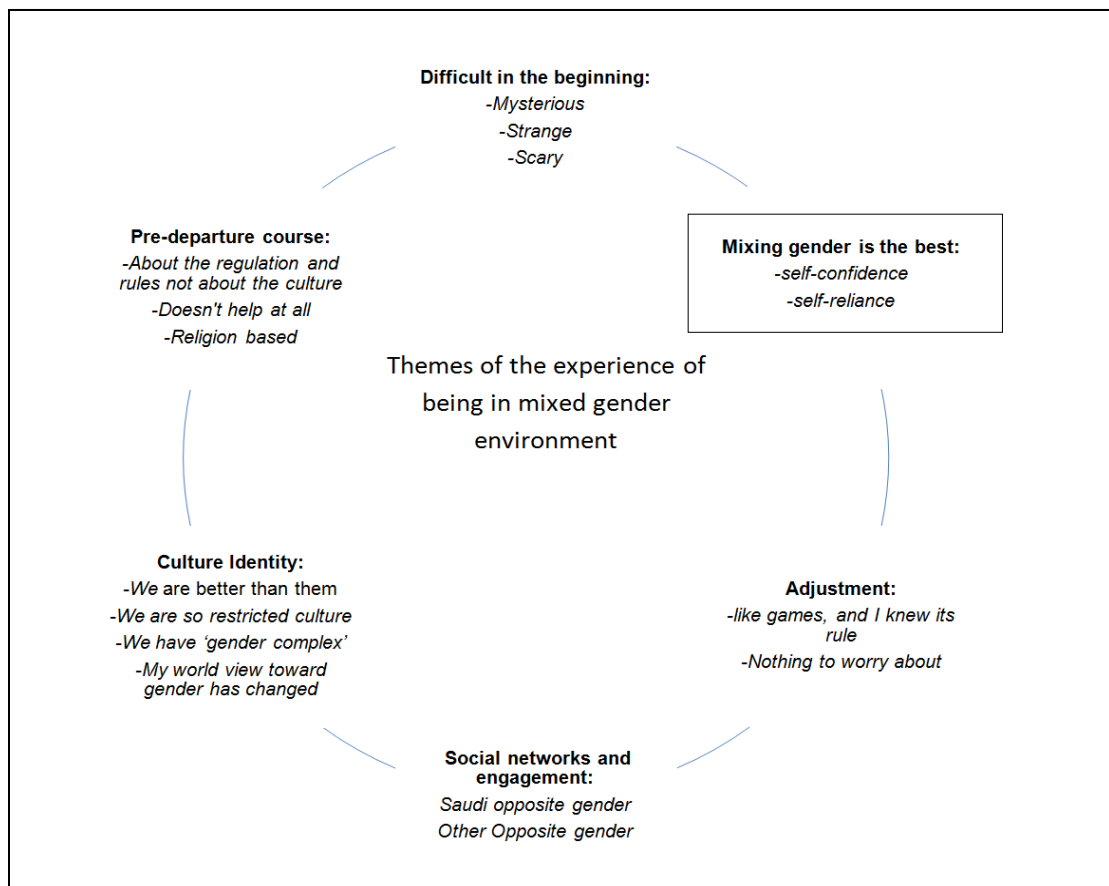


Figure 2. The most common themes

5.1 One Theme: “... mixing Gender is the Best...”

The two Saudi students spoke extensively about the phenomenon of transitioning from a segregated gender environment to a mixed gender environment. Each of them has had a unique and different experience.

However, the current study attempts to demonstrate the most essential, common, and invariant meaning for the participants' lived experience. In this paper, I am only discussing one theme that has emerged, namely, "Mixing gender is the best" (figure 2). It refers to the positive experience that participants had by being international students in a mixed gender environment. Both participants described their overall experience as positive and good. The first two stages of data analysis (horizontalization of the data and clustering core themes) showed that the meaning of positive experience that the students reported was associated with two characteristics of adaptation resilience: independence and self-confidence. Generally this finding was consistent with studies by Shaw (2009) and Wang (2007) on international student adjustment. They claimed that resilience characteristics influence successful and positive experience for international student adjustment. For example, Shaw has found that Saudi international students who have positive and successful adjustment experience are resilient students. She examined eight characteristics of resilience and their influence on Saudi international students' successful experience. The examined characteristics in her research were goal orientation, self-confidence, strong support systems, optimism, motivation, self-discipline, organized methods for meeting challenges, and coping strategies. The current data in this study showed that participants have provided many statements and descriptions related to their positive experience.

Ali, for example, made this general statement which became one of the label categories of the core themes. He said:

"Mixing gender is the best thing... because it is in our nature"

He is happy and likes to live in mixed gender environment. Zahra has also commented positively on living in a mixed gender environment:

Being here has changed my personality completely; it has many advantages... So, if I were to sit down for a whole day to describe them, I couldn't provide all the advantages ...

This positive experience has been influenced by the high level of the two resilience characteristics I mentioned earlier: independence and self confidence. The following examples of their descriptions demonstrate the high level of independence and self-confidence. In relation to the independence characteristic, Zahra has stated that the feeling of independence was one of the obvious advantages that she gained from this experience. She said:

"... The most important advantages from (being here) refined my personality in a good way, and I became more independent ... I refined my personality I am not only the one who realized that, but my family also said that 'Zahra has changed'

Similarly, Ali described the experience of being an international student as a chance for him to be more independent. He said:

"... The time spent in this experience helps a person to be more mature...I feel that I am living my own life. (I am enjoying my experience) despite the fact that I am far away from my family, but I feel that I have quite a normal life..."

For the self confidence characteristic, Ali believes that he is very confident when he is communicating with females. He said:

"After a while, I found myself dealing with females as I do with any other 'person' whom I respect and appreciate ... In the past, I was afraid to communicate with a female ... (Being in a mixed gender environment) is a good experience and I have benefited from having it"

From Zahra's description the confidence characteristic was stated clearly many times. In this statement she said:

"Finally, I learned how to deal with a man with confidence and how to make my own rules. So when I go back to Saudi Arabia I will be more confident"

6. CONCLUSION

This paper has reported some emerging data from the first phase of an ongoing study. The findings present a preliminary analysis of part of this data and reveal some interesting meaning that Saudi international students have made in relation to their experience of living for the first time in a mixed gender environment. The data showed that the two participants have had a positive experience from being international students in a mixed gender environment. This positive experience has been influenced by two resilience characteristics –

independence and self-confidence – that participants gained from being international students. As the research is still in progress, the reported findings here cannot be generalized. However, even at this initial stage they do provide insights into the Saudi international students' experiences which have not been studied in an Australian context before. Therefore, the findings can be used as a foundation and key for those who would like to understand the Saudi international experience, including institutions in which they study, homestay situations and, of course, the Saudi government which sponsors them.

REFERENCES

- Abu-Sahlieh, S. 1996. The Islamic conception of migration past, present and future.
- Abu-Shuqqah 1999. *Tahrir al-marrah fi asr al-risalah: dirasah an al-marrah jamiah li-nusus al-Quran al-karim wa-sahihay al-Bukhari wa-Muslim*. (Women's liberation in the era of the Prophet's message: a study on women collected the texts of the Holy Quran and Saheeh Al-Bukhari and Muslim), Dar Alqalam.
- Akhtarkhavari, N. 1994. The perceptions of education and satisfaction of Saudi graduates: a comparative study of Saudi graduates from American and Saudi universities. Florida State University.
- Al-Ashaikh, A. 2009. Grand Mufti's fatwa on mixing sex in education. YouTube.
- Al-Banyan, A. 1980. Saudi students in the United States: a study of cross cultural education and attitude change, Ithaca Press.
- Al-Dakheelallah, D. 1984. Saudi Arabian students' attitudes toward Americans. Michigan State University. Dept. of Sociology.
- Al-Jarf, R. 2004. Cross-Cultural Communication: Saudi, Ukrainian, and Russian Students Online. Online Submission, 22.
- Al-Jasir, A. 1993. Social, cultural, and academic factors associated with adjustment of Saudi students in the United States. University of Illinois at Urbana-Champaign.
- Al-Khedair, K. 1978. Cultural perception and attitudinal differences among Saudi Arabian male college students in the United States. University of Arizona.
- Al-Nassar, F. 1982. Saudi Arabian educational mission to the United States: assessing perceptions of student satisfaction with services rendered. University of Oklahoma.
- Al-Nusair, D. 2000. An assessment of college experience and educational gains of Saudi students studying at U. S. colleges and universities. George Washington University.
- Al-Shedokhi, S. 1986. An investigation of the problems experienced by Saudi students while enrolled in institutions of higher education in the United States/--by Saad Abdul-Karim Al-Shedokhi. Unpublished doctoral dissertation, Oregon State University, Corvallis, Oregon.
- Alkhelaiwy, M. 1997. Religious practice change among Saudi students in the United States. Mankato State University.
- Almunajjed, M. 1997. *Women in Saudi Arabia Today*, Macmillan.
- Australian Government. 2008. Saudi Arabia Country Brief - January 2008 [Online]. Available: http://www.dfat.gov.au/GEO/saudi_arabia/saudi_brief.html [Accessed 28/4/2009 2009].
- Baki, R. 2004. Gender-Segregated Education in Saudi Arabia: Its Impact on Social Norms and the Saudi Labor Market. education policy analysis archives, 12, 12.
- Basfar, H. 1995. A phenomenological study of intercultural and cross-cultural interpersonal communication experience: uncertainty reduction as perceived by Saudi Arabian students in the U. S. A. Southern Illinois University at Carbondale.
- Cohen, L., Manion, L. & Morrison, K. 2007. *Research methods in education*, Routledge.
- Creswell 2007. *Qualitative Inquiry and Research Design: Choosing among Five Approaches* SAGE Publications (CA), 416.
- Crotty, M. 1996. *Phenomenology and nursing research*, Churchill Livingstone Melbourne, Victoria, Australia.
- Deaver, S. 1980. 2 The Contemporary Saudi Woman. A world of women: anthropological studies of women in the societies of the world, 19.
- Department of Foreign Affairs and Trade. 2010. Saudi Arabia country brief [Online]. Available: http://www.dfat.gov.au/geo/saudi_arabia/saudi_brief.html [Accessed].
- Deputyship for Planning and Information 2010. Students Abroad: Statistical Indicators and Analysis. In: EDUCATION, M. O. H. (ed.) First Edition 2010 ed.

- Fallon, F. & Bycroft, D. 2009. Developing Materials for Homestays and Students from Saudi Arabia. In: FALLON, F. (ed.) ISANA international education association 20 th international conference. Hotel Realm, Canberra: ISANA International Education Association Inc.
- Fanjar , A. 1987. Mixing gender in religion, history, and sociology (al-Ikhtilāt fi al-din, wa-fi al-tarikh, wa-fi ilm al-ijtima)(Cairo, al-Haya h al-Mi r ah al- mmah lil-Kit b.
- Fanjar , A. 1997.
- Gauntlett, K. 2006. The Challenge of Understanding the Academic Expectations of Gulf Sponsored Students: traditional student aspirations versus modern graduate attributes.
- Hassan, S. 1992. Cost effectiveness analysis of the Saudi Arabian scholarship grant programs for master's degree students studying in the United States. College of Education.University of Houston.
- Hycner, R. 1985. Some guidelines for the phenomenological analysis of interview data. Human Studies, 8, 279-303.
- Ibn Baz 2000. Majmu fatawa wa-maqalat mutanawwiah (Variety of edicts and articles). In: SHUWAYIR, M. I. S. (ed.).
- Ibn Baz. 2010. Al-Ikhtlat fi Adderasah (Mixing sex for Study) [Online]. Available: <http://www.binbaz.org.sa/mat/8287> [Accessed 15/6/2010 2010].
- Jammaz, A. 1972. Saudi students in the United States, a study of their adjustment problems. Michigan State University.
- Jawhari, A. 2007. Ramziyat al-hijab : mafahim wa-dalalat, Beirut, Lebanon, Markaz Dirasat al-Wahdah al-Arabiyah.
- Lodico, M., Spaulding, D. & Voegtle, K. 2006. Methods in educational research: from theory to practice, Jossey-Bass.
- Lopez, K. & Willis, D. 2004. Descriptive versus interpretive phenomenology: their contributions to nursing knowledge. Qualitative Health Research, 14, 726.
- Author. 2010. Almusa:Adad Almubtathen Wa Al-mubtathat Sayaygfez Ila 140 Alf Khelal 5 Snawat (Al-Musa: The number of scholarships and Alambtosat climb to 140 thousand within 5 years). Alhayat.
- Mayer, A. 2000. Benign Apartheid: How Gender Apartheid Has Been Rationalized, A. UCLA Journal of International Law and Foreign Affairs, 5, 237.
- Midgley, W. 2009a. They are, he is, and I am: different adjustment accounts of two male Saudi Arabian nursing students at an Australian university. Studies in Learning, Evaluation, Innovation and Development, 6, 82-97.
- Midgley, W. Year. 'When we are at uni our minds are at home': Saudi students worrying about wives. In, 2009b. International Student Advisers' Network of Australia (ISANA).
- Ministry of Higher Education. 2010. King Abdullah Scholarship Program to continue for five years to come [Online]. Ministry of Higher Education. Available: <http://www.mohe.gov.sa/en/news/Pages/an74.aspx> [Accessed 1/5/2010 2010].
- Moustakas, C. 1994. Phenomenological research methods, Sage Publications, Inc.
- Patai, R. 1983. The Arab mind, Macmillan Reference USA.
- Rasheed, M. 1972. Saudi students in the United States: a study of their perceptions of university goals and functions. University of Oklahoma.
- Rogers, M. 1983. Sociology, ethnomethodology, and experience: A phenomenological critique, Cambridge Univ Pr.
- Seidman, I. 1998. Interviewing as qualitative research, Teachers College Press New York.
- Shabeeb, S. 1996. Saudi and Arabian Gulf students' adjustment problems in Eastern Washington. Gonzaga University.
- Shaw, D. 2009. Bridging differences: Saudi Arabian students reflect on their educational experiences and share success strategies.
- Shehry, A. 1989. An investigation of the financial and academic problems perceived by Saudi graduate students while they are studying in the United States.
- Todres, L. 2005. Clarifying the life-world: descriptive phenomenology. Qualitative research in health care, 104–122.
- Wang, J. 2007. A Study of Resiliency Characteristics in the Adjustment of International Graduate Students at American Universities. Journal of Studies in International Education, 1028315307308139v1.
- Zant , M. 2002. Qişşat al-sufur wa-al-niqab : wa-ikhtilat wa-infişal al-Jinsayn inda al-Arab (Story unveiling and the veil: and the mixing of the sexes and the separation to the Arabs), Cairo Dar al-Bustani li-l-nasr wa-al-tawzi.

DIALECTICAL TENSIONS IN INTERCULTURAL CLASSROOMS: WHEN DIFFERENCES MEET

Jiraporn Kerdchoochuen, Ph.D.
Bangkok University

ABSTRACT

An intercultural classroom is a place where teachers and students from different nationalities and cultures meet and interact. When teachers and students with different values and expectations communicate, they tend to create misunderstanding and tensions which affect their learning and relationships. This study explores the dialectical tensions native English-speaking teachers have with Thai students in an intercultural classroom in Thailand. The data are gained from in-depth interviews with 20 native English-speaking teachers and lengthy classroom observations at 4 universities. The study indicates that native English-speaking teachers encountered 8 dialectical tensions: stability/change, openness/closedness, separation/connection, active/passive, hierarchy/equality, resentment/affinity, impartiality/favoritism, and formality/informality. The study also reveals that all dialectical tensions found in intercultural classrooms are interrelated: One dialectics cannot be isolated from other contradictions.

KEYWORDS

Dialectics, dialectical tension, intercultural classroom, native English-speaking teacher, Thai student

1. INTRODUCTION

Schools are important microcosms of the larger social context because they are places where students can substantially interact and form community with other people outside their family. Students, from the very beginning of their education experiences, spend much time with their teachers and classmates at schools. Whereas parents have the primary duty to raise children at homes, teachers are expected to educate, cultivate, and foster their students at schools. Schools, therefore, become crucial environments for students. Nowadays, the advances in science, technology, and transportation led to the decrease of barriers between nations. International education is one example illustrating that individuals from different nations are bridged together. International education emerged due to the need to acquire greater competency in foreign languages, gain better understanding in other countries' cultures, and learn how to cooperate with other nations. Despite its various definitions, international education, in this study, refers to "the formal curriculum, usually in respect of one of the international programmes frequently offered in international school" (Hayden, 2006, p. 7). International schools serve both international students and national students who want to be proficient in English, the common language medium used in the international instruction, or who prefer the greater flexibility international schools offer over national systems (Murphy, 1991).

The increasing importance of international education in Thailand has been recognized throughout the country. Because of ease in accessibility, Thailand serves as a gateway to Southeast Asia and has emerged as one of the most popular educational destinations. Thailand actively encourages international programs, particularly those in higher education. Joint programs between Thai and foreign universities are also administered. Students from various nations come to Thailand to pursue their studies, particularly at the undergraduate and graduate levels. International education in Thailand provides a wide range of educational levels, from pre-schools to post-graduate colleges. Not only international students who are pursuing their education in Thailand, there have been an increasing number of Thai students going to study in an international program. Because the majority of international schools in Thailand offer either British or American educational systems, most teachers in those schools are native English-speaking teachers who possess different cultures. As a result, the different styles of communication, caused by different cultures, perspectives, and expectations, tend to cause the interpersonal contradictions or dialectical tensions.

The perspective used to study interpersonal communication, emphasizing the negotiation of dialectical tensions, is grounded in the dialectical perspectives which have been developed as an alternative study on relationship maintenance (Baxter & Montgomery, 1996, 1998). Most research on dialectical tensions is about interpersonal relationships: friendships and romantic relationships (see, for example, Baxter, 1988, 1994). Dialectical scholars view relationship maintenance as an ongoing struggle of dialectical tensions. These tensions are caused by the continual presence of opposing forces in human lives (Montgomery, 1993). Baxter and Montgomery (1996) found that relational partners are constantly pulled by many different binary needs and neither need is more desirable than the other. While many dialectical scholars used dialectical perspectives to explain interpersonal relationships, some researchers have applied them to study classroom communication. Rawlins (2000) studied teacher-student relationship using dialectical perspective. In his study, he viewed the relationship between teachers and students as an educational friendship full of dialectical tensions. While Rawlins regards the relationship between teachers and students as interpersonal, some scholars describe classroom relationships as a group process. Prentice and Kramer (2006) have applied dialectical perspective to instructional communication. They studied dialectical tensions in a classroom setting where a classroom was viewed as group communication. However, dialectical perspectives have not yet been applied to intercultural classroom settings.

Dialectical tensions are likely to occur in an intercultural classroom where teachers and students have different needs and expectations. Although teachers have their own duty to teach while students realize their role to study, their desires and responses might not correctly match. Differences in role expectations, ways of learning, and verbal and nonverbal communication tend to cause tensions within their relationships. In order to enhance the quality of international education, classroom interactions, relationships, and conflicts are needed to be studied. The purpose of this study is to attain the deep understanding of dialectical tensions and how they characterize the communication pattern in an intercultural classroom. This study, therefore, addresses the question of what dialectical tensions native English-speaking teachers encounter when they interact with Thai students in an intercultural classroom.

2. METHODS

In order to understand dialectical tensions native English-speaking teachers have with their Thai students in an intercultural classroom, in-depth interviews and lengthy observations were used in this study. Intercultural classes at 4 different universities in Thailand, that provide international programs, were primary research settings. Because the data was regarded as strictly confidential, the real name of each university was not exposed. The Central University, the North University, the West University, and the East University, therefore, were used to refer to the 4 research settings. The lengthy observations were administered at 4 content classrooms in an undergraduate level. A content class refers to a non-language class with a lecture or discussion style of teaching. In this study, a communication class at the Central University, a law class at the East University and two business classes, one at the North University and the other at the West University, were observed for the entire semester. Apart from the lengthy classroom observations, the in-depth interviews were conducted with 20 male native English-speaking teachers, 13 Americans; 4 Australians; 2 Canadians; and 1 British, who were teaching at those 4 universities. These native English-speaking teachers had to teach Thai students in international programs, at the undergraduate level, in Thailand for at least a year. The time length of teaching experience with Thai students of each participant ranged from 1 to 19 years. In order to maintain their confidentiality, pseudonyms were applied to all participants in this study.

3. FINDINGS

Twenty in-depth interviews with native English-speaking teachers and 4 lengthy classroom observations indicate 8 dialectical tensions native English-speaking teachers encountered with Thai students. Those dialectical tensions consisted of stability/change, openness/closedness, separation/connection, active/passive, hierarchy/equality, resentment/affinity, formality/informality, and impartiality/favoritism.

3.1 Stability and Change

This tension refers to the need for predictability, stability, and certainty along with the need for novelty, stimulation, and uncertainty (Baxter, 1994). Although education needs predictability and routine, teachers and students also sometimes desire surprise and novelty. Native English-speaking teachers encountered the stability/change tension in 3 forms. The first form was the contradiction between the need to have the consistent activities and the desire for the creativity in a classroom. In an intercultural classroom, if native English-speaking teachers discover that Thai students respond effectively with some approaches, they tend to repeatedly provide the similar patterns for them. However, the repetition of same activities may cause the boredom among students and teachers. To avoid the boring moments, native English-speaking teachers had to constantly change their activities. Nathan revealed that, "I think they lose concentration after about 10 minutes so my goal is to keep switching things around enough that I can get them back." Another novelty concerns the teaching styles. Even though the classes are international, some Thai students might be familiar with the old Thai education system they had been with. Many native English-speaking teachers, as a result, experienced a dialectical tension of stability/change when Thai students were uncomfortable with their new teaching approaches. Consider the following statement:

My dilemma is I can give something to them totally different, but the problem is they won't be happy. I'm trying different approach because I know it works. Maybe they don't like the class that they're not comfortable with. They may not like foreign lecturers as much as Thai lecturers. - Louis

The second form of stability/change tension refers to the contradiction between the desire for an anterior plan and the desire for an impromptu situation. For those who did not like spontaneity, a course syllabus was a good tool to make a classroom more planned. Some native English-speaking teachers preferred a planned class. Russell said, "I always give out the syllabus right the very first class. So they have the outline and basic asset what sections and what chapters are gonna be covered, the grading criteria, the marking criteria." Another evidence of a planned situation was the exam review guide. During an observation at the West University, Louis distributed his students the midterm exam guide, which consisted of important concepts that students would see in the exam as a way to increase the class' predictability. Whereas many native English-speaking teachers liked a planned class, some of them preferred leaving some space for their classes to swing from one thing to another. An example was Nathan whose class was very spontaneous in terms of the content and the activities. He said, "I do not give them a week by week activity list. They don't have any specific knowledge of what's going on next week. My course is very flexible."

The third form of the stability/change tension refers to the need for an unchangeable and adaptable situation. Native English-speaking teachers must decide how much control and freedom they would give to their Thai students. Ryan was one of those who thought a structured class was appropriate for Thai students. Consequently, he would not accept any paper from his students if it did not perfectly fit his expected criteria. "I'm building citizen. I'm creating a good healthy person," said Ryan. Another evidence of the stability/change dialectic was whether native English-speaking teachers were willing to adapt to Thai students or to remain at their standard. Nicolas was the one who expected his Thai students to achieve his western standard as they were in an international program. Consider his statement:

I do not change my speed or anything as I was speaking to a native speaker. I expect my students to adapt to western standard, not because I think myself centered. It's because this is supposed to be western education so I'm living up to the expectation that their parents were sending them here and this is what students are supposed to get. You're not allowed to use Thai in the classroom, not even to one another. We're trying to provide international environment for the students. - Nicolas

Whereas Nicolas established the standard for his Thai students to reach, some native English-speaking teachers showed their great flexibility by adapting themselves to Thai students. Nathan said, "Throwing them off into full speed native English lectures just because we're international, that's not the solution."

3.2 Openness and Closedness

This tension concerns how much disclosure and secret is needed between teachers and students. In this study, the openness/closedness contradiction could be divided into 2 forms. The first one was when native English-speaking teachers had to deal with the interplay between how much closedness and how much disclosure

they should have with their Thai students while they were interacting. Native English-speaking teachers revealed that they felt uncomfortable to share their personal stories with Thai students. Erman said:

In class, we never talked about my private, my family or anything. I try to draw a clear line between them. They can talk to me about their personal lives but I'm not the best person to talk to because I'm not a counselor. - Erman

The second form of the openness/closedness tension was the need to be direct and the need to be indirect. Native English-speaking teachers faced this tension when they had to decide whether they should be honest and say what they thought to their Thai students. Some teachers chose to be protective when they communicated with their Thai students because they did not want to hurt their feelings. In a classroom observation at the Central University, Oliver often used protective language, especially with Thai students, because he did not want to discourage them. When students gave a wrong answer, he did not say it was wrong. Rather, Oliver said, "I think you're very close, but anybody wants to try?" Not only the teachers who were indirect to their students, native English-speaking teachers also revealed some evidence of indirectness from their Thai students. Consider Nicolas' statement:

There's a comment section at the end of term, but these students are not very negative. They don't say nasty things. They like to help save face. I've never had a confrontation in class. They don't want you to lose face especially if you get along with a good class. - Nicolas

3.3 Separation and Connection

This dilemma involves the need to be dependent and independent from others. In this study, the separation/connection tension occurred in 2 forms. The first one was an oppositional desire between being individual and the need to seek for help from others. In an intercultural classroom, native English-speaking teachers have their major job as a lecturer who passes on the knowledge to students. However, the teachers also have to provide some assistance to their students as needed. Following is Louis' statement:

As a lecturer I could say ok I'm done with the class, bye and walk out. But I wouldn't do that. I even told them sometime they're struggling and I said ok come and talk to me. Maybe I can give them alternate explanation and they can understand...The best thing is the students are motivated and you can help them a lot more. - Louis

The second form of separation and connection tension was the dilemma between the need to be distant at a professional level and the need to be intimate at a personal level. In an intercultural classroom, native English-speaking teachers felt the distance from their Thai students. Chris said, "I've never had Thai students say hello when I walk pass, but I get hello and hi all the time from people from other countries." Many native English-speaking teachers were trying to find the reason why Thai students usually remained distant from them. Some teachers proposed some possible explanations of the distance which are culture, language, age, and personality. Following is Aaron's statement:

I guess I'm not very intimate with my students. And yet I'm as available as other instructors. But I think sometimes they might feel a bit afraid to come and talk to me and I think it's more or so in the Faculty now because I'm the only foreigner...So it seems like people use me as a kind of scary figure so it doesn't help them to react personally with me... Native speakers have to be aware that the expected relationship between teachers and students might be more formal than you used to in western universities. - Aaron

3.4 Active and Passive

This contradiction refers to the need to make students active and the need for them to be passive in the classroom. Participation is what all teachers require in their class. However, in an intercultural classroom, it was difficult for native English-speaking teachers to receive participation from Thai students. Aaron compared a classroom with a tennis match, but an intercultural classroom with Thai students would never be a tennis match because when the teacher hit a ball out, Thai students rarely hit it back. Oliver called Thai students' learning behavior *passive aggressive* because they were polite, but never spoke. The teachers thought this passivity were mostly from the culture. Ryan said Thai students were not engaged because they did not want to lose face while Trent thought it was because of their lack of confidence to speak English. In addition, Dan thought this passivity came from the Thai school system. He said:

I just think they're afraid to look stupid. They don't want to talk in class. They don't want to ask questions. I have foreigners in my class. They asked stupid questions. They really know stupid questions but they just don't care. I would love if Thai students do that to actually stop me and ask wait wait what is that but they never do. They sit with their book and they're like a machine. They write what I write. I don't know if they're thinking about it. But it's just like a machine. Some school systems might train them to do. - Dan

3.5 Hierarchy and Equality

Native English-speaking teachers revealed they had undergone the tension between to promote equality or to demonstrate authority in the classroom. Some participants acknowledged that the hierarchical value in Thai society was a hurdle of teaching Thai students. Aaron experienced the effect of hierarchy on Thai students' way of learning. He said:

So the challenge there is often not to get them to answer everything. I think it's sort of the hierarchical nature of Thai society. Everybody's got their level. That's why the pronoun and the system is constructed that way. So in the classroom, it's very clear that I'm the person in charge. So they don't challenge. Also the expectation is the one way straight. They're coming to the room alright you teach, I learn. For them learning means I tell them and they write it down, and remember. - Aaron

Native English-speaking teachers also said that the hierarchical system trained Thai students not to think because they could wait for the teacher who had authority to tell them what to do. Consider this following statement:

Generally speaking, Thai students don't have that capability in their mental construct of questioning. I don't think it's a significant part of Thai culture. I'm not sure about that. My observation is that Thai people are very ideological construct dealing with it's not want. It's criticize questioning authority, questioning the legitimacy of this, questioning the right of that or the wrong of that. - Steve

3.6 Resentment and Affinity

This contradiction refers to the tension between the prejudice native English-speaking teachers held against Thai students and the great appreciation of them. Some participants explained that there were some aspects they disliked about Thai students. However, they still enjoyed teaching them for various reasons. For example, Chris, who had teaching experience in different countries, compared Thai to American students he had taught. Although he perceived Thai students as being quiet and not engaged much in a class, he also admired their silence. Chris revealed, "We don't need the metal detector at the door that they use in Miami to screen for guns and knives. They're always polite. That's wonderful. I'd rather like them do nothing than fighting so quiet is good and bad." Aaron also agreed that a level of passivity meant intercultural classrooms in Thailand had no aggressive environment. He said, "The flip side of the passivity is everybody is very polite and nice. So everybody is very friendly even if it's the superficial level. So I appreciate it that everyday interaction is ok." Nathan, likewise, appreciated Thai students' being laid-back. Nevertheless, this characteristic made him think Thai students were not aggressive enough for the benefit of their education. Here is what Nathan said:

Confrontation is something I can see in American schools that I don't see here. That's something I appreciate. But then there's downside of course. Sometimes students are too passive and not being aggressive enough and not taking advantage enough of their own education. The system here allows students to kind of float through and pass, but not really learn much or challenge themselves very much. - Nathan

3.7 Impartiality and Favoritism

This tension is the dilemma between treating students with the fairness or bias. Chris explained that he tried to be unprejudiced in the class. He never learnt his students' names and also told them he would not remember anybody's name because he did not want to be influenced when he graded their papers. Ryan was impartial and made an effort to make his class fair so no one would doubt about his favoritism. The following is his statement:

You want to know how to motivate Thai students is to provide them with good data. I walk in every week and put on the board exactly where they are. They will see their names. They will see the dates whether they

were in that class. They see the scores they got in that test. They see the scores they got on that homework, every single week. Thai students like to do because they live in the world of gray. If they get a bad grade, they'll say the teacher doesn't like them but if you put the data up there every single week, they have nothing to argue about. The only thing that has any gray area is your homework and I grade your homework very linearly so there is nothing to do with attitudes whether I like them or not. So again, bring them out of that gray area so everything they see is very concrete in front of them. - Ryan

3.8 Formality and Informality

Whereas the primary duty of teachers is to deliver the knowledge to their students, designing the classroom climate is another important job good teachers cannot ignore. In order to make a classroom a more enjoyable learning place, many teachers try to build the more casual and comfortable environment. Bringing in humors to the teaching is another effective strategy to make the class more informal. Using humors in a classroom is not a new strategy, but it has not been used prevalently due to the considerable concern about appropriateness, particularly in an intercultural classroom where teachers and students are from different cultures. Humors cannot be a universal form of communication because the recipients might not interpret the message as intended. If the humors used in the classroom is perceived as an offense, it will perhaps result in social distancing and profoundly affect students' learning (Englert, 2010). Even though there was a risk to use humors, many native English-speaking teachers still relied on this strategy to make their classes less formal. Ryan said he used humors with his Thai students when he had to discipline them because he did not want his students to perceive him as a mean teacher. He said, "You can be strict but if you throw humors in there, especially Thai people love to have. Thai people love to laugh. So if I discipline a kid and I throw a humor in there you know, they will love it." Another popular strategy of most native English-speaking teachers to make the class less formal and burst into laughter was to speak some Thai to their students. This strategy was also obvious in the classroom at the Central University. Oliver regularly spoke some Thai words in his class when he wanted to draw attention or make students more engaged.

4. DISCUSSION

From the interviews and lengthy classroom observations, I found good evidence of the tension diversity native English-speaking teachers had with Thai students. Among 8 tensions, 5 of them are similar tensions that have been found in previous research while 3 of them are new. The 5 tensions that have been found in interpersonal and organizational contexts are stability/change, openness/closedness, separation/connection, resentment/affinity, and impartiality/favoritism. While the first 3 tensions have been repeatedly identified as important dialectics in human relationships (Baxter & Montgomery, 1998), the other 2 tensions were mostly found in a work place relationship (Chen, Drzewiecka, & Sias, 2001). An intercultural classroom is a place consisting of both professional and personal relationships. In a classroom, native English-speaking teachers professionally interact with their Thai students while they are teaching. Nevertheless, their relationship does not end in a classroom. Rather, native English-speaking teachers also personally interact with their Thai students after class. As a result, it is not surprising to see both relational and organizational tensions in this study. The 3 new tensions native English-speaking teachers encountered in this study were hierarchy/equality, active/passive, and formality/informality. While the tensions of active/passive and formality/informality occurred in the classroom, native English-speaking teachers confronted the dialectics of hierarchy and equality everywhere. As hierarchical culture is deeply ingrained in a Thai society, it affects everything including a classroom setting. Native English-speaking teachers encountered this tension when they interacted with Thai students both inside and outside the class. Although they were trying to promote equality between teachers and students, it did not seem to work in Thailand.

In order to understand the dialectical tensions, describing the tensions individually is not enough because it fails to represent how tensions impact one another. In this study, all tensions encountered by native English-speaking teachers were interrelated. Totality is one of the core concepts of dialectical tensions (Baxter & Montgomery, 1998). Dialectical scholars defined totality as "the inseparability of contradictions: one contradiction cannot be considered in isolation of other contradictions with which it is integrally linked" (Baxter & Montgomery, 1998, p. 10). Although the separation/connection tension has been identified by

most dialectical scholars as the most central contradiction (Baxter, 1988), the hierarchy/equality tension was found, in this study, to be a crucial denominator for other tensions. Hierarchy/equality seems to be the tension that determines all of the rest. It affects the stability/change tension because the teachers have to decide how much strict and flexible they should be while they perform as the one with more power in a class. It affects the openness/closedness and distance/intimacy tensions. Some students might perceive themselves as inferior so it is inappropriate for them to be open or intimate with their teachers. It affects active/passive tension because hierarchical system in Thailand creates the one way learning from the top to bottom. Thai students are passive because they do not want to challenge the authority. It affects formality/informality tension because informality with authority might be perceived as inappropriate. Finally, it affects the resentment/affinity tension because hierarchy/equality tension is an important factor to make the class enjoyable or not. In addition, interdependence among secondary contradictions was found in this study. The active/passive tension, for example, is related to the stability/change tension because Thai students are more interactive in a fluid class with flexible teachers. Also, the stability/change tension is related to the attention/distraction and formality/informality tensions because students might be able to maintain their attention longer if the class is full of novelty and its novelty can make the class less formal. The separation/connection tension also impacts the openness/closedness and impartiality/favoritism tensions because if teachers and students are more intimate, they tend to disclose themselves and be more honest. However, the openness and intimacy can lead to bias against each other.

Although the main focus of this study is the relationship between native English-speaking teachers and Thai students, I also found the tensions that were caused by other international students in the same classroom. Having international students, particularly native speakers, in class affects the teacher, Thai students, and the intercultural learning climate as a whole. The influences of native English-speaking students in an intercultural classroom are assorted. Generally speaking, native speaking students could make the class become either more or less international. The typical perspective believes that native speakers could bring in the internationality, not only from their physical appearance, but also their behavior. Native speakers tend to engage more in the classroom: They are expressive and extrovert. Some native English-speaking teachers, therefore, thought that this engagement would encourage Thai students to talk more. However, native speaking students could discourage Thai students in an intercultural classroom. Most Thai students do not have confidence in their English to begin with. So they do not like to speak their foreign language in front of a native speaker. Some native English-speaking teachers revealed that Thai students participated less when there were native speaking students in a class. Thai students are more embarrassed to speak in front of native speaking classmates. The vocal native speaking students could easily inhibit other Thai students. Another reason why native speaking students could discourage Thai students is that Thai students become dependent on their native classmates. Thai students know their international classmates would answer, so they do not have to do it. In a worse case, international environment does not bring up a participation level in class. Rather, it actually reduces the participation. At the very beginning, the native speaking students are very involved and then they do not want to keep talking because they are tired of carrying the class. Hence, native speaking students eventually become like everybody else: They do not participate either.

5. CONCLUSION

The study of dialectical tensions that native English-speaking teachers have with Thai students can expand our understanding of teaching and learning in an intercultural classroom. As contradictions are relational phenomena, the self produces and reproduces a historical, cultural, and social milieu (Baxter & Montgomery, 1998). A small tension in an intercultural classroom may affect the international education system as a whole. The study of dialectical tensions in an intercultural classroom, therefore, implies several applications. For international universities, the results of this research are useful because they can use them for the teacher preparation program. Providing native English-speaking teachers with dialectical tensions they may encounter with Thai students would be helpful. At least, they would come to the country with certain ideas of how to successfully deal with Thai students. For native English-speaking teachers, this research suggests that teaching is not the only thing expected in the classroom. The research indicated that understanding of and adapting to students' culture is essential for an intercultural teaching. For students who are going to study with native English-speaking teachers in an intercultural classroom or going to further international

education, the results of this research would benefit them because they will know what native English-speaking teachers expect them to be in a classroom. Knowing potential tensions they would encounter can help students prepare themselves before continuing their international education.

Even though this study provides practical considerations, there are some limitations. The first limitation deals with the participants' variables. In this research, the only variable I required from both groups of participants was the minimum length of intercultural classroom experience. Other than that, participants could vary in terms of their genders, age, educational background, and international experience. As a result, this study could not explain whether the differences of tensions are from this diversity or not. It is interesting for the future study to consider other differences such as ages, genders, and years of teaching experience as important variables. Another limitation of this research is regarding its context. The main settings for this research were non-language intercultural college classrooms with a lecture style of teaching. To increase the understanding of dialectical tensions in a classroom, other classroom settings should be studied. In addition, the study in other contexts can provide insight into the transferability of these findings to other settings.

REFERENCES

- Baxter, L.A., 1988. A dialectical perspective on communication strategies in relationship development. In S.Duck (Ed.), *Handbook of personal relationships* (pp. 257-274). John Wiley & Sons, NY.
- Baxter, L.A., 1994. A dialogic approach to relationship maintenance. In D. J. Canary & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 233-254). Academic Press, San Diego.
- Baxter, L. A. & Montgomery, B. M., 1996. *Relating: Dialogues and dialectics*. Guilford, NY.
- Baxter, L.A., & Montgomery, B.M., 1998. A guide to dialectical approaches to studying personal relationships. In B.M.Montgomery, & L.A.Baxter (Eds.), *Dialectical approaches to studying personal relationships* (pp. 1-15). Lawrence Erlbaum Associates, Publishers, Mahwah, NJ.
- Chen, T.C., Drzewiecka, J.A., & Sias, P.M., 2001. Dialectical tensions in Taiwanese international student friendships. *Qualitative Research Reports in Communication*, Vol. 2, 57-65.
- Englert, L. M., 2010. Learning with laughter: Using humor in the nursing classroom. *Nursing Education Perspectives*, Vol. 31, 48-49.
- Hayden, M., 2006. *Introduction to international education: International schools and their communities*. Sage Publications. Thousand Oaks, CA.
- Montgomery, B. M., 1993. Relationship maintenance vs. relationship change: A dialectical dilemma. *Journal of Social and Personal Relationships*, Vol. 10, 205-223.
- Murphy, E. (ed.), 1991. *ESL: A handbook for teachers and administrators in international schools*. Multilingual Matters, Clevedon.
- Prentice, C. M. & Kramer, M. W., 2006. Dialectical tensions in the classroom: Managing tensions through communication. *Southern Communication Journal*, Vol. 71, 339-361.
- Rawlins, W. K., 2000. Teaching as a mode of friendship. *Communication Theory*, Vol. 10, 5-26.

WEB 2.0 TECHNOLOGIES IN EDUCATION

Christina L. L. H. Chan She Ping and Tomayess Issa

Curtin University - School of Information Systems, Curtin University, Bentley, WA, Australia

ABSTRACT

This paper will discuss how Web 2.0 technologies were used in one of the foundation units for the Bachelor Degree of Commerce at Curtin Business School. This research targets undergraduate students, lecturers, and tutors of the Business Information Systems (BIS) 100 at the School of Information Systems in Curtin University. The research sample size is 122 students for surveys, and ten students and seven instructors for interviews. Only 88 students responded to the post-survey.

Most universities have already planned, or are currently planning, to change from instructor-delivered teaching to student-facilitated learning with the help of Web 2.0. The main purpose of this paper is to investigate the impacts of Web 2.0 technologies on teaching and learning performance at Curtin University, Australia. This research will provide additional information about why Web 2.0 should be adopted in education and will provide several strategies to formulate the adoption of Web 2.0 successfully.

The Critical Realism paradigm, which consists of both positivism and interpretive, were applied in the study to explore and understand the relationship between the use of Web 2.0 and the teaching and learning performance. Qualitative and quantitative approaches were used to collect data from surveys and interviews. The results from the post-survey were compared with pre-survey results, to determine any changes in the levels of both awareness and knowledge since the pre-survey.

Significant findings show that the levels of awareness and knowledge of students using Web 2.0 were low at the beginning of the semester, with a slight increase in the levels of awareness and knowledge as the students were exposed to several Web 2.0 tools. In addition, it was noticed that males have more knowledge of Web 2.0 technologies than do females, and are more interested in technology than are females. It was also found that the percentage of students using Web 2.0 to organise group meetings, to communicate with other classmates, and to communicate with their tutors has increased by 6.62%, 7.7%, and 1.82% respectively. Further research should be carried out to tackle any disadvantages and challenges of adopting web 2.0 in teaching and learning in Australia and globally.

KEYWORDS

Web 2.0, E-Learning, awareness and knowledge, usability

1. INTRODUCTION

In most countries, the percentage of Internet usage has exponentially increased in the last ten years (eTForecasts n.d.). The Internet is an essential tool for users and businesses to finalise their work simultaneously. People use the Internet for various purposes, namely: research, education, marketing, information and entertainment. The Internet is rapidly evolving, as it provides many facilities to meet users' needs and requirements. The recent evolution of the Internet is Web 2.0, which is referred to as "network as a platform". It consists of Social Networking sites, video-sharing sites, web applications, wikis, blogs, and podcasts. Furthermore, this technology can support education in terms of participation, interaction, sharing of knowledge, social networking, critical reading, critical thinking and writing, collaboration, and expression of opinions.

Web 2.0 is the new revolution in education, since in general, the principles of Web 1.0 are the 3Rs: Reading, Receiving, and Researching; whereas the principles of Web 2.0 are the 3Cs: Contributing, Collaborating, and Creating. Some principles of Web 2.0 that Anderson (2007) and O'Reilly (2005) stated are: 'The Web as a platform', 'Individual production and User Generated Content', 'Harnessing the power of the crowd', 'Data on an epic scale', 'Architecture of Participation', 'Network effects', and 'Openness'.

Web 2.0 websites offer significantly more interactive functionality than does "Web 1.0". Web 2.0 technologies allow user participation by supporting anonymity, more collection of information, freedom of

expressing ideas, quick and easy communication, and study that can take place anywhere and at any time. With Web 2.0, teachers become facilitators and encourage students to reflect and write more critically.

Many universities around the world are adopting this technology in their education sector, including Curtin University, Australia which started to adopt this technology in their learning and teaching area to encourage their students to use ICT. For instance, the School of Information Systems at Curtin University has adopted the Web 2.0 tool “Google Doc” in one of their undergraduate classes to encourage their students to learn new technology which is widely available in the marketplace.

Many studies have proven that the Internet has become an essential for most people and Web 2.0 has become popular, especially in the education sector (Boulos, Maramba & Wheeler 2006; Li & Pitts 2009). However, some studies also showed that the level of awareness about Web 2.0 in some educational institutions falls somewhat short and some people are misled about the uses of Web 2.0. It was found that some students did not even know that the Web 2.0 tools can be used for personal purposes as well as for their education (Aharony 2008; Middleton & Lee 2007; Stepanyan, Payne & Mather 2007).

The primary objective of this research was to improve education, which includes both teaching and learning, with the help of technology, particularly Web 2.0 tools. The researcher sought to ascertain whether Web 2.0 has a significant, positive impact on teaching and learning; and examined whether education is improved by the teaching sector’s adoption of Web 2.0 technology. The researcher also identified the changes that are required in order to improve teaching and learning by adopting Web 2.0 tools. The main research objective was to examine the positive and negative impacts of adopting Web 2.0 in teaching and learning.

2. BACKGROUND

Currently, the Internet has become indispensable to most people. A great number of daily activities are performed via the Internet such as shopping and even, group discussions amongst students. Technology should be incorporated into education (Scott 2009). There is a need for a shift from instructor-delivered teaching to student-facilitated learning (Hazari, North & Moreland 2009). Web 2.0 provides many applications that support e-learning.

E-learning adopts the constructive and collaborative learning approach, where teachers act as facilitators and students work in groups within and outside the class. With most collaborative technologies, students can share their ideas anonymously, freely, and at their own pace. It was found that some students and teachers lack skills and are reluctant to use new Web 2.0 technologies. Web 2.0 is the next stage in the evolution of the Internet, and is defined as an information system “...in which online users become participants rather than mere viewers” (Exforsys Inc 2009; Rosh, Jones & Wahl 2009).

Many Web 2.0 services provide discussion boards and public forums for participants to create dialogue and collaborate on particular matters, and this can be seen in examples such as WebCT and Blackboard (Simonoski & Dell 2006). In 2005, 95% of UK Higher Education Institutions had a virtual-learning environment which they used for education (Mistry 2009). It was found that some young people make use of Web 2.0 and other internet technologies effectively (Luckin et al. 2009). “The use of Web 2.0 technology is rapidly being integrated into undergraduate and graduate education” (Rosh, Jones & Wahl 2009, p. 274).

There are many different categories of Web 2.0, such as social networking, aggregation services, data ‘mash-ups’, tracking and filtering content, collaborating, replicate office-style software in the browser, and source ideas or work from the crowd (Anderson 2007). Web 2.0 has different pedagogical values as shown in Figure 1. The key driver of the development of Web 2.0 is the emergence of new Web-related technologies and standards. Chui, Miller, and Roberts (2009) suggested six ways of how to implement Web 2.0 successfully:

1. The Transformation to a bottom-up culture needs help from the top;
2. The best uses come from users – but they require help to scale;
3. What is in the workflow is what gets used;
4. Appeal to the participants’ egos and needs – not just their wallets;
5. The right solution comes from the right participants;
6. Balance the top-down and self-management of risk.

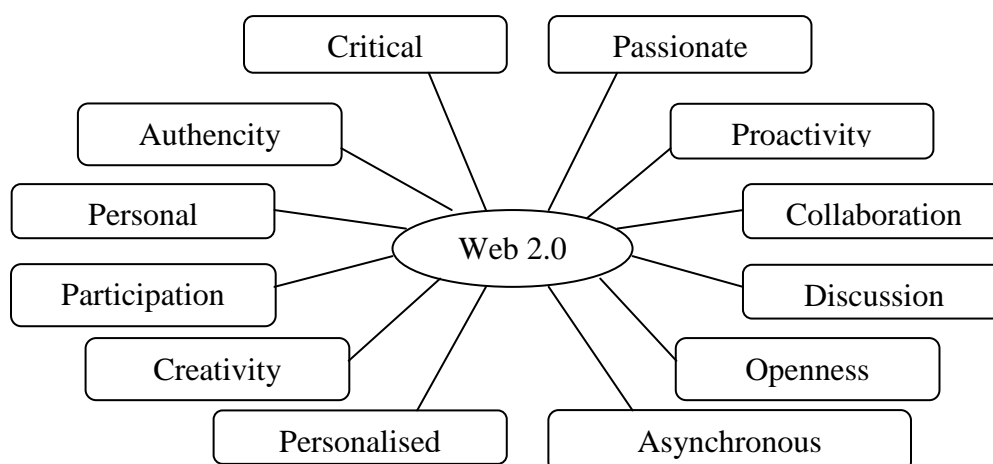


Figure 1. Pedagogical Values of Web 2.0

By using Web 2.0 in teaching and learning, students have the chance to create documents, videos, or podcasts online. A student can also act as a 'Google Jockey', who will search for any new terms or questions that emerge during a lecture, tutorial, or class discussion. In addition, Web 2.0 encourages more discussions amongst students in class on a particular topic. It encourages students to conduct more research, as students can gain access to broader sources of information other than textbooks. Teachers use the Internet to obtain updated information to prepare student notes so that students can acquire deeper understanding (Byrne 2009).

It is very important to implement Web 2.0 in education to formulate teaching and learning to be more interesting and interactive and to improve teaching performance. Students need guidance in using Web 2.0 technologies in their everyday lives and to help them keep safe on the Internet. Therefore, some parents are keen to be involved in their children's education, particularly to be kept informed of their children's learning progress at school, as many Web 2.0 applications can enable parents to do so. For instance, parents can use Wiki to participate in discussions about the school, and use blogs to check on curriculum content and their children's progress. Students can use Web 2.0 technologies to complete their homework as well as to socialise with other people online (Freedman 2010).

3. RESEARCH METHODOLOGY

The primary research question for this research is as follows:

What are the barriers to, and challenges of, adopting Web 2.0 in teaching and learning at Curtin University?

It relates to the overall research goal, i.e. what the research is aiming to investigate. From the literature, it was found that Web 2.0 provides easy and quick communication and sharing of knowledge. However, there is lack of knowledge management as well as lack of common understandings.

The secondary research questions evolve from the primary research questions. They describe in detail what the research is aiming to achieve. Each secondary research objective will provide significant findings that will support the primary research objective.

The Secondary Research questions proposed are as follows:

1. *If Web 2.0 technologies have a positive impact on teaching and learning, how can Web 2.0 improve education and learning in future?*
2. *However, if Web 2.0 technologies have a negative impact on education, what changes need to be made in the Web 2.0 technology itself, or in the way Web 2.0 is used in education and learning?*
3. *In case of low awareness of the usability of Web 2.0 technologies, what are the strategies to diffuse and adopt this innovation?*

More research is required to determine whether Web 2.0 technologies still have a positive impact on teaching and learning and hence, how they will improve education learning in future. From the literature review, it was also found that Web 2.0 tools do not have translation facilities to support international

students. Hence, many misunderstandings occur. Sometimes, students do not have any interest in participating online due to many factors, one of which is laziness. They tend to be more isolated as well. With Web 2.0, it is difficult for teachers to assess students because of indirect contact. The level of plagiarism may increase. Some students can become distracted with Web 2.0; they tend to check their Facebook account, for example, and ignore their studies. Moreover, Web 2.0 applications may not be reliable because if there is a system downtime, students will not be able to study and this will delay their work.

Most students have little knowledge of Web 2.0 technologies. They are unaware that they are actually using Web 2.0 tools in their everyday activities for different purposes, even for their study. For instance, students at Curtin University use Blackboard, which is the university's Learning Management System, for their learning and some do not know that Blackboard is a Web 2.0 technology. The secondary research objectives will determine whether Web 2.0 technologies will have a negative impact on teaching and learning at university. If so, some recommendations will be provided for changes to be made to the Web 2.0 itself or the way Web 2.0 is being used in education. The secondary research questions will also help to identify strategies to promote Web 2.0 technologies, and to diffuse and adopt them. The findings of the secondary research questions will then support the primary research objective.

The target population for this research was the undergraduate students as well as instructors from the School of Information Systems at Curtin University, Australia, since the school has already adopted Web 2.0 technology in one of their undergraduate units. The sample size for this research was 122 undergraduate students for surveys, 10 out of the 100 students for interviews and seven instructors from the Business Information Systems 100 unit. When the researcher conducted the post-surveys, only 88 students responded because many students stopped attending classes as exams were approaching.

This research made use of the critical realism approach, which combines both quantitative and qualitative approaches, to collect and analyse data. In this research, surveys and interviews were used to collect data from BIS100 students and instructors. A pilot study was conducted during the summer school times. The purpose of the pilot study was to test the validity of the questions before conducting the pre-survey. Since the questions were valid, where students were not confused when filling in the survey, same questions were used for the pre-survey and hence, the researcher decided to add the data collected from the pilot study together with the data collected from the pre-survey.

All the results from the pilot study, surveys, and interviews were evaluated and represented in the form of graphical charts and tables. In regards to the quantitative methods, i.e. the pilot study, the pre-survey, and the post-survey, percentage was the only measurement used to measure, analyse, and compare the data. The purpose of the post-survey was to determine whether there have been some changes in the level of awareness as well as in the level of knowledge since the pre-survey, when Web 2.0 was still new to students. Hence, all the results from the post-survey were compared with the results from the pre-survey.

4. DISCUSSION

4.1 Findings from Pilot Study and Pre-Survey

According to the findings from the pilot study and pre-survey, it was found that the students' levels of awareness and knowledge of Web 2.0 were quite low. Most students are currently using Web 2.0 tools, such as Facebook, in their everyday lives without realising that these applications form part of Web 2.0. If the researcher asks a student to describe briefly what Web 2.0 is, s/he may not know the answer, but if the researcher gives the student an example of a Web2.0 tool such as Facebook, then s/he will have some idea of one aspect of Web 2.0. On the one hand, some students have heard about Web 2.0 without knowing what it is. There is another category of students who have heard about Web 2.0, who know what Web 2.0 is, and who are currently using some of its tools for everyday activities.

On the other hand, there are still a few students who do not know and have never heard of Web 2.0. These students are very traditional, non-technology people. They prefer to use paper, books, and so forth, rather than e-materials and/or online materials. They are mostly resistant to technology. It was also found that females use computers for study more than do males. Some students use computers for social networking. The tool that most students predominantly use most of the time is Facebook, whilst Blackboard is mostly used for study. The materials that students prefer to use in class are the printed lecture notes and notepads.

The data collected from the pilot study and the pre-survey answered the third secondary question, which is *'In case of low awareness of usability of Web 2.0 technologies, what are the strategies to diffuse and adopt this innovation?'*

4.2 Findings from Post-Survey

After analysing the data and comparing the results from the pilot study and pre-survey and the post-survey, it was found that the levels of awareness and knowledge of Web 2.0 Technology have slightly increased since the beginning of the semester. This means that after introducing Web 2.0 Technology in the Business Information Systems 100 classes, students started to familiarise themselves with Web 2.0. Obviously, it was expected that the level of awareness be 100% because Web 2.0 technologies had been introduced and used in the BIS100 classes during the whole semester.

However, only 53% of students have heard of Web 2.0 technologies. It can be deduced that either they have heard about this but are unfamiliar with Web 2.0, or they have not attended most classes and that is why they do not know what Web 2.0 is. Most students have been using certain Web 2.0 technologies but some of them are still unaware that these technologies are actually part of Web 2.0. The level of knowledge has increased by 14.64% for males and by 5.73% for females. This indicates that males know more about Web 2.0 technologies than females. Males are more interested in technology than are females. It was also noticed that a high percentage of females sometimes use Web 2.0 tools, after becoming familiar with the Web 2.0 tools in BIS100 classes and a very low percentage of females have never used Web 2.0 tools.

Moreover, it was found that the percentages of students using Facebook and Blackboard have been increased by 17.23% and 18.85% respectively. This may be due to new users hearing about Facebook in class and beginning to use and like it. Moreover, at the beginning of the semester, the new, first year students were unfamiliar with Blackboard and its applications. During the whole semester, the students were required to use Blackboard very often as they had to download lecture notes or even iLectures. In the BIS100 unit, students had to work on tutorials and submit them via Blackboard. The semester test was also carried out on Blackboard.

The percentage of students who prefer to refer to textbook rather than online documents in their study has decreased as, throughout the whole semester, students have started to use electronic materials for their tutorials, assignments, and semester test in the Business Information Systems 100 unit. The percentage of students using Web 2.0 to organise group meetings, to communicate with other classmates, and to communicate with their tutors has also increased. This shows that the levels of awareness and knowledge of Web 2.0 have definitely increased and students have begun to use Web 2.0 tools for study purposes. Teachers have been successful in teaching Web 2.0 technologies to students in the BIS100 unit. There has been a success in engaging students and motivating them to use Web 2.0 tools.

4.3 Findings from Interviews

In addition to the surveys, face-to-face and email interviews were conducted with students and email interviews with tutors. It was noticed that Web 2.0 tools bring many benefits to students' study. Web 2.0 technologies such as Google Docs are cheaper or free, and they are very convenient for students. They are easily accessed from any location and at any time. They also allow students to have access to a greater number of resources, and more importantly, to up-to-date news. Some students found Web 2.0 technologies easy to use and very flexible because they can be easily customised according to users' requirements, such as Blackboard, the Learning Management System at Curtin University. Web 2.0 tools facilitate easy networking. Web 2.0 tools help students to more easily collaborate and communicate. Moreover, students do not have to rush to complete, print and submit assignments to the tutor or lecturer. Students can also view the iLectures several times and at their own convenience.

Google Docs supports group assignments more efficiently and effectively because it provides sharing facilities. Some Web 2.0 tools also allow the sharing of ideas anonymously. So, more anonymous discussions should be provided in classes so that those students, who are reticent or lack the confidence to share their views with others, will be more willing to do so. By using anonymous discussions through Blackboard or Facebook for instance, a wealth of ideas may be gathered. It was noticed that students found Google Docs convenient, very easy to remember and efficient to use. There is no need to learn how to use Google Docs as

most of its functions are similar to those of Microsoft Word. Google Docs is very practical and user-friendly. It is very easy to navigate throughout Blackboard and material can be downloaded quickly.

However, Web 2.0 technologies can bring some disadvantages to education. Many errors arose with the drawing tools in Google Docs application as well as with Blackboard. For instance, some students saved their work and when they tried to submit their answers, a pop-up window appeared, saying that some questions had not been completed. Those students had to wait for a while for the system to respond correctly. Moreover, other students experienced major issues with Blackboard. Whilst they were typing their answers, the window froze and refreshed by itself, or errors in networking will affect students' studies, so students then lost either all or part of their answers. These problems led to student frustration. iLectures, which are the recordings of the traditional lectures, may reduce student motivation to attend classes. It is important to note that some Web 2.0 tools, such as Wikipedia, do not provide accurate, scholarly information as they can be accessed and modified easily by anyone. There are also some privacy issues with Web 2.0 technologies as their information can sometimes be publicly accessed or shared with certain people. The most important drawback that needs to be considered is that when using certain Web 2.0 tools in class, students can become distracted easily and quickly and hence, they will not follow the class properly.

In regards to teaching, adopting Web 2.0 technology will increase student engagement and it will make classes more interesting and interactive, which may lead to an increase in, creativity, usability, and participation. This technology may encourage better interaction amongst students, and between students and the tutor. Web 2.0 technology will obviously help decrease paperwork as iLecture notes are provided through Web 2.0. If students do not understand the terms used by the teacher during the class, they can immediately search for them online in order to better understand the teacher's material. Teachers can easily communicate with and teach external and offshore students. They can mark assignments at any time and from anywhere. This could make this task quicker and more efficient to accomplish.

However, the Internet is always a necessary part of any work with the Web 2.0 tools. If Web 2.0 tools are used in classes, students may find it difficult to focus and be distracted by other activities such as browsing, chatting or playing games online. The use of Web 2.0 technology in classes may discourage social interaction, although this depends on how the teacher uses the tools. Teachers could encourage students to network more effectively in the class with the help of particular Web 2.0 tools. There may also be resistance from the University because of the policy. Data can be lost unexpectedly. The system may crash at any time. Google Docs lacks the advanced features of Microsoft Office. Some Web 2.0 tools may be incompatible with different platforms.

According to tutors, during the first 45 minutes of tutorials, students should use computers, and this should be followed later by class discussions. Facebook can be used to share ideas with the tutor, or to ask him/her questions after class. It is important to note that there are currently no Web 2.0 tools available solely for teaching purposes. Those being used are mainly for administrative tasks. Moreover, it is recommended that Web 2.0 not be adopted early in the technology lifecycle.

The data collected from the interviews answered all three secondary questions, which are as follows:

If Web 2.0 technologies have a positive impact on teaching and learning, how are they currently improving education and will they continue to improve education in the future?

However, if Web 2.0 technologies have a negative impact on education, what changes need to be made to the Web 2.0 technology itself, or in the way Web 2.0 is used in education and learning?

In case of low awareness of the usability of Web 2.0 technologies, what are the strategies used to diffuse and adopt this innovation?

Finally, the overall analysis of results conducted within this research answered the primary question, which is "What are the barriers and challenges by adopting Web 2.0 in teaching and learning at Curtin University?"

5. CONCLUSION

Web 2.0, referred to as "Network as platform", is a revolution in education. It supports e-learning. One of the Web 2.0 applications, Google Docs, is already in use in one of the units at the School of Information Systems at Curtin University. Many studies have indicated that Web 2.0 is becoming an increasingly important aspect of the Internet, especially in the education sector. However, some studies also showed that in some educational institutions the level of awareness about Web 2.0 is low.

Because interest has been expressed in the application of Web 2.0 technology in education in some schools, it was deemed worthwhile to carry out further research on the subject. Overall, it was found that the levels of awareness and knowledge of Web 2.0 technology have slightly increased since the beginning of the semester. This indicates that after introducing Web 2.0 technology in the Business Information Systems 100 classes, students increased their knowledge of Web 2.0 and its applications. Most students have been using Web 2.0 but some of them are still unaware that those technologies form part of Web 2.0. It was also found that males know more about Web 2.0 technologies than do females, and they show more interest in technology than do their female counterparts.

ACKNOWLEDGEMENT

The author wishes to thank those students and lecturers from the Business Information 100 unit who participated in this research.

REFERENCES

- Aharony, N 2008, 'Web 2.0 in U.S. LIS Schools: Are They Missing the Boat', September 20, 2010.
- Anderson, P 2007, *What is Web 2.0? Ideas, technologies and implications for education*, JISC Technology and Standards Watch.
- Boulos, MNK, Maramba, I & Wheeler, S 2006, 'Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education.', *BMC Medical Education [NLM-MEDLINE]*, vol. 6, pp. 1-8. Retrieved September 20, 2010, from ProQuest database.
- Byrne, R 2009, 'The Effect of Web 2.0 on Teaching and Learning', *Teacher Librarian*, vol. 37, no. 2, pp. 50-3.
- Chui, M, Miller, A & Roberts, RP 2009, 'Six ways to make Web 2.0 work', in *McKinsey on Business Technology*. McKinsey & Company.
- eTForecasts n.d., *INTERNET USER FORECAST BY COUNTRY*. Retrieved September 21, 2009, from http://www.etforecasts.com/products/ES_intusersv2.htm
- Exforsys Inc 2009, *Advantages and Disadvantages of Web 2.0*. Retrieved September 25, 2009, from <http://www.exforsys.com/tutorials/web-2.0/advantages-and-disadvantages-of-web-2.0.html>
- Freedman, T 2010, *Why Schools cannot ignore Web 2.0: Educational Factors*. Retrieved June 19, 2010, from <http://www.ictineducation.org/home-page/2010/4/9/why-schools-cannot-ignore-web-20-educational-factors.html>
- Hazari, S, North, A & Moreland, D 2009, 'Investigating Pedagogical Value of Wiki Technology', *Journal of Information Systems Education*, vol. 20, no. 2, pp. 187-98. Retrieved October 21, 2009, from ProQuest database.
- Li, L & Pitts, JP 2009, 'Does It Really Matter? Using Virtual Office Hours to Enhance Student-Faculty Interaction.', *Journal of Information Systems Education*, vol. 20, no. 2, pp. 175-85. Retrieved September 20, 2010, from ProQuest database.
- Luckin, R, Clark, W, Graber, R, Logan, K, Mee, A & Oliver, M 2009, 'Do Web 2.0 tools really open the door to learning? Practices, perceptions and profiles of 11-16-year-old students', *Learning, Media and Technology*, vol. 34, no. 2, pp. 87-104.
- Middleton, M & Lee, J 2007, *Cultural Institutions and Web 2.0*, Queensland University of Technology, Queensland, Australia.
- Mistry, V 2009, 'Recruiting a Web 2.0 workforce', *Human Resource Management International Digest*, vol. 17, no. 5, pp. 32-4. Retrieved October 21, 2009, from ProQuest database.
- O'Reilly, T 2005, *What Is Web 2.0? Design Patterns and Business Models for the Next Generation of Software*. Retrieved June 21, 2010, from <http://www.oreilly.de/artikel/web20.html>
- Rosh, A, Jones, K & Wahl, R 2009, 'Receiving: The Use of Web 2.0 to Create a Dynamic Learning Forum to Enrich Resident Education', *Academic Emergency Medicine*, vol. 16, p. S274.
- Scott, MK 2009, 'Technology - Engaged in Class: College professors incorporate social-networking tools to hold students' interest '. The Associated Press, October 2, 2009.
- Simonoski, G & Dell, P 2006, *Helping or hindering: students' use of collaborative technology in group projects*, Curtin University of Technology.
- Stepanyan, K, Payne, J & Mather, R 2007, 'Awareness of the capabilities and use of social software attributes within and outside the educational context: moving towards collaborative learning with Web 2.0', in *Conference ICL 2007*.

A GUIDE TO REMOTE TEACHING WITH INEXPENSIVE TECHNOLOGY: NOTES ON A MOBILE APPLICATION DEVELOPMENT COURSE

Caroline King and Chris Manford

Department of Computing - Unitec Institute of Technology - Auckland, New Zealand

ABSTRACT

To enable our students to have a competitive edge when entering the job market, our department makes every attempt to offer state-of-the-art courses. One problem with this strategy is that often our available lecturers lack commercial expertise in the new areas. To address this problem, we often run these courses outside normal working hours, and employ industry personnel to deliver or assist in the delivery of these courses. This semester, in a programming course for mobile phone applications, the industry expert lived and worked 650 kms from the campus, so remote teaching was required. Without access to video conferencing facilities and having only our standard teaching lab facilities with a minimal budget, we explored various technologies for running this course. The system needed to allow the delivery of the lecture, code demonstration from both the students' and the lecturer's ends, code sharing, and discussions of the code and design with the lecturer. After experimenting with various technologies, we settled on Skype with a Singstar set of two cordless microphones for the audio requirements, and GoToMeeting for sharing the desktop and other visual requirements. Both the Mac and the tutor PC at each end were connected to the GoToMeeting. We did not use the cameras that we purchased, because of the limitation in bandwidth, yet the sessions were still successfully interactive. This was an effective and economical solution, with minor functional inconveniences, such as occasional fade out and delay in speech. By making use of the standard equipment in the lab, the total outlay on equipment was kept to less than US\$75 for the microphones and US\$40/month for connection fees.

KEYWORDS

Remote teaching inexpensive technology.

1. INTRODUCTION

To ensure our graduates are able to compete in the competitive job market, our department strives to include courses in state-of-the-art subjects. This poses problems in finding sufficient expertise amongst available staff members, especially when experts in the field (almost always in industry), command salaries far higher than our academic salary scale. To resolve this, we often run these courses in the evening, and employ altruistic people from industry to come in one evening a week for a semester to deliver the course. This semester we offered a course in programming for mobile phones, but without staff members with sufficient experience in a commercial environment of this nature, we knew we had to employ outside expertise. We found the expertise in an ex-employee of one of the large US software giants, but the logistics of having him teach an evening course were complicated by the fact that he lived and worked in a city 650 kms from our campus. This was not intended to be a distance learning course in the accepted definition, but rather, a standard lecture and tutorial, but with the lecturer distant. Educationalists have stated that it is very important in the early stages, to establish a rapport with the students and set expectations (Benson, Cohen, and Buskist, 2005; Boice, 1996). As King and McSporran (2003) found, "Whether online or offline, the interaction between the teacher and learner is a core element of learning". Accordingly, we flew the lecturer up for the first session and three other sessions throughout the semester, including the final session where students presented their work. In the first session, he met the students and delivered the first lecture and tutorial. He set the ground rules for the future sessions, and explained how the remote teaching would operate with our available resources. We believed that by the lecturer working face-to-face with the students in the first session would eliminate or alleviate the problems encountered by De Fazio et al, (2000 p 151) who

commented that 'retaining or attaining a sense of human interface between the teacher and the student... can be rather challenging'. Even with full access to video conferencing facilities, there would have been difficulties in establishing a social presence, considered important by MacDonald (2008, Ch 7), but we were also constrained by our budget (nil if possible) and the use of standard teaching labs with limited Internet bandwidth. This paper describes our experiences and the technologies used in delivering a highly practical course, requiring lots of student-teacher interaction, to a group of final year bachelor students, when the lecturer was not able to be physically present in each class session and the budget was very limited.

2. THE COURSE AND THE STUDENTS

To understand the requirements of the technology for course delivery, it is necessary to examine the course and the students, as suggested by Idaho University Distance Learning Guidelines namely that "effective distance education programs begin with careful planning and a focused understanding of course requirements and student needs" (Gottschalk, n.d.).

2.1 The Course

The course was a third year computer programming paper using Apple Macs to develop applications for Apple iPhones. The course required the students to learn many new concepts, as well as to learn to work in an Apple environment and to learn a new programming language. The course requirement to pass included working individually or in a group of up to three to develop an application which could be run on an iPhone and, if good enough, submitted to Apple's App Store.

2.2 The Students

The 13 students were a mixture of full time and part time students of varying abilities, who were generally one semester away from finishing their Bachelor degrees. Most of the students were therefore reasonably mature and able to work independently. There were a couple of notable exceptions, being those students who had struggled through all the previous programming courses. By the time the students reached this stage, most would have completed at least four one-semester programming papers, and some may have completed 7 or 8 related papers, so the type of help required was at a conceptual level, rather than a syntactical level. All the previous programming papers had been done in a PC Windows environment.

3. THE TEACHING REQUIREMENTS

This course was not intended to be a distance learning course. It was intended to be taught in a standard lab on campus. For that reason we needed to re-structure the class sessions to make best use of the off-site lecturer. In keeping with the guidelines of Idaho University, we used a "site facilitator to act as a bridge between the students and the instructor." (Gottschalk, n.d.). We also noted Rao and Giuli's (2010) feedback from students, namely "student suggestions included a mandatory weekly meeting by phone or web-conferencing, having local coordinators ..., and more opportunities for face-to-face meetings." MacDonald's (2008, p80) findings that conversations "can lend a buzz and sense of immediacy to discussion", led us to consider this aspect in our course delivery. We felt it important that the distant lecturer could converse with the in-class students, which in turn would lead to a greater social presence.

3.1 The Class Session Structure

Approximately 24 hours before each class session, each group of students provided the lecturer with a weekly report summarising their progress, their difficulties and their individual contributions. At the same time the group deposited the latest version of their software in a communal source code repository.

At the start of the three hour class session, each group met remotely with the lecturer for 20 to 30 minutes. At this group session, students demonstrated their applications and the lecturer reviewed the code.

The e-meeting software caused a delay from the time the code was displayed on the student machine and the time it appeared on the remote lecturer machine. This gave rise to a synchronization problems which needed to be resolved. Demonstrations used the iPhone simulator, although an actual demonstration on the iPhone would have been desirable.

After the group sessions, the theory for the week was taught remotely. The theory consisted of a presentation of slides and demonstrations of code on the lecturer's Mac, with the lecturer explaining the concepts and syntax. During the presentation of the slides and the demonstrations, the students were free to ask questions of the lecturer.

During the week the students contacted the lecturer to get help and feedback on their project. Each group worked on a different project.

3.2 The Technological Requirements

The technological requirements were interesting. We considered how we could make the sessions seem like a standard class, but with the lecturer distant. In normal classes, the lecturer and student have the benefit of non verbal communications. Lehtinen et al (1999) state, 'when it concerns computers, the constraints of social interaction are different from the face-to-face communication'. In our system, most of the interaction and affirmation would come through voice communication rather than the facial expressions, which meant that the audio quality had to be high. We needed to consider the clarity of speech of the remote person and we had to allow students to question the lecturer. As a result, the major changes we had to make to accommodate the lack of an on-site lecturer were in the delivery of the theory and in the code review.

The delivery of the theory required:

1. high quality voice transmission in two directions - lecturer to students, and students to lecturer.
2. a screen showing the discussion slides and the software development environment

The code review required:

1. the remote lecturer to see the student's code.
2. synchronization of the display of the code with the discussion (time delays give problems)
3. voice transmission in both directions

An additional feature that was considered desirable was the ability for the students and lecturer to see each other's facial expressions.

The actual presentation materials and demonstration materials were similar to those that would have been presented in a standard teaching class.

4. THE TECHNOLOGY AVAILABLE

We used the standard teaching labs and online content management systems.

4.1 The Teaching Labs

Tutor equipment in the lab included a whiteboard, a screen and a desktop computer (PC) connected to room speakers and a data projector. Various connection points were available, including a telephone jack.

For the students, rows of tables in the centre of the room provided a classroom setting, and desktop computers (PCs) arranged on tables around the edge of the room and wired to a network provided the lab setting. There was also a slow speed wireless network available (1-2 Mb/s).

4.2 The Applications Available

Blackboard and Moodle online course management systems were available for providing the students with course material and classmates' contact details.

5. THE CONSTRAINTS

We had four main constraints.

1. Because we were using standard teaching labs for this course, we were constrained by the user permissions granted by our IT service centre. The desktop computers ran a standard image and were 'locked down', although they did allow some applications to be installed. These applications persisted while the user was logged in; however, they were automatically removed when the user logged out.
2. The students were unfamiliar with remote teaching and learning, which requires greater independence than regular classes. We needed a solution that our students would be comfortable using.
3. Our budget. This was never specified, but nil or close to nil was expected.
4. Time. We decided to try the remote delivery only a short time before the new semester classes started. Cost considerations and the lecturer's work commitments made flying up on a weekly basis untenable.

6. THE PROCEDURE AND TRIALS

Because of the short time frame, inexperience and lack of technical support, the procedure was very much trial and error. A range of free and cheap communications software was tried in combination with a range of microphones, cameras and the computers and data projection equipment in the labs. The hardware and software items were assessed individually, then in combination with the lab hardware and software.

6.1 The Candidate Technologies

Several technologies were tried and assessed.

6.1.1 Web Real Time Communication Software

1. Dimdim – screen refresh rate too slow
2. Apple ichat – Kept dropping out
3. Skype – generally ok, occasionally faded
4. Citrix Online GoToMeeting – was the best of the meeting software that we tried

6.1.2 Web Asynchronous Communication Software

1. Vox – didn't serve our needs – no code repository and although we did use it for most of the course it was closed down before the end causing us to consider alternatives.
2. Twitter – didn't serve our needs – no code repository, students saw each other in and out of class.

6.1.3 Microphones

1. Singstar set of two wireless microphones designed for Karaoke for the Play Station 2 – worked well
2. Polycom – \$2500 for a station for 6 – rejected based on cost

6.1.4 Cameras

1. Microsoft LifeCam VX-500 - insufficient Internet bandwidth in lab to support even one. We were hoping to use six.

6.1.5 Telephones

1. UnidenXDECT R055 speaker phone – audio quality poor especially at full volume, which was needed for the lab setting

6.1.6 Code Sharing Repositories

1. Moodle – no version control
2. Git – suitable
3. Google code – suitable

7. THE SOLUTION TECHNOLOGIES

The solution technologies were chosen for their functionality and reliability when working in the teaching lab environment.

7.1 The Technology Solution for Audio

The software selected was Skype, as it was designed for audio communications and its high speed connection provided good quality audio communication in both directions. In trials, it was audible over the room speakers, with just the occasional fade out and delay. It was also free.

Skype was run on the tutor machine in the lab and needed to be installed at the start of each session. Room speakers were plugged in for the theory session and then unplugged for the group session. Unplugging the room speakers switched the audio to the PC internal speakers.

A Singstar set of two wireless microphones designed for Karaoke for the Play Station 2 was purchased. These worked perfectly on the PC and their USB receiver plugged straight into the PC without the need for drivers to be installed.

7.2 The Technology Solution for Presentations

The software applications selected were Citrix Online GoToMeeting – designed for remote presentations and desktop sharing - and Skype. Before the start of each class session, a small Citrix application was installed on the lab tutor's machine for the GoToMeeting software. The wireless microphone receiver was plugged in to the tutor machine. The visual component of the presentation was run over GoToMeeting, with the audio over Skype.

7.3 The Technology Solution for the Group Session and Code Review

GoToMeeting and Skype were also used for the group sessions and code review, but with a different setup. The student's Mac was put on the front desk, next to the tutor PC, and connected to the wireless network. The Mac was then connected to the same GoToMeeting session used by the remote lecturer and tutor PC. The wireless microphone receiver was plugged in to the tutor machine.

7.4 The Technology for Code Sharing

There was an agreement to use two code sharing repositories. Both had version control features, and individual preference dictated the choice. The remote lecturer had a preference for Git because it was a more commercially robust product than Google but Google was still acceptable.

7.5 The Technology that was discarded

We had been asked by our Learning Centre to set up groups and use Vox and Twitter as teaching tools for communication between students. It proved unpopular because there was no way of sharing code, which was a primary requirement of the course.

Video cameras were discarded because of the limited Internet bandwidth available.

8. THE SOLUTION

The solution proved to be workable within its limitations, but improvements could be made.

8.1 Solution Operation

For the presentation of the theory, the remote lecturer addressed the class via Skype over the room speakers,

and displayed the presentation material on the projection screen via GoToMeeting. The wireless microphones were passed between students so that they could ask questions of the remote lecturer via Skype. The local facilitator was also studying the course as a student and would often lead and encourage questions.

For the group meeting, the lecturer's voice came over the internal PC speakers and students asked questions using the wireless microphones. The code presentation used the GoToMeeting session with control being handed between the lecturer's remote machine and the student's local Mac. There was an inevitable delay from the time the presenter put something on the screen to the time the other end saw it. Experienced presenters are used to this, but for the students, who were inexperienced, the problem was alleviated by simply watching the PC screen which showed them what the remote lecturer was seeing, rather than the Mac screen.

In all class sessions, a local lecturer was present to provide support for the system and some technical support for the students. The majority of the technical expertise came from the weekly meetings with the remote lecturer. As with the students in a similar situation in Micronesia, "the weekly opportunity to interact with the instructor was appreciated. In lieu of face-to-face communication, the weekly ...(remote).. sessions sufficed in providing the real-time communication that people value." (Rao, 2007).

8.2 Solution Evaluation

We handed out a short questionnaire to the 13 students, with the results as follows.

1. Did you find it valuable to have an industry expert to teach you? 11 Students were enthusiastic and commented on his experience and knowledge as being valuable.

2. Was the lecturer's remoteness a hindrance to the presentation of the theory? This question was interpreted in different ways. 5 said it made no difference. 4 commented on the fact that the lecturer made assumptions about their previous knowledge, which the students should have had, but in hindsight, the poorer students lacked. In a face-to-face situation, the lecturer might have picked this up and given extra tuition. Many compared the remote teaching with face-to-face teaching and said they preferred to have the lecturer in the room. It was interesting that in the session when the students filled in the questionnaire, the lecturer was present and gave a theory lesson. Our observations were that, compared to the remote lessons, there was no difference in the number of questions asked, and no difference in the attention paid by students to the theory lesson.

3. Did the use of the technology (i.e. microphones etc) create a barrier to asking questions? There were complaints about the lag time when the network was slow, but most were happy to use the microphones.

4. Was the lecturer's remoteness a hindrance to the discussion of the code? Most were happy with the discussion technique, but one comment was that the code set up time for student groups was too long and cut into discussion time. This could be overcome by doing some of the setup before class. Other comments suggested that the code review should be done in a separate room as the noise from the other students was distracting. The students who were unhappy were generally those that found programming difficult, and wanted more one-on-one help with both syntactical and conceptual level problems.

5. Was the code review helpful? The students who had experimented and produced the most code found the code review most helpful. The students that had followed the instructions to put their code into a code sharing repository, so the lecturer had a copy of their code, also found it useful. Those who met for the code review without the lecturer having a copy of their code found it unhelpful. Several commented that face-to-face would always be better.

6. Were the quality of the audio and visual aspects of the sessions sufficiently high for comfort? Most said yes, but there were comments that the sound level fluctuated and there were also comments that the lag time occasionally was annoying. One student commented that the font size was too small. This font size problem would be the same whether the lesson was remote or delivered locally.

7. Given that there was no local industry expert available, was the use of a remote lecturer acceptable? Most were very happy. Those that weren't were the poorer students, who wanted much more one-on-one help.

From the answers to the questionnaires, we found that many of the problems were unrelated to the technology, and would have existed in a face-to-face teaching situation. The most common complaint about the technology was the slowness of the network, which occasionally caused unacceptable lag time.

8.3 Solution Limitations

This system generally worked well, but there were some minor issues to consider for future implementations of this system.

1. Skype and GoTo Meeting had to be installed at the start of each session but this only took ten minutes.
2. The internal speakers on the tutor machine were quite quiet and at times it was difficult to hear with the noise of the other groups working.
3. The quality of the VOIP Skype audio was generally good, but occasionally had a delay and sometimes faded in and out.
4. The students needed to adapt to a new environment and needed to be proactive in their learning. For this reason, the system might not be so successful with more junior students.

9. CONCLUSION

We found that it was possible to use a remote lecturer without the need for expensive video conferencing equipment. By using Citrix GoToMeeting for the visual aspects of presentations, and Skype for the audio aspects, the software costs were minimal. Using karaoke wireless microphones and standard lab equipment, the students could interact well with the lecturer most of the time. Video cameras required too much bandwidth to use, and were not missed for this course. In courses where there is a requirement to view the participants, cameras could be used, provided there is sufficient bandwidth. The system was quick and easy to set up, and the total cost of the extra hardware, software and connection fees at under US\$200 was considerably less than a full video conferencing system.

The physical presence of the lecturer four times during the semester was beneficial in establishing a working relationship with the students, but was not essential for the delivery of the course. Students who needed a lot of one-on-one teaching struggled, but not as a result of the technology. The system could be used for teaching senior students in a variety of disciplines.

REFERENCES

- Benson, T. A., Cohen A. L., and Buskist W., 2005. Rapport: Its relation to student attitudes and behaviors toward teachers and classes. *Teaching of Psychology* 32:237–39.
- Boice, B. 1996. Classroom incivilities. *Research in Higher Education* 37:453–86.
- De Fazio, T., Gilding, A., Zoren, G. (2000) Student Learning Support in an Online Learning Environment, *ASCILITE 2000, Proceedings of the 17th Annual Conference of the Australian Society for Computers in Learning in Tertiary Education*, Coffs Harbour, Australia. http://www.ascilite.org.au/conferences/coffs00/papers/teresa_defazio.pdf
- Gottschalk, T.H. (ed) (n.d.) Distance Education: An Overview. *Distance Education at a glance Guide 1*. University of Idaho, USA. <http://www.uiweb.uidaho.edu/eo/dist1.html>
- King, C., & McSparran, M. (2003). Online Teaching Demands Online Commitment. *The New Zealand Journal of Applied Computing and Information Technology* 2003, 7(1), 45-49.
- Lehtinen, E, Hakkarainen, K, Lipponen, L, Rahikainen, M., Muukkonen, H, (1999) Computer Supported Collaborative Learning: A Review, University of Helsinki, Finland. Retrieved from <http://www.kas.utu.fi/papers/clnet/clnetreport.html>
- Macdonald, J. (2008). *Blended Learning and Online Tutoring: Planning Learner Support and Activity Design*. Aldershot: Gower Publishing.
- Rao, K. (2007). Distance learning in Micronesia: Participants' experiences in a virtual classroom using synchronous technologies. *Innovate*, 4(1). http://www.innovateonline.info/pdf/vol4_issue1/Distance_Learning_in_Micronesia_Participants%27_Experiences_in_a_Virtual_Classroom_Using_Synchronous_Technologies.pdf
- Rao, K. and Giuli, C. (2010) Reaching Remote Learners: Successes and Challenges for Students in an Online Graduate Degree Program in the Pacific Islands. *International Review of Research in Open & Distance Learning* 11(1). p141-160. <http://www.irrodl.org/index.php/irrodl/article/viewArticle/785/1482>

INTERACTING WITH E-TEXT IN MULTIMEDIA FORMATS BY ESB AND NESB STUDENTS

Xinyang Wang and Dr. Elena Verezub
Swinburne University of Technology, Australia

ABSTRACT

The work reported in this paper is a work-in-progress. For several years, online learning has been widely used within the Australian higher education system. As a cognitive tool, each individual media employed within a multimedia context, has its influence on learners' academic achievement. Moreover, the number of students from non-English speaking backgrounds (NESB) studying in Australia has increased. English as a foreign language creates a critical challenge in comprehending learning materials. In this respect, students of English-speaking background (ESB) and NESB will perform differently. This study aims to evaluate the role that cognitive processes play in interacting with hypertexts with different media links (namely, text, audio, images, animation, and video) in an authentic learning environment. The study will also compare the ability of ESB and NESB students to comprehend hypertexts, and discuss further some basic reasons related to human cognitive style, which will probably affect students' performance within the instructional multimedia contexts.

KEYWORDS

E-learning; multimedia; cognitive style; active learning; ESB; NESB

1. INTRODUCTION

The development of computer and internet based technologies has enabled multimedia to be increasingly integrated within Australian educational settings. As a cognitive tool, multimedia has the potential to extend learners' cognitive functioning in learning processes. Therefore, the quality of learning and teaching could be significantly enhanced as a result of employing multimedia technologies (Dror 2008; Jonassen 2000). However, Norman (1998) stated that each multimedia format has 'affordances' and 'constraints', which can influence learners' achievements. In other words, different media representations have different affordances for learning, thus, the use of multimedia as a cognitive tool results in significant improvement in learning. Previous research on multimedia learning has focused on evaluating multimedia resources and cognitive styles in this way (Brünken, Plass & Leutner 2003).

Cognition is the finite ability to comprehend the content from seeing and hearing (Thompson & McGill 2008). Based on the definition of cognition, cognitive style is generally understood as an individual's preferred way to organise and present information, which is a valuable instructional theory in the implementation of different media resources (Riding & Rayner 1998). Paivio's (1986) proposed that there are two main cognitive sub-systems. One is responsible for processing with visual inputs, the other deals with auditory inputs, and that equal weights may be given to these two types of information processing.

Moreover, the suitability of multimedia learning may depend on factors such as language proficiency and language background. During a recent decade, the number of students from non-English-speaking backgrounds (NESB) studying in Australia has increased. English as a foreign language creates a critical challenge in comprehending learning materials for NESB students (Carstairs et al. 2006). In this respect, the performance and cognitive styles of ESB and NESB students in the active learning process are likely to differ. Indeed, previous studies which measured the cognitive ability of NESB subgroups proved that the English language proficiency influenced students' performance on visual and other auditory subsets (Carstairs et al. 2006).

With an increasing number of NESB students studying in Australia, it is important to establish whether there exist differences in the cognitive styles between students from ESB and NESB in the multimedia

educational contexts. The current research explores the role that cognitive processes play in the successful achievement of academic outcomes when multiple media formats (namely, text, image, audio, animation and video) are used in an authentic learning environment. Also, it compares the ability to comprehend multimedia information between ESB and NESB and further discusses basic reasons which can affect students' performance in the instructional multimedia context.

2. BACKGROUND

2.1 E-Learning and E-texts

E-learning is generally defined as 'a wide range of applications and processes designed to deliver instruction through electronic means' (Clark 2008, p.11). Another focus in defining e-learning is on the importance of e-learning content accessibility. Holmes and Gardner (2006) defined the term 'e-learning' as '...online access to learning sources, anywhere and anytime' (p.14).

Therefore, a number of benefits have arisen with the implementation of the educational technologies. Firstly, e-learning provision has successfully removed many of the barriers which prevented students from taking part in higher education, especially because of location and entry requirements. Secondly, Internet based education enables a student community to access knowledge and information that are updated regularly and maintained at a high level of accuracy (Rosenberg 2001).

Perhaps more importantly, e-learning is considered as a learner-centred approach, which supplies more learning opportunities for individual needs; it has improved the coverage of available learning resources. Also, it has enabled its students to be active and effective learners, having control over their study, including learning methods, learning pace, learning routines, and learning outcomes. Lastly, flexibility is the main factor which is offered by the e-learning setting. Since e-learning appeared, time, distance and location are no longer limitations for learners. Images, sound, and other multimedia resources can be delivered virtually anywhere to enable learners to take part in learning online, whenever and wherever they want (Holmes & Gardner 2006; Rosenberg 2001). In these ways, e-learning is able to be inclusive of a maximum number of participants with the widest range of individual styles, preferences, and needs.

In many cases of e-learning, e-text is a commonly used format which exists in this system. E-text files generally serve the same purposes as the traditional printed texts; allowing users to read. In particular, some digital objects are integrated in e-text, such as Internet, computer, hyperlinks, and multimedia elements (Anuradha & Usha 2005).

A hypertext is an e-text which is cross-linked to various digital resources. While reading and interacting with hypertext, a learner can follow a link to other web pages. Compared with traditional hard-copy books, hypertext resources can provide more interactive experiences for learners. Learning is an active process, therefore, interactivity is one of key issues which can improve learning. The interactivities within hypertext documents enable learners to actively choose instructions in the ways that meet their particular needs (Enlund 2001; Nejdil & Wolpers 2004; Rosenberg 2001).

2.2 Multimedia

The notion of 'multimedia' has evolved with time. Originally, the word 'multimedia' derives from the Latin words 'multum' and 'medium', which means a combination of multiple media file formats (Burke 1972). Several decades later, The Random House Dictionary of English Language (1987) classified 'multimedia' as a noun, denoting the combined use of several media.

In recent decades, the notion of multimedia has been expanded to a larger scale, which has incorporated different media formats, computer technologies, and taken human cognition activities into consideration. According to Neo and Neo's (2001, p.20) definition, multimedia is 'the combination of various digital media types, such as text, images, sound and video, into an integrated multisensory interaction or presentation to convey a message or information to an audience'.

The definition of multimedia by Neo and Neo emphasizes the multiplicity of the field: multiple technical resources, multiple formats and multiple sensory modalities. This definition implies that the multiple media combination adds up to more than element by themselves, which also includes the media elements used, as

well as the influence of media files on human cognitive processes. It effectively links multimedia technologies and human cognitive style together.

Indeed, different media formats have different strengths in storing and delivering information. In the educational environment, multimedia technologies are used to reinforce knowledge (Sloane 2005). There are various types of media formats that have been integrated with learning, including text, audio, image, animation and video. This study focuses on these five formats, which are frequently employed in the authentic learning environment (Thompson & McGill 2008; Wong 2009).

2.3 ESB versus NESB Learners

Nowadays, in Australia, the students enrolled in higher education sectors come from different regions. For several years, teachers and researchers have been investigating how to best teach students of different background within the multicultural environment. With regards to the language spoken, the students are categorised into two groups, those who are of English speaking background (ESB) and those of non-English speaking backgrounds (NESB). According to the Oxford English Dictionary Online (2008), an ESB person is defined as a person who was born in an English-speaking country; or a person who has spoken English from the earliest childhood. An individual of NESB is one who was born in a non-English speaking country; or a person who was born in an English-speaking country with one or both parents from a non-English-speaking country.

Both ESB and NESB students participated in this study. It was found that NESB students involved in the study were mainly international students who came to study to Australia from Asian countries. In turn, ESB students were mainly Australian students, or international students born in an English-speaking country.

2.4 Multimedia Learning

According to Paivio's (1986) dual-coding theory, there are two independent channels, a visual channel and an auditory channel, that tend to deal with information in parallel with human cognitive processes. This allows learners to simultaneously encode messages which are received visually and aurally (Mayer 1997, 2003, 2009). Mayer (1993, cited in Rusbult 1995) draws a framework that is based on the dual coding theory. The theory interprets the cognitive processing of a dual-mode presentation. Figure 2.4 shows that learners' cognitive process are made up of three types of mental 'connections': i.) the visual source is used to form visual representation at the mental level. As a result, the connection between the external visual material and the internal visual representation is established. ii.) The verbal material is used to form verbal representation. Then, the verbal representational connection is set up. iii.) The referential connection between the visual representation and auditory representation is formed by learners.

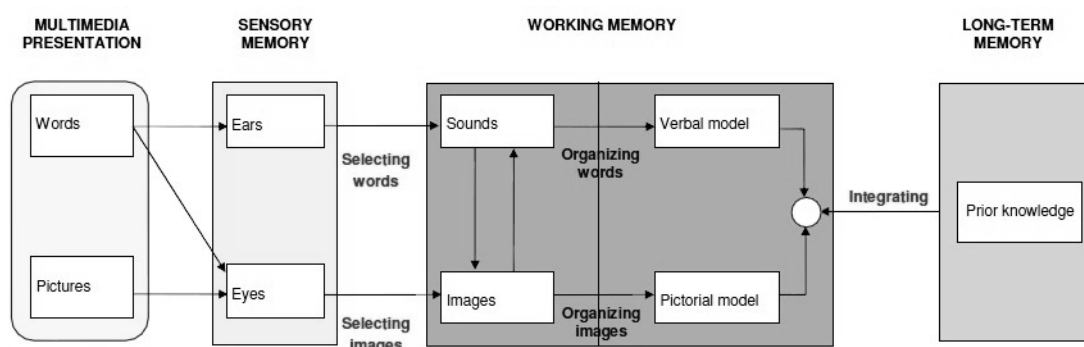


Figure 1. A framework for a cognitive theory of multimedia learning (Source: Mayer 2003, p.129)

Psychological research has shown that auditory information is in fact comprehended more easily when it is presented together with visual information rather than in separate media files (Mayer 1997, 2009). One experimental investigation was conducted by Mayer and Moreno in 1998. They presented materials through different modalities to 2 groups of learners. In the first group, learners viewed the multimedia information that was presented in the animation and text formats. The materials for the other group were presented in

animation and narration formats. The text was replaced with narration. By changing the modalities, the stimuli occupied different cognitive sub-systems: visual and verbal channels. Therefore, the second group of participants enhanced their learning. When learners undergo a multimedia task, their cognitive process will simultaneously encode two different types of stimuli, an auditory stimulus and a visual stimulus (Mayer 2009; Mayer & Moreno 1998).

However, Carstairs et al. (2006) found that the individuals from NESB tend to show a disadvantage on listening related subtests due to a lack of proficiency in English. Thus, audio may not be an appropriately incorporated media format, and would probably reduce the interactivity between NESB students and the multimedia learning contexts.

According to Mayer (2009), an active learning process can effectively help learners to generate relationships between different elements, or between presented information and the learner's prior knowledge. Three processes are therefore essential for active learning; selecting relevant materials, mentally organising the selected materials, and integrating the selected materials and connecting them with their own prior knowledge.

Meaningful learning outcomes occur while a learner accesses appropriate instructional materials in an active learning process. However, learners' cognitive activities are driven in different ways. Language background is one of the key issues which can influence learners' cognitive activities during a learning process. Thus, it is important to know whether differences exist in the cognitive processes between ESB and NESB learners when they interact with learning tasks associated with multimedia.

3. THE RESEARCH PROJECT

This study aims to investigate the effects of different multimedia formats in active learning processes. Students who undertook this study were presented with multimedia learning materials in the hypertext format containing different types of media links, namely, text, audio, images, animation, and video. It was hypothesised that there would be diversity in performance between ESB and NESB students in the active learning process. Thus, ESB and NESB students would recall the experiment-provided multimedia elements, including hypertext with text links, hypertext with image links, hypertext with audio links, hypertext with animation links and hypertext with video links, differently. It was further hypothesised that ESB students' cognitive function would be maximised by hypertext with audio links; and NESB students would show maximum performance of interactivity with hypertext containing text links.

The participants invited to take part in the study consisted of approximately 140 ESB and 70 NESB students, at Swinburne University of Technology (SUT), Lilydale campus. For several years, a Bachelor of Media and Communication course at SUT has attracted a large number of ESB and NESB students. The participants were recruited from the unit 'LPR 100 - Professional Communication Practices'.

The experiment took place in conjunction with students' usual tutorial activities associated with LPR100. During five tutorials, all students were presented with multimedia learning materials (aligned to lecture topics) presented in the hypertext format, i.e. text supplemented with links. The format in which the learning materials were presented differed across the sessions. For example, in session 1, the students were asked to read a hypertext with image links (Figure 2 a). In the session 2, they read a hypertext with audio links. The reading context offered in session 3 was in hypertext with video links (Figure 2 b). In session 4, students read a hypertext with animation links, and a hypertext with text links was given in session 5. After reading a hypertext, the students had to answer nine comprehension questions. Also, the participants were required to complete a brief post-task questionnaire at the end of the fifth session.

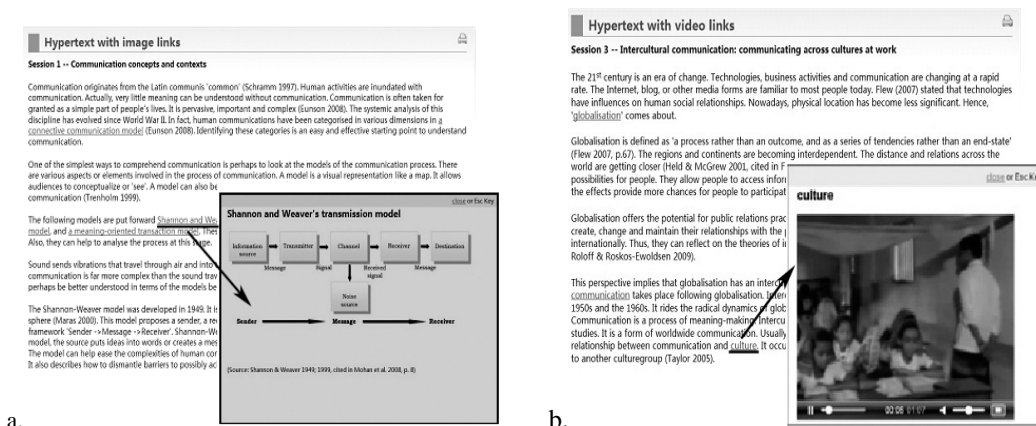


Figure 2. Screen shots of the multimedia learning context.
a. Hypertext with image links and, b. Hypertext with video links

3.1 Data Collection and Expected Outcomes

There were two types of responses involved in the data collection in this study. They included students' answers of comprehension questions and a post-experiment survey. The students' answers came from the related comprehension tasks for each reading session. There were three types of questions: literal, inferential and critical ones, used to examine the students' reading comprehension of hypertexts. The literal questions accessed the surface meaning and the answers were stated in the text explicitly. The answers to the inferential questions cannot be found straight from the context. The students were required to use their prior knowledge in combination with the information from the text. To answer the critical questions, the students were required to apply their prior knowledge, past experience, as well as to analyse and evaluate the information from the hypertext (Lee 2008).

The students' answers were marked, and the information was prepared for data analysis. The post-experiment questionnaire included several questions regarding the participants' attitude and preferences towards multimedia learning with different media elements, namely, text, image, audio, animation and video.

Based on the related theories and previous research, it was expected that the performance of ESB and NESB students in the active learning processes would differ. For example, it is expected that ESB students' cognitive function will be maximised by hypertext containing audio links. NESB students may show maximum performance when interacting with hypertext containing text links. It is hoped that the results of the current research project will provide valuable information for structuring effective instruction models, in order to improve students' academic performance or their degree of recall and comprehension in the multimedia learning content. Also the study will remark the important role of cognitive styles in teaching students from different language background in the multimedia context.

4. CONCLUSION

Nowadays, education has embraced communication and information technologies to shape new meanings to provide information. E-learning is a new approach to teaching and learning which incorporates computer processing, Internet, along with other multimedia technologies, enables global distribution of information. Learning materials have the potential to effectively engage the learners in the active learning processes (Holmes & Gardner 2006). Also, multimedia technologies have the ability to effectively extend learners' cognitive functioning by offering more interactive experience for learners than traditional learning materials (e.g. printed book) (Dror 2008; Jonassen 2000). In addition, there is another concern regarding the diversity of learners. Students of different language background study within Australian universities. NESB individuals may have more language related difficulties than ESB students during a learning process. The educational challenge, therefore, is how to best meet the potential needs of learner diversity.

To enhance the learners' satisfaction and to deal with learner diversity, the instructional designers should provide the students with a greater level of control over educational information processing. Participatory roles are able to significantly motivate learners' engagement and cultivate their ability for critical thinking and reasoning within the active learning processes. With the surge in multimedia and computer based materials, instructional designers are confronted with a range of issues which may attribute to variability of the learners in terms of their cognitive styles, and their situational or social contexts. Thus, cognitive domain, linguistic background, personal differences, past experience and cultural factors should be taken into consideration by instructional designers when creating course related learning materials, in order to satisfy different individuals to achieve the best academic outcomes.

REFERENCES

- Anuradha, K & Usha, H 2005, Use of E-Books In An Academic and Research Environment: A Case Study from The Indian Institute of Science, *Program: Electronic Library and Information Systems*, vol. 40, no. 1, 2006, pp. 48-62,
- Baddeley, A 1986, *Working Memory*, Oxford University Press, Oxford.
- Brünken, R, Plass, J & Leutner, D 2003, Direct Measurement of Cognitive Load in Multimedia Learning, *Educational Psychologist*, vol. 38, pp. 53-61,
- Brooks, D 1997, *Web-Teaching: a Guide of Designing Interactive Teaching for the World Wide Web*, Plenum, New York.
- Burke, L 1972, *A History of Multimedia*, The University of Texas at Austin.
- Carstairs, J, Myers, B, Shores, E & Fogarty, G 2006, Influence of Language Background on Tests of Cognitive Abilities: Australian Data', *Australian Psychologist*, vol. 41, no. 1, pp. 48-54,
- Clark, R 2008, *E-learning and the Science of Instruction: Proven Guidelines for Consumers* 2edn., Pfeiffer, San Francisco.
- Dror, I 2008, Technology Enhanced Learning: the Good, the Bad, and the Ugly', *Pragmatics & Cognition*, vol. 16, pp. 215-223,
- Enlund, N 2001, Being Virtually There -- Reality and Presence in Mediated Learning, *Proceedings of the 2001 International Conference on Telecommunications for Education and Training*, Prague, iv-ix.
- Greenlaw, R & Hepp, E 1999, *Fundamental of the Internet and the World Wide Web*, McGraw-Hill, Boston.
- Holmes, B & Gardner, J 2006, *E-Learning: Concepts and Practice*, SAGE Publications, London.
- Jonassen, D 2000, *Computers as Mindtools for Schools: Engaging Critical Thinking*, Prentice Hall, Upper Saddle River, New Jersey.
- Lee, G 2008, *ESL (ELL) Literacy Instruction: a Guidebook to Theory and Practice* 2edn., Taylor & Francis, New York.
- Maddux, C, Johnson, D & Willis, J 2001, *Educational Computer: Learning with Tomorrow's Technologies*, Allyn and Bacon, Boston.
- Mayer, R 1997, Multimedia Learning: Are We Asking The Right Questions?, *Educational Psychologist*, vol. 19, no. 1, pp. 1-19,
- Mayer, R 2003, The Promise of Multimedia Learning: Using the Same Instructional Design Methods Across Different Media, *Learning and Instruction*, vol. 13, no. 2, pp. 125-139,
- Mayer, R 2009, *Multimedia learning*, 2 edn., Cambridge University Press, Leiden.
- Mayer, R & Moreno, R 1998, A Split-Attention Effect In Multimedia Learning: Evidence for Dual-Processing Systems in Working Memory, *Journal of Educational Psychology*, vol. 90, no. 2, pp. 312-320,
- Nejdl, W & Wolpers, M 2004, 'European e-learning: important research issues and application scenarios,' *Proceedings of ED-MEDIA 2004, World Conference on Educational Multimedia, Hypermedia & Telecommunications, 2004*, Association for the Advancement of Computing in Education,
- Neo, M & Neo, K 2001, Innovative Teaching: Using Multimedia in A Problem-Based Learning Environment, *Educational Technology & Society Education*, vol. 4, no. 4, pp. 19-31,
- Norman, D 1998, *The Design of Everyday Things*, Currency/Doubleday, New York.
- Oxford English Dictionary Online 2008, Oxford University Press, viewed 28 July 2010, <http://www.oed.org>
- Paivio, A 1986, *Mental Representations: A Dual Coding Approach*, Oxford University Press, New York.
- Riding, R & Rayner, S 1998, *Cognitive Style and Learning Strategies*, David Fulton Publisher, London.
- Rosenberg, J 2001, *E-Learning: Strategies for Delivering Knowledge in The Digital Age*, McGraw-Hill, New York.

- Rusbult, C 1995, *Visual Thinking in Education*, viewed 30 Jul 2010, <http://www.asa3.org/ASA/education/teach/visual.htm>.
- Sloane, A 2005, *Internet Multimedia*, Palgrave macmillan, New York.
- The Random House Dictionary of the English Language, U 1987, in *The Random House Dictionary of the English Language, Unabridged*(ed S Flexner) Random House, New York.
- Thompson, N & McGill, T 2008, Multimedia and Cognition: Examining the Effect of Applying Cognitive Principles to The Design of Instructional Materials, *Journal of Educational Computing Research*, vol. 39, no. 2, pp. 143-159.
- Wong, Y 2009, *Digital Media Primer: Digital Audio, Video, Imaging and Multimedia Programming*, Prentice Hall, Upper Saddle River, NJ

COLLABORATIVE CAPACITY BUILDING: A CASE STUDY OF THE DEVELOPMENT OF AN ON-LINE MODULE CONCERNING EMPLOYABILITY AND ENTREPRENEURSHIP

Dave Burnapp^{*}, Zhigang Yan^{**}, Omar Ahmedmia^{*}, Shaowei He^{*} and Wei Zhao^{*}

^{*}*The University of Northampton - Park Campus, Boughton Green Road, Northampton, NN2 7AL, UK*

^{**}*The University of Shaoguan - Shaoguan City, Guangdong Province, PRC*

ABSTRACT

A new understanding of capacity building in development studies stresses the need for reciprocal and collaborative relationships to replace models based on flows of expertise from developed to developing countries. Hence university international collaborations need to be designed to ensure equal participation and to ensure benefits to both parties. This paper reports research concerning the development of a collaborative on-line module involving a Chinese and a UK university relating to entrepreneurship and cross-cultural collaboration, and demonstrates a process of how such reciprocal relations can be established. This case study offers suggestions, concerning methods of intercultural working and the use of Web 2.0 technologies, for similar international collaborations in higher education.

KEYWORDS

Capacity, collaboration, reciprocal, e-learning, social networking

1. INTRODUCTION

This case study describes a joint project between a university in the English Midlands, and a university in South China. This project was funded by the 'China Connect' strand of the second phase of the Prime Minister's Initiative (PMI2), which is a UK government strategy aimed to strengthen the UK's position in international education (British Council n.d.). This strand is concerned with employability and entrepreneurship, and this specific project set out to create a jointly-validated on-line training module for students in UK and Chinese universities, to enable them to develop global entrepreneurship skills, cross-cultural awareness, and communication skills. The two universities had an existing relationship before this project began, and decided to take advantage of this funding to develop these ties more extensively, with the intention of disseminating their experience more widely in the higher education sector internationally.

A core project team was created consisting of academics and careers advisory staff from both universities, and further support was obtained from other departments of each institution, including e-learning developers and educational researchers, when necessary. A specific and innovative aspect of this module is that it envisaged that the participants must form collaborative on-line working groups consisting of students from the two countries sharing materials and working together. It is to be expected that, with the growth of transnational education, such collaborative learning will become more common.

This project hence relates to several of the themes which are emerging concerning the internationalization of higher education including: growth of transnational education (TNE); growth of e-learning and technology-enhanced learning (TEL); growth of collaborative partnerships; staff development; intercultural communication; and the development of students as globalised citizens. It also relates to the more general topic within development studies of capacity building, in particular within an emerging paradigm of mutual collaboration.

Capacity building has long been a key element of development models of international agencies such as UN bodies and non-governmental organizations, and many international links between universities have had capacity building as a central aim. The role of universities in international collaborations has passed through

several phases which mirror the stages of evolving development theory. At a time when the prime model of development was economic growth, and addressing skills shortages and technology lacks, university links focused on arranging North to South flows of knowledge ('filling the gap'). A longer term model then focused on building institutional capacity ('closing the gap') via infrastructure and staff development, with course development and staff training based on visiting experts and recipients' participation in postgraduate programmes in donor institutions. This would include earlier schemes supported by the UK Department for International Development (and its precursors) and the British Council's Higher Education Links scheme (Stephens 2009). Later there was a movement towards encouraging South:South collaborations, and ensuring that local institutions take ownership of schemes to ensure sustainability (Spencer-Oatey 2007; UNDP 2009). This reflected a rejection of 'dependency' (South as recipients: North as donors) and an association of development with autonomy (Sen 1999) and of mutual structures based on reciprocal relations. Future university links will need to be refocused to incorporate these new understandings of development where all participants are seen both as contributors and likely beneficiaries at different levels (individual, institutional, and national). This paper concerns a university collaboration which seeks to conform to this new reciprocal understanding of capacity building.

This case study will illustrate one stage of the process followed to achieve the overall stated aims of the project, which were:

For the *students* to develop:

- Cross-cultural communication skills.
- Knowledge of the business environment of other countries.
- Entrepreneurship competences for the globalised world.
- The ability to work with partners of different cultures.

For the *project team members* to experience:

- Cross-cultural educational collaboration and development of new pedagogic skills.
- Interaction with students in different cultures.

For the *two universities* to achieve:

- Mutual collaboration.
- The development of employable and enterprising citizens.
- Networks concerning entrepreneurship with other universities, government/provincial agencies, and employers in both China and the UK.

2. KEY ISSUES

The specific aspect of the project which this study addresses is about the process necessary for the development of on-line learning and teaching materials which are acceptable and accessible to staff and students from two distinct cultures of learning, and with familiarity of different virtual learning environments (VLEs). Put simply, even if elaborate learning and teaching materials were written, and an attractive and up-to-date VLE was produced, this in itself could not be a guarantee of success. If for any reason the materials were not accessible or acceptable then the project would fail.

It has been shown in cross-cultural projects in any domain that a strict *target-oriented* approach, that is attempting to force through and impose the preferred solutions of one party, is likely to jeopardize success no matter how expert this solution is. It is necessary to accommodate the expectations of all stakeholders involved to ensure success. What is described here, therefore, is the *process-oriented* approach which was taken, which involved all aspects of the collaboration and which might offer lessons which can be transferrable to other collaborative educational projects. This case study will therefore record *how* one aspect of the project was developed rather than details of *what* the project actually produced.

3. RESEARCH QUESTIONS

This paper reports on the outcomes of action research concerning one phase of the project which was carried out by the team to assess the acceptability of some pilot teaching materials which were being devised. It was decided that clarification was needed of the following separate but related aspects of these pilot materials:

- Was the proposed VLE accessible to students in both universities?
- Were the teaching materials, including on-line resource materials the students were to consult and the collaborative activities they were given to perform, acceptable to students who were familiar with different cultures of learning?
- Was it possible to find platforms which would be acceptable to students from two countries which had evolved different social networking communities of practice?

4. HOW THE PILOT MATERIALS HAD BEEN CREATED

During the initiation of the project there had been frequent communication between the teams in the two universities, leading to a face-to-face workshop in China in June 2009. This resulted in agreement on the objectives of the project and its intended learning outcomes, identifying how cross-cultural skills and entrepreneurial competencies could be combined as two intertwined key threads of the training materials and activities for students. It would be easy to gloss this as a completely successful meeting of minds, but later when the two sides started to share proposed teaching materials it was found that there were still substantially different perspectives. To describe this briefly, the Chinese teachers were placing a greater emphasis on detailed and lengthy input materials for the students to read, whilst the UK teachers were placing a greater emphasis on application activities for the students to engage with. However, as a result of the working relationships which had been established during the first workshop, it was possible to merge these two approaches so as to produce teaching materials which aligned the expectations of the staff from the two universities. When the team had written a substantial part of the course materials, the e-learning developers in the UK began to convert a selection of these into e-learning objects so that piloting of the module could begin.

The project team had anticipated in their early plans that there might be *technical* issues concerning compatibility of the two universities' VLEs, but they had not anticipated a *cultural* issue relating to choice of social networking tools. The team discovered that Chinese young people were using different social networking platforms than those mostly used by students in the UK:

There is a rapid growth and high rate of use of internet social networking in China: Godula et al (2009) report that there are around 300 million internet users in China, with 200 million under 29. A key feature is the low usage of non-Chinese platforms such as Facebook compared with the dominance of Chinese platforms such as Bulletin Board Systems (BBS) which allows anonymous postings, Qzone which is aimed primarily at teenagers, Kaixin001 which added 30 million mostly white-collar users in one year, and Xiaonei which has around 40 million student users. Liu & Zoninsein (2007) state that 'a different kind of Internet culture is emerging in China - younger, more devoted, more addicted to speed and intimacy than its Western counterparts,' and also that 'Chinese also seem to be more likely than Americans to use the Web to share and form opinions'. Within education, Kang & Song (2007) report rapid growth leading to estimates of 10.54 million e-Learners in China for 2007. - (Burnapp and Zhao 2009).

Hence to facilitate the international collaborative nature of the project two key issues needed to be addressed. Firstly, to select a suitable on-line platform (VLE) for the effective delivery of the teaching material that would successfully support cross-cultural education, and secondly to select a suitable medium to support the formation of collaborative on-line working groups. The two following paragraphs describe the choices made for the module VLE and then for the collaborative working groups.

A VLE enables large-scale institutional implementation of virtual learning dialogues in which learners and tutors participate in a variety of on-line interactions, primarily teaching and learning. Moodle was chosen as the on-line medium for delivery of the teaching materials due to its open-source nature and its ability to present materials effectively in an e-learning format, by providing common tools and features to form virtual learning dialogues. VLEs, combined with technology enhanced learning through embedded multimedia components, effectively present materials to the learners and allow them to engage with the contents. Virtual

learning dialogues such as forums, blogs, video/audio podcasts and interactive exercises can enhance the overall teaching and learning experience.

International collaborative on-line working groups are often formed by files being transferred via email to participating group members. The key issue here is that multiple file copies exist as a result of emailing files, and hence version control becomes a problem. In order to facilitate the effective formation of on-line collaborative communities between both institutes a new emerging concept known as 'Cloud Computing', was adopted. Cloud computing utilizes synchronous and asynchronous technologies as a means of supporting social and reflective learning through on-line collaboration. There are a variety of non-commercial on-line tools available on the Internet, to organize and facilitate the development of international collaborative outputs for tutors and learners alike, allowing them to share files and work together. Inherently this poses a fundamental problem where files can only be accessed and modified via constant connection to the Internet. This problem was addressed by installing specific software known as 'browser plug-ins', on the clients web browser allowing websites offering cloud computing to allocate users access to their files without constantly being connected to the Internet. Some of the features cloud computing offers includes storing and sharing files, easily controlling who has access, providing the ability to create and share basic word documents, spreadsheets, presentations, drawings, forms and media files.

A second face-to-face workshop was held in early March 2010 with the Chinese team visiting the UK. During this, the team carried out the first stage of piloting of the training modules which had been developed, including staff but not students. This achieved a deeper mutual understanding of important issues which would have significant impact on the delivery of the module including: IT issues; the structure of the training materials; and the level and types of material. It was recognized that it would be necessary to carry out further research involving students in order to test whether the social networking platforms, which had been chosen to enable the interactivity on which the module was premised, were suitable for them. Plans were therefore made to send an e-learning developer and a research assistant to China to further explore this, and at the same time to carry out the second stage of piloting of the training materials and the VLE. On their return to the UK a similar piloting exercise would then be carried out with volunteer students in the UK in order to establish a comparison and establish mutually acceptable materials and platforms.

5. RESEARCH METHODS AND FINDINGS

The researchers involved in this stage of the project were a British e-learning developer, who had adapted the materials written by the teachers in order to produce the on-line pilot materials, and a Chinese educational researcher who is based in the UK. The presence of this researcher allowed primary research to be conducted in participants' own languages. Before going to China the researchers had sent four questionnaires to the Chinese university to gather background information: one for academic staff; one for students from a range of faculties; one for IT staff; and one for management. The aim of these questionnaires was to establish previous experiences and attitudes to e-learning. Similarly, an English version of the questionnaire used with the Chinese students was later used at the beginning of the meeting with the UK students. Replies were obtained from four teachers and 14 students in China and four students in the UK.

The field research stage can be divided into four days: three days when the researchers were in China, and a fourth day on their return to the UK. These four stages involved a series of demonstrations and meetings. The demonstrations in China were delivered initially in English and were translated into Chinese, whilst the meetings were largely held in Chinese and translated into English. In the UK all of the research was conducted in English. Most of the meetings were recorded to enable detailed analysis.

The first day involved staff in China, who included one university teacher and four IT specialists, and explored their experiences of using VLEs and their views concerning the pilot materials. The day started with a presentation about Moodle, and the project pilot materials were demonstrated. Handouts in Chinese and English were given out. In the afternoon, there was a discussion involving two IT staff and the academic who is the lead manager of the project from the Chinese university.

The findings of the first day can be summarized as follows: it was found that there is an official e-learning platform for Chinese universities, which each university has to pay for; most of the staff did not know about Moodle, with just one IT specialist knowing the basic functions of Moodle. The academic in this workshop had a basic knowledge about Moodle, and would like to use it as an e-learning platform in his college. In

general the staff were impressed with the pilot materials, especially a 3D virtual role-play scenario which was included in one activity.

The second day was to meet the students, again to elicit their experiences with VLEs and their instant reactions to the pilot materials. This involved a two hour session in the morning with eleven volunteer students in a computer room, so that each student could examine the materials individually. The presentation both introduced the students to features of Moodle, and demonstrated some of the activities which had been developed as pilot materials for this project. Then the students were asked about their thoughts and their reactions about using VLEs and e-learning. In the afternoon session there was a presentation about Web 2.0 technology (cloud computing) involving a mixture of IT staff, tutors and students, demonstrating Google mail, Google chat, Google docs, and Dimdim.

The findings of the second day can be summarized as: there was a difficulty concerning the slow internet speed, which caused problems loading some of the on-line materials, for example, the 3D virtual role-play scenario. Concerning the language of the audio clips, most of the students (seven out of eleven) were happy that the audio clip had been done in English rather than in Chinese, but the quality of the audio recording was not clear. However, when it was tested in the UK it was found that there was no background noise in the clip itself; hence the difficulty might be caused by the headphones which were used in China. The students also reported that they would like the people who record the audio clips to speak with more emotion. Concerning the transcript of the audio clip, they prefer these to be both in Chinese and English, and would like some of the key words and key sentences to be highlighted to make skim reading easier for them. There were mixed opinions concerning the language in the materials in general, some wanting both English and Chinese versions as they have different levels of English. They suggested English to be used mainly, but if they are struggling to understand they would like to switch to see a Chinese translation by simply clicking words or sentences. Similarly there were mixed opinions about the interactive exercises and the 3D virtual role-play scenario; partly because of the time taken for the video to load. One student also suggested that it would be better if there were explanations and key learning outcomes listed below the video, therefore, students can be clear about why they have to watch it. About the forum, one student suggested that they do not normally use forums to discuss their studies. If they do, they would prefer to discuss a topic when they see it, for example, they would prefer to discuss the video just after watching the video rather than going to another webpage. Some of the students believed that forums would be a good platform of communication between tutors and students.

The third day was a meeting with academic staff to discuss the captured experiences and to draw up plans for future engagement; however the staff who attended this meeting were not the same people who had been involved earlier, hence reducing the value of this. However some plans were made and these plans will be reported in the conclusion of this paper.

The fourth day, in the UK, was to elicit experiences of VLEs amongst UK students, and gather their views concerning the pilot materials. As far as possible this repeated the process which had been followed with the students in China. Four UK students participated. The audio clip was popular, both for convenience and also because a two minute clip can replace a lot of reading. One student suggested combining two of the existing stages of each activity (instructions and aims) to reduce students' confusion about the difference between them. In some cases it was found that the on-line resource materials on other websites were no longer available; hence such links need to be checked regularly. Concerning a 'drag and drop' exercise, the UK students had similar opinions with Chinese students. Both groups of students would like to have better feedback after they did the exercise, especially when they did the exercise wrongly. Generally speaking, they like the way of learning things by reading on-line resource materials first and then doing exercises. They think this way of learning is more interactive. There were mixed opinions about the 3D virtual role-play scenario. One did not like this, because he believes that he can read the scenario faster than watching the video, however others liked the idea, because they can remember the scenario better. The UK students were also happy about having subtitles of one language when the other language is spoken. Concerning the forum, one suggested that most students will not reply to the forum whether using MSN or other platforms unless they have to. However another UK student believed he will use the forum if the discussion topic is something that he is interested in. The students are happy to discuss a subject in a group and then post the conclusions and collect feedback on-line. One suggested that it will be better if he can comment on something without his user name showing. Another student also raised the problem that forums do not provide instant responses. The UK students have positive impressions about Moodle because it is free to use. One believes that it is easy to use and is better than the VLE he is using now. Concerning the number and length of the exercises, one

student suggested there is too much reading; however another student suggested that there is not a lot of stuff to do, and said that students should do a lot of reading. Another student suggested that the length of a reading is not as important as the content, how meaningful it is. He said the content made sense, because it gave insight of whatever is ahead.

6. CONCLUSION

The key learning point which has emerged is the importance of recognizing the complexity which is always inherent in such schemes. It was found that if *any* aspects of the module were not considered suitable by *any* of the stakeholders concerned (including managers, students, and staff) for *any* reason at all (including different expectations of what form the learning activities should take, or lack of conviction concerning the suitability of the learning approaches incorporated into the course materials, or issues relating to acceptability and accessibility of social networking tools) then the materials simply might not be used and the ultimate aims of the project would not be achieved. The process followed in this project, a result of a shared commitment to elicit views from all participants rather than to impose expert solutions, demonstrates how collaborative projects might develop. The need to accommodate alternative expectations of the learning content, different experiences of using e-learning approaches, and recognizing constraints such as in using English as a global language, has enriched the capacity of staff in both institutions.

The findings are summarized below, linked to the three specific research questions identified earlier.

- Was the proposed VLE accessible to students in both universities?

Although both universities already have VLEs these are based on different platforms, and involve the payment of fees, hence it was recognised by the teams in both institutions that Moodle is a suitable medium to deliver the e-learning content because of its open source approach. This choice will necessitate training of the IT team in China, and until they are confident of running Moodle on their servers the module will be hosted, maintained and developed at the English university. This project will require staff to train themselves on technical support, administration, content development and on-line mentoring. The materials which are developed will need to recognise the technical constraints, and not to rely on activities which require too much time to download. Other aspects concerning accessibility include the need to audit technical aspects such as the quality of the headphones so as not to distort audio materials. It is also necessary to check external links to resource materials constantly.

- Were the teaching materials, including the on-line resource materials the students were to consult and the collaborative activities they were to perform, acceptable to students who were familiar with different cultures of learning?

The comfort level of the majority of the students in China and the UK towards the materials was overall positive. However there were suggestions to incorporate both English and Chinese language, without overcrowding the page. The general suggestion to resolve this issue was a 'click and switch' language option so that students can switch languages in order to understand complex linguistic expressions within the material and also for the Chinese students to improve their English by reviewing the Chinese text. Some tutors in China argued to have the content only in English since it is a cross-cultural collaboration project and the students can use the versatile translation software installed on all University PCs in order to translate the English sentences into Chinese for reviewing. A compromise solution will be tested in the next stage of piloting, which will be described later in this case study. A learning outcome for the UK students concerns developing language sensitivity, and developing awareness of how to communicate with partners using English as a global language rather than as a first language.

Concerning the audio clips, the quality of these needs to be good, both quality in production and quality in the devices of the users such as headphones. It is also necessary to explore using pictorial representation of audio scenarios to give a feeling of the environment in context, and for speakers to use lively intonation rather than a neutral speaking style.

Turning to the interactive exercises; the overall feedback from students and tutors in both countries has been very positive, therefore further development in this area would be very promising as a way of enriching the learning and teaching experience, and this will be tested further in the next stage of piloting, and more detailed and reflective feedback will be obtained.

For the 3D video scenario there was a mixed response, however the students would like to see some development in this area, provided the file size is reduced so that the video could be loaded quickly on slow internet connections. The tutors in China suggested filming performances enacted by students rather than 3D virtual representations, however developing these could be more costly and time consuming.

- Was it possible to find platforms which would be acceptable to students from two countries which had evolved different social networking communities of practice?

The solutions proposed were new to students in both countries. Concerning forums and blogging, all the students had shown prior knowledge of using these, and were very positive about using Moodle based forums to post messages on topics of discussions. The demonstration of Web 2.0 communication technologies was widely appreciated, especially Google Docs, however Google's recent issues in China has led to concerns about using Google products as a tool for collaboration between the two universities, therefore further research would need to be carried out to discover alternative tools. 'Dim Dim' on-line web conferencing tool was widely appreciated and it is expected to be a good platform for future engagement between both universities, and this will be tested further in the next stage of piloting.

The aim of this case study identified earlier was to offer lessons which can be transferrable to other collaborative educational projects. The project has so far suggested the following five key points.

Firstly, it is necessary to take time to work through differences. Although the team benefitted from having bilingual members, and further benefitted by beginning the project with firm friendships between team members already in place, it was found that each step needed repeated clarification, and an emerging ability to be able to appreciate the perspectives of other team members in other situations.

Secondly, it is necessary to try to establish and share a complete vision of what the project is trying to achieve, and practice explaining this clearly and succinctly.

Thirdly, it is essential to establish clear communication channels, not only considering technical aspects such as emailing, file sharing, and on-line discussions, but also to allow time for reflection and translation. This project, as well as having bilingual managers, was able to appoint a bilingual Chinese research assistant to ensure that opinions of stakeholders were accurately gathered to be incorporated into the emerging plan.

Fourthly, the project team greatly benefitted from consulting the Global People website http://www2.warwick.ac.uk/fac/cross_fac/globalpeople/ which was itself developed as a result of a much larger collaboration of UK and Chinese universities.

Finally, it is necessary to try to adopt as far as possible, and as far as the project funding body allows, a 'Sliding Planning Window' approach to project management. This is a recognition that overly strict adherence to an established plan will prevent a flexible response to changes, opportunities as well as threats, which will always occur in any project.

The outcomes of the research so far are now being incorporated into further development of the learning and teaching materials, and these will be tested with a single group of students drawn from the two universities, and who will employ social networking tools to enable communication and collaboration. It will be at this stage that the language sensitivity of the UK students will be further tested. Following evaluation of this, the final module will be produced and be available for replication and adaptation by other universities seeking collaboration within this mutual paradigm.

REFERENCES

- British Council, n.d. About PMI2. British Council, London. Available at <http://www.britishcouncil.org/eumd-pmi2-about.htm> [accessed 04.06.2010].
- Burnapp, D. and Zhao, W., 2009. Voices from the chat rooms: research into the experiences of Chinese students participating in transnational education programmes as reported on internet social networks. *Enhancing the Learner Experience in Higher Education*, Vol 1, No. 1, pp 30-43.
- Godula, G., Li, D., & Yu, R., 2009. Chinese Social Networks 'Virtually' Out-Earn Facebook and MySpace: A Market Analysis. *Techcrunch*. Available at: <http://www.techcrunch.com/2009/04/05/chinese-social-networks-virtually-out-earn-facebook-and-myspace-a-market-analysis/> [Accessed 17.06.2009].

- Kang, F. & Song, G., 2007. e-Learning in Higher Education in China: an overview. In H. Spencer-Oatey (Ed.) e-Learning Initiatives in China. Hong Kong University Press, Hong Kong.
- Liu, M., & Zoninsein, M., 2007. These Surfers Do It Their Own Way. Newsweek. Available at: <http://www.newsweek.com/id/78112> [Accessed 26.06.2009].
- Sen, A., 1999. Development as Freedom. Oxford University Press, Oxford.
- Spencer-Oatey, H., 2007. e-Learning Initiatives in China. Hong Kong University Press, Hong Kong.
- Stephens, D., 2009. Higher Education and International Capacity Building. Symposium, Didcot.
- UNDP, 2009. Capacity Development: A UNDP primer. UNDP, New York.

USING AND RESEARCHING WITH INNOVATIVE TECHNOLOGIES IN A HIGHER EDUCATION MULTICULTURAL COURSE

Diane L. Judd, Ph.D., Inez A. Heath, Ph.D. and Mark J. Fenster, Ph.D.
Valdosta State University - Valdosta, GA 31698

ABSTRACT

This study researches the results of the acquisition of multicultural content using two different technology-based approaches in a required course on culture and diversity for teacher education majors in higher education. Test scores were compared between two groups using two distinct methodologies: traditional technology-based instruction and interactive whiteboard instruction, to determine the effectiveness between the groups. Results between pre and post tests indicated significant gains in test scores by the students in the Treatment Group, who received instructions with the use of the interactive whiteboard, compared to the students in the Control Group, who received instruction using the more traditional technology-based strategies centered on PowerPoint lectures that are typically used in higher education. The research also examined how well university students related to what they had learned in the culture and diversity course and their reflections of how this knowledge would impact their futures as teachers and citizens.

KEYWORDS

Higher Education, Multiculture, Multicultural Content Course, Innovative Technologies, Interactive Whiteboard, and Research Study

1. INTRODUCTION

The debate among educational researchers continues over the value of multimedia in the classroom to increase student learning (Moss, et al., 2007; Tate, 2002). New technology innovations to enhance teaching and learning over the past few years have been overwhelming and have often met with resistance from many educators. Additionally, the willingness of faculty to make the transition from the more traditional, tried and true technology methods, that are centered on PowerPoint supported lectures, that has been problematic, (Schneider, 2000; Weisman & Garza, 2002; Yun & Sinnappan, 2009) and there is a need for more research to provide educators with evidence of students' gains in learning when comparing the traditional teachings with the enhanced teachings using the new technologies.

Of the many innovations in educational technology the interactive whiteboard has been one of the most exciting because of the many possibilities for presenting instruction that is inclusive and open to a variety of learning styles (Milner, 2010; Sheehy, Nind, & Simmons, 2004). For example, Valiente (2008) observed that English Language Learners from various Asian cultures in the U.K. schools relied more on memorization as a tool for learning, while strategies that focused on learning through communication and collaboration were not as effective. Lee (2008) also emphasized the importance of teachers' ability to address range of diversity within human cultural communities, and how cultural and linguistic diversity affects cognition, perceptions, and emotions that influence human learning and development.

The question of how we learn and how diversity affects our attitudes about teaching and learning styles has been widely researched and continues to be a central issue (Landerholm, Gehrie, & Hao, 2008; De Vita, 2001). Valiente (2008) noted that the literature on learning styles suggests that although the behavior of some students may appear different from what is defined as a 'high-quality learning process', their conduct does not demonstrate an 'inferior' approach to learning.

De Vita (2001) also points out that considerable research has been conducted on the classification and identification of learning styles but many teachers who wish to use learning style theory for classroom

application are overwhelmed by this vast body of literature. He stresses that little attention has been devoted to the investigation of cultural influences on the development of individual learning style preferences, and how educators can use this information to diversify the way they teach to engage all students.

The need to explore a variety of ways to teach, especially given the increase in diversity in our student population, should be expanded to include courses in higher education. With new technologies, come new opportunities to explore learning styles and strategies related to teaching and learning. Pursell (2009) for example, found many advantages in using cell phones in innovative ways to teach concepts in his course in organic chemistry. Students created flash cards using their cell phones, and said that they were more convenient and fun to look at than paper cards.

To date, the majority of the research on the use of the interactive whiteboards has focused on grades K-12. Gatlin (2007) researched the use of the interactive whiteboard and the evaluation of students' performance in fourth, fifth, and sixth grades. Gatlin's research pointed out that students, who received instruction using the interactive whiteboard performed significantly better in a fourth grade mathematics class. He also found that sixth grade students in his study performed significantly better in their science classes.

There is a growing interest in implementing the innovative technologies in higher education. Tate (2002) advocates the need for more research that focus on implementing innovative technology-based instruction with students at the college level. Although the evidence for expanding the interactive whiteboard technology to the college level classroom seems apparent, the transition has been slow in gaining acceptance (Georgina & Olson, 2008; Schneckenberg, 2009), because instructors must rethink innovative ways to present knowledge within an interactive framework.

2. METHOD

There were 93 subjects, students, in this research. The teacher candidates in our study were assigned two groups prior to the beginning of the semester, according to the days their classes met. The Treatment Group consisted of 48 students, and the Control Group of 45 students. All of the students were students whose majors varied across grade levels (K-12) and in various disciplines including music, art, foreign languages, kinesiology physical education, communication disorders, and deaf education.

The students in the two groups were given a pre and post test and a questionnaire. The same test items were used for both the pretest and the posttest. The pretest was given at the beginning of the course and the posttest was given upon completion of the learning modules developed for this study. Both groups followed the same schedule. The essay questionnaire was given toward the end of the semester. The two research questions for this study:

1. Is there a difference between students' test score gains in a course where instruction is enhanced by strategies that focus on integrating the interactive whiteboard, when compared to students who receive the same instructional materials in which more traditional media supported lectures?
2. How will students relate what they have learned in the culture and diversity course both personally as well as professionally in their course program, towards becoming teachers?

This study included: (a) comparison of effectiveness of the two technology-based approaches, (b) ability to apply information about cultural diversity across contexts and disciplines that they would be teaching, and (c) ability to demonstrate in-depth understanding of the impact that cultural diversity has on teaching and learning for success in a global society.

The collection of data was done using a classroom performance system (CPS), often referred to as "clickers". The CPS system that we used in this study was the *Student Response Systems* by eInstruction. The CPS student response pads are handheld devices, clickers that allow students to respond to questions. Our training also included the use of the CPS and how to assist students in using the "clickers" to respond to the questions on the pre and post tests. The CPS software analyzed the data and provided statistics and feedback that we used in reporting the data for this research.

This study focused on two groups that were taught the content modules using two distinct methodologies: traditional technology-based instruction and interactive whiteboard instruction. The learning modules were developed using a variety of resources and texts. The content covered was the same for both groups, and both groups received outline notes covering the course content.

The students in the treatment group were involved using the interactive whiteboard through hands-on activities. The interactive whiteboard is a large touch-sensitive board that utilizes a computer and projector displaying subject matter in a way through activities that involves students as active participants. This innovative educational tool can be controlled by touch or as a writing surface with a special pen. The interactive whiteboard lessons developed incorporated the subject content through the use of activities, content information, and Internet links.

The interactive whiteboard used in this study was a SMART Board by SMART Technologies. The students in the control group did not have access to any instruction using the interactive whiteboard during the study. Their instruction included lectures enhanced by PowerPoint slides with instructor-directed questioning and students responding as an integral part of the lessons.

The content of the learning modules that was presented to both groups, focused on introducing important concepts about diversity that would elicit reflection and discussions based on prior knowledge that would encourage higher level understanding of how diversity affected and influenced their lives. To this end, both groups had opportunities for written reflection of the content as they progressed through the learning modules. These reflections provided data for comparing student perceptions on how they valued the information they had acquired throughout the course.

2.1 Description of Multicultural Content Course

The course, *Exploring Perspectives in Socio-Cultural Diversity*, has been a recent addition to the education core required curriculum. As a state mandated effort, it reflects the growing national consensus to include more “stand-alone” courses on diversity. The development of the course was supported by many proponents, including Merrier, Irving, Dandy, Dmitriyev, & Ukeje (2007), who stressed the importance of focusing on meaningful multicultural education that examines a variety of issues and involves students in reflecting on their own experiences living in a diverse society.

The goals of the course in this study reflect a wave of changes in attitudes about diversity across campuses that support reforms to expand pre-service teachers’ knowledge. Jetton & Savage-Davis (2007) and Banks (1999) agree that there are many diverse and confusing definitions of multicultural education, and they recommend that introductory courses consider Nilsen & Donelson’s (2003) broader definition that encompasses many facets of multicultural education. They view that it is important for students to glean from courses in multicultural education the philosophical concepts that are formed by the ideals of freedom, justice, equality equity, humanity, and dignity for all people, and that these principles are based on numerous historical documents that are widely known, accepted; and have influenced political and social attitudes over time.

A major obstacle in teacher preparation programs arising from this mismatch of teacher and student cultures is the ability to facilitate a critical consciousness (Hill-Jackson, 2007). Many students may complete courses successfully, but they lack an in-depth understanding of the issues presented in the course especially as it relates to their overall professional development. Moreover, the consensus among many instructors is that the majority of students who “get through” these courses seldom understand how diversity impacts not only their lives but more importantly, they are unable to extend their learning and understand the connection as it relates to our expanding global society.

The course content presented in our study reflects the national standards in education that included preparing teachers to work in classrooms with diverse groups; being able to value cultural differences and pluralism. Topics centered on teachers candidates exploring their own histories and the histories of others in gaining a more positive and multidimensional (Jetton, 2005) understanding of diverse groups. Students also examined learning to work with students from diverse cultural backgrounds who may be oppressed by the dominant culture because of their race, ethnicity, gender, class, language, religion, ability, or age (Gollnick & Chinn, 2002).

Clearly, the challenge for colleges of education to prepare students to work in diverse climates is a high priority. Jetton and Savage-Davis (2006) stress that students will be facing many new challenges as teachers. As local school districts and society at large grow, their awareness of the uniqueness, differences, and similarities among their students will be important in shaping their own professional growth and development.

In summary, our goal in developing the research for this study was not only on comparing the achievement gains of students when taught by two distinct approaches to learning, but also on how well students demonstrated their ability to think analytically, solve problems about issues, and most importantly reflect continuously on how they perceived what they learned as it related to them as educators. Moreover, it is incumbent upon those who are involved in curriculum development in higher education, regardless of discipline, to plan their programs of study to include topics that focus on multicultural issues that pertain to their specific discipline. Also how these issues relate to the complexity of living and working in a diverse world in which linguistic and cultural differences will be an important aspects of a global economy that is dependent on people who can communicate across the cultural barriers as well as having professional skills and knowledge of their academic discipline.

3. RESULTS

This study was conducted with students, who were enrolled in a state-required education class on diversity and multicultural education. The focus of this study included the comparison of gains of students' test scores between the two groups. Each group received the same instructional materials; however, each experienced a different approach. One group received instructions through the use of interactive whiteboard technology, while the other group experienced a traditional technology-based instruction. The study also examined how students' reflected on what they learned from the culture and diversity course and how they would be impacted personally and professionally as future teachers and citizens.

The classroom performance system used in this study aggregated the test data from the pretests and the posttests. The Control Group that had the more traditional technology based instruction had a total of 45 students. The Treatment Group, which received instruction primarily using the interactive whiteboard, had a total of 48 students.

The first research question: Is there a difference of students' test score gains in a course where instruction is enhanced with integrating the interactive whiteboard, when compared to students taking a similar course in which traditional technology strategies are used? The data for the first question included comparing the pretest scores and the posttest scores.

On the pretest, the control group scored an average of 48.67% and the treatment group scored an average of 42.29%. On the posttest, the control group average was 64.56% and the treatment group average was 68.75% (see Figure 1). Both groups increased their test score averages from the pretest to the posttest. The Treatment Group, however, increased their test score average by 26.46%, while the Control Group average only increased their test score average by 15.89%. Therefore, the Treatment Group had a test score average gain of 10.57% over the Control Group test score average gain (see Table1).

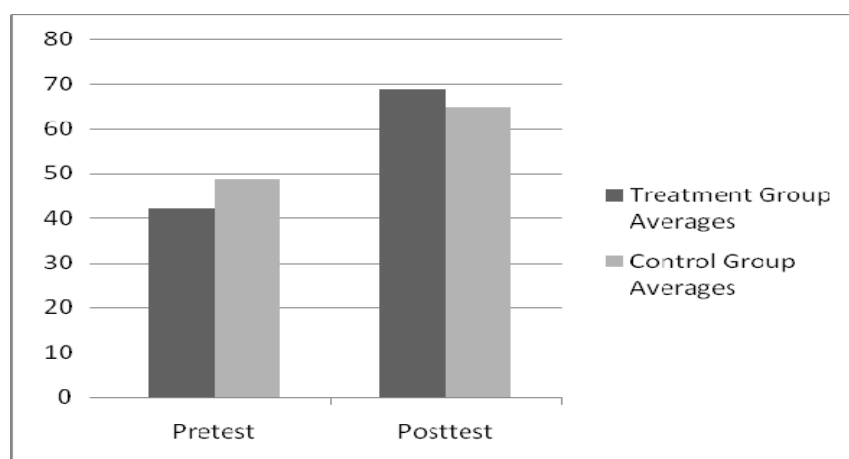


Figure 1. Pre and Post Tests Data. The treatment group average test scores increased 26.46% and the control group average test scores increased 15.89%

Table 1. Test Scores. Average test scores for the treatment group and the control group

	Treatment Group Averages	Control Group Averages
Pretest Scores	42.29%	48.67%
Posttest Scores	68.75%	64.56%
Test Scores Increase	26.46%	15.89%

3.1 Writing Samples of Personal Reflections on Culture and Diversity

Towards the end of the semester, the students were given time to review their notes, and respond to the following question:

Reflect on the things you have learned in this course on culture and diversity. Emphasize how concepts of culture and diversity relate to you as an individual in your day-to-day life. Discuss how the things you learned have influenced your attitudes in your field experiences in the classroom and how you will approach teaching in diverse classroom settings in the future. Elaborate on your comments and focus on clarity in expressing your thoughts.

Students were rated on a 10 point scale by three different evaluators. The three scores were averaged to determine a rating for each of the teacher candidate's responses. Prior to evaluating the students' responses the three evaluators discussed the types of responses that would reflect higher ratings, and decided on the criteria that indicated depth of understanding. The most important was the ability to elaborate, interpret, and relate statements to personal experiences, as well as relating to others having similar situations within other contexts.

The evidence supported by responses on the reflective writing sample that was used for the research and was given towards the end of the semester indicated the following: Students who received higher scores were more reflective and elaborated on their comments, demonstrating their understanding of the relevance of the course both in their personal and professional development. As indicated in Figure 2, the students in the Treatment Group, whose scores averaged 7.6 overall, were more reflective, and demonstrated an ability to relate issues to their own experiences, as well as expressing consideration for how others within different contexts or situations might be impacted or affected.

For example:

I never thought about how one would feel being of mixed race. The video of the B/W high school student who talked about his racial identity, made an impression on me. His comments about his identity dilemma and how he was never accepted by either white or blacks and even being labeled Latino, (which made him feel worse, since he was not Hispanic) made me realize how difficult his life had been. Going through life, not being accepted because of your race (especially when you represent 2 races) made me think more about levels of diversity, and the students that I hope to be coaching in high school. Our president seems to have overcome his identity conflict, but I'm sure he too went through many difficult moments in his own life with regard to belonging somewhere.

In contrast, students in the Control Group whose overall scores averaged in the 6.5 range (see Figure 2), tended to write comments that were more superficial; reflecting basic information from their notes, as seen in the following example:

As teachers, we need to be aware of diversity in our classrooms. When I teach, I will be more aware of diversity and will try to treat all my students fairly, no matter what their intellectual levels or ethnic background may be.

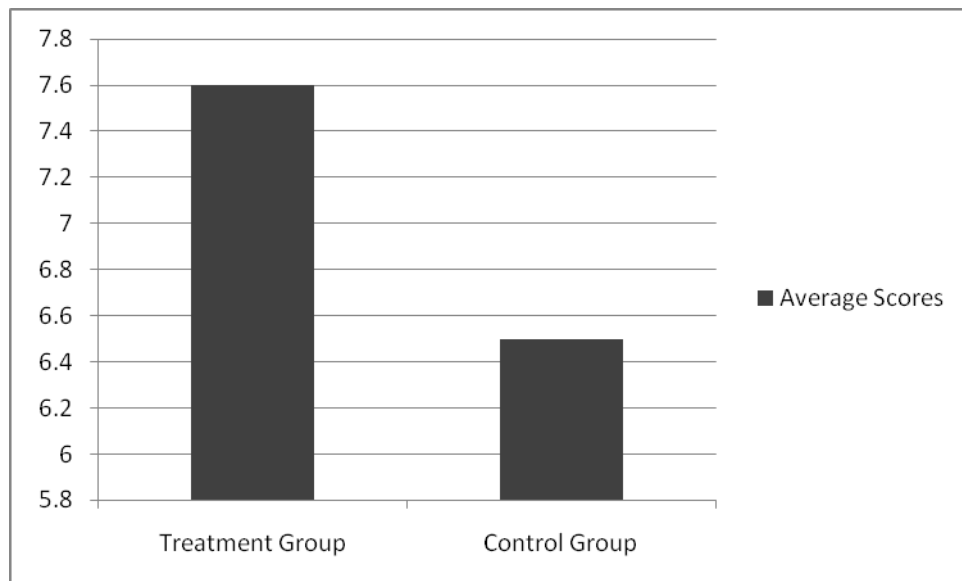


Figure 2. Average Writing Sample Scores. The treatment group average writing score was 7.6 and the control group average writing score was 6.5

Every two weeks throughout the course, the students were given the option to use the last ten minutes of a class to freely associate and reflect on topics presented previously. They were told that the writing assignment was for their own benefit and should be kept as part of their notes for future reference that could be used in responding to the Writing Sample assignment.

3.2 Student Survey of the Interactive Whiteboard Influence on Learning

Additionally, students were asked to respond to a survey about how the interactive whiteboard influenced their learning of the course content. We found the comments to be very encouraging. Some examples of the students' answers are listed below:

- * I was able to stay focused and get involved in the lessons.
- * More hands-on and involvement.
- * Being involved helped me stay attentive in class.
- * Keeps you focused and entertained at the same time.
- * Since I felt like I was part of the lesson instead of listening to it.

4. CONCLUSION

The hypothesis for this study was that the integration of the interactive whiteboard in the lessons for the Treatment Group would show greater gains compared to the gains of the students' test scores in the Control Group that did not have the use of the interactive whiteboard during their course, *Exploring Perspectives in Socio-Cultural Diversity*.

The results of the test scores did confirm the hypothesis for this study. The pre-post test score gains were significantly higher for the students in the Treatment Group as compared to the pre-post test score gains of the Control Group. The 10.57% point difference was statistically significant ($t=-3.2$, $df=91$, $p<.01$). The effect size, 0.66, would be considered moderate by Cohen's (1988) criterion.

Our study was supported by several researchers including Tate (2002), Gatlin (2007), and McNeese (2007), whose technology enhanced studies, included the use of the interactive whiteboard, which reported positive results in the students' teaching and learning process. Tate (2002) noted the increase of interaction of the students with each other and with the instructor during the interactive whiteboard activities. The students in the Treatment Group in our study also listed similar responses to the questionnaire in this study

about how the interactive whiteboard influenced their learning of the course content. Some of the descriptive word comments expressed by the students included that they were “focused”, “attentive”, “involved”, and “entertained”. McNeese (2007) also reported similar comments by the students in her study.

Our observation of the students’ in the Treatment Group also provided support for the value of integrating interactive whiteboard technology in the course with respect to analytical and in-depth reflection of the concepts taught. Students seemed more enthusiastic, and were more involved in discussion and activities related to the diversity topics. Landerholm, Gehrie, and Hao (2003) concur that a more interactive approach to teaching is needed. This “paradigm shift of the twenty-first century” is succinctly described in their introduction:

Teachers for the twenty-first century for the global world need to be proficient in technology and skilled as reflective practitioners. They need to be able to reflect on diversity in myriad ways: learning styles, special needs, cultural differences, racial differences, developmentally appropriate differences, teaching styles and personality differences of children, teachers, parents, community members and administrators. (p. 594)

5. RECOMMENDATIONS

We recommend additional research in higher education to evaluate the impact of the interactive whiteboard on student learning in this course, *Exploring Perspectives in Socio-Cultural Diversity*, as well as other courses in higher education. As noted by Tate (2002), there is a need for more research in higher education on how courses could be enhanced through implementing an interactive whiteboard when teaching higher education students.

In addition, research is needed to study teacher preparation courses where students are interactive learner, and the instructor models effective technology teaching strategies. While media-supported lectures, textbook readings, and class discussions have served well in the delivery of core courses, the move towards integrating strategies that place students in the position of interactively participating through the use of innovative educational technologies that they can enjoy and easily adapt to their learning styles, should be a priority for future research. We further recommend that those involved in teaching courses in higher education take the time to rethink how they have been teaching their discipline and examine ways in which to integrate technology that is innovative and interesting to today’s generation of students. The accessibility to information and to new forms of technology is so diverse; and the possibilities for using tools like the interactive whiteboard to encourage dynamic learning that challenge students’ ability to develop critical thinking skills and to create from their own experiences is exciting, and it presents new possibilities for learning that are yet to be discovered.

REFERENCES

- Banks, J., Cookson, P., Gay, G., Hawley, W. D., Irvine, J. J., Nieto, S., Schofield, J. W. & Stephan, W. G. (2001). *Diversity within unity: Essential principals for teaching in a multicultural society*. 196-203.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2 ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- De Vita, G. (2001). Learning styles, culture and inclusive instruction in the multicultural classroom: A business and management perspective. *Innovations in Education and Teaching International*. 165-174.
- eInstruction. (n.d.). Retrieved from <http://www.einstruction.com>
- Georgina, D. A. & Olson, M. R. (2008). Integration of technology in higher education: A review of faculty self-perceptions. *Internet & higher education*. 11, 1, 1-8.
- Hill-Jackson, V. (2007). Wrestling whiteness: Three stages of shifting multicultural perspectives among white pre-service teachers. *Texas A&M University: Multicultural perspectives, National Association for Multicultural Education*. 9, 2, 29-35.
- Jetton, T. L. & Savage-Davis, E. M. (2005). Preservice teachers develop an understanding of diversity issues through multicultural literature: Part III Creating multicultural classrooms. *Multicultural Perspectives*. 7, 30-38.
- Landerholm, E. et al, (2004). Educating early childhood teachers for the global world. *Early Child Development & Care*. 174, 593-606.

- Lee, C. D. (2008). The centrality of culture to the scientific study of learning and development: How an ecological framework in education research facilitates civic responsibility. *Educational Research*. 37, 267-279.
- McNeese, M. N. (2007). Evaluation of smart multimedia classrooms-impact on student e-learning. *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*. 387-393. Retrieved from <http://www.editlib.org/p/26357>.
- Milner, H. R. (2010). What does teacher education have to do with teaching? Implications for diversity studies. *Journal of Teacher Education*. 61, 118-131.
- Moss, G. et al, (2007). The interactive whiteboards, pedagogy and pupil performance evaluation: An evaluation of the schools whiteboard expansion (SWE) project: London challenge. Retrieved from <http://www.dfes.gov.uk/research/data/uploadfiles/RR816.pdf>
- Nilsen, A. P. & Donelson, K. L. (2003). Resolution and position paper: The definition of multicultural education. *National Association for Multicultural Education*. Retrieved from <http://www.nameorg.org>
- Pursell, D. P. (2009). Adapting to student learning styles: Engaging students with cell phone technology in organic chemistry instruction. *Journal of Chemical Education*. 86, 10, 1219-1222.
- Schneckenberg, D. (2009). Understanding the real barriers to technology-enhanced innovation in higher education. *Educational Research*, 51, 4, 411-424.
- Schneider, C. G. (2000). Diversity requirements. *Liberal Education*. 86, 4. 2.
- SART Technologies ULC. (n.d.). Retrieved from <http://smarttech.com>
- Tate, L. (2002). Using the interactive whiteboard to increase student retention, attention, participation, interest, and success in a required general education college course. Retrieved from <http://smarterkids.org/research/pdf/tate.pdf>
- Valiente, C. (2008). Are students using the 'wrong' style of learning? *Active Learning in Higher Education*. 9, 73-91.
- Weisman, M. E. & Garza, S. A. (2002). Preservice teacher attitudes toward diversity: Can one lassos make a difference? *Equity & Excellence in Education*. 35, 1, 28.
- Yinger, R. & Nolen, A. (2003). Surviving the legitimacy challenge. *Phi Delta Kappa*. 84, 386-390.
- Yun Y. & Sinnappan, S. (2009). Emerging web technologies in higher education: A case of incorporating blogs, podcasts and social bookmarks in a web programming course based on students' learning styles and technology preferences. *Journal of Educational Technology & Society*. 12, 4, 98-109.

BLENDING LEARNING INTERNATIONALIZATION FROM THE COMMONWEALTH: AN AUSTRALIAN AND CANADIAN COLLABORATIVE CASE STUDY

Dr. Shelley Kinash*, Dr. Susan Crichton** and Margaret McAvoy*

*Bond University

**University of Calgary

ABSTRACT

This case depiction addresses the contentious issue of providing culturally and globally accessible teaching and learning to international students in universities in the Commonwealth nations of Australia and Canada. The chapter describes the university systems and cultures, the barriers to authentic higher education internationalization, and the problems frequently experienced by international students. Two university cases are presented and analysed to depict and detail blended learning approaches (face-to-face combined with e-learning) as exemplars of culturally and globally accessible higher education and thereby ideologically grounded internationalization. Lessons learned are presented at the systems level and as teaching and learning solutions designed to address pedagogical problems frequently experienced by international students in the areas of communication, academic skills, teaching and learning conceptualization, and moving from rote learning to critical thinking. The blended learning solutions are analysed through the lens of critical theory.

KEYWORDS

Cultural accessibility; profitability of internationalization; blended learning; Hofstede's five dimensions.

1. SITUATION BACKGROUND

The *cultural and global accessibility* of a university's teaching and learning is a direct measure of whether the university's development mission is to promote intercultural education and worldwide networks or whether that higher education institution recruits international students primarily as lucrative export-industry goods. *Culture* is the overall mindset shaped in a time and place and shared by a group of individuals. When individuals such as international students leave their group they typically carry a mindset with them from their culture of origin to their culture of study. This definition of culture is grounded in Hofstede's (2001) model. He defined culture as "collective programming of the mind" (p. 1). He explained that "it manifests itself not only in values, but in more superficial ways: in symbols, heroes, and rituals" (p. 1). *Cultural accessibility* means that faculty members actively design their teaching to ensure that *all* of their students are learning, through interaction with the instructor, their student peers and with globally responsible and responsive content (McBurnie, 2000). Lanham and Zhou (2003) wrote, "the inclusion of multiple cultures in university courses means that a more flexible approach should be taken with the design of these courses to ensure that all students are able to reach their course goals" (p. 278). Cultural accessibility can only be understood against the backdrop of internationalization which is a conflicted interplay between economy, pedagogy, and ideology (Meiras, 2004).

Surging in the mid 1990s, enrolment of international students in developed Commonwealth nations became a profitable industry (Davies & Harcourt, 2007; De Vita, 2007; Poole, 2001). The economic advantage of international student enrolment drove an operational or business stance on internationalization (De Vita & Case, 2003; Edwards et.al., 2003). De Vita and Case contrasted the economic stance of universities "expand[ing] their financial base by using international students as a source of revenue" with the ideological stance in which the primary work of universities is "preparing students to live and work in a multicultural society through greater understanding and respect for other cultures" (p. 385). While cultural accessibility is a laudable goal, there is a great deal of contemporary discourse presenting universities as

more interested in capitalism than knowledge emancipation (Cimbala, 2002; Gunn, 2000; Huff, 2006; Murray & Dollery, 2005; Versluis, 2004).

Numerous critical theorists argue that administrators have paid so much attention to the profitability of internationalization that universities have not supported the needs of the international student nor benefitted from the knowledge and understanding brought by students from diverse cultures. In short, critics argue that issues of economic viability have diverted attention from the student experience. Davies and Harcourt (2007) wrote, "...considerable funds are spent on marketing and raising expectations when in fact the relationship between the academic staff member and the student is a key source of satisfaction" (p. 122). Brown and Jones (2007) wrote, "...to date, recruitment of international students has been seen by many primarily as a source of income generation, a 'cash cow', and often diverse students, once recruited, were problematized by the academy and seen as needy of support in a kind of deficit model" (p. 2). Brown and Joughin (2007) wrote that once in-program, international students are perceived as "bearers of problems" whereas universities would benefit from perceiving them as "bearers of culture" (p. 58). Post-secondary providers are metaphorically accused of rolling out the red carpet for international student entry, leading to the teaching and learning equivalent of a dungeon rather than palace once the students are inside. This might be as subtle as expectations of references and examples that are institutionally recognized rather than student experienced or as overt as food and dress standards that smell or look correct to the mainstream population.

From May through September 2009, Australia saw a hotbed of media activity reporting accounts of mistreatment of international students and the government's response. Waters and MacBean (May 29, 2009) for *ABC News*; Millar and Doherty (June 1, 2009) for *The Age*, and; Wong (July 13, 2009) as a guest contributor to the *Research School of Pacific and Asian Studies at Australian National University* made seven key points. First, post-secondary education of international students is a \$15.5 billion industry making it Australia's third largest *export* industry earner after minerals and agricultural products. Second, there have been a large number of recent violent attacks on international students from India, and third, some students from China. Fourth, there were arguments regarding whether these attacks were racially targeted or whether the higher incident of attacks on Indian students was statistically proportionate, exacerbated by lifestyle factors that make attacks on students more likely. Fifth, there was dissatisfaction regarding Australian officials' response and perceived inaction to these assaults. Sixth, students held protest marches in Melbourne and Sydney, some of which resulted in physical confrontation between police and protesters. Seventh, Indian parents, officials, and the general public were distressed, resulting in negative public relations regarding Australian international education. These reports were followed by Wendy Carlisle's current affairs inquiry called *Holy Cash Cows*, aired on television July 27, 2009 by Australian Broadcasting Corporation's *Four Corners*. The show exposed: vocational training schools where the student experience did not match what was advertised to students, leaving them without career credentials upon graduation, and; crooked migration agents who were selling falsified certificates of visa requirements. The next surge of media reports addressed the Australian government's response to the allegations and events (e.g. *World News Australia*, July 29, 2009; *Melton Leader*, September 12, 2009; *Brisbane Times*, September 14, 2009). Perhaps Australian post-secondary educators are now outside the eye of the media storm, but the imperative of culturally accessible teaching and learning is heightened.

Neither has Canada been immune to criticism regarding treatment of international students. Reitmanova (2008) addressed Canadian universities' failure to provide equitable no-cost health care insurance to international students. The author referenced other inequities in international student benefits and experiences in such domains as childcare and employment. She wrote that while Canadian universities' rhetoric is of internationalization, "...it seems that the vision for such an environment is a narrow one, focused more on increasing the number of international students and organizing annual international food and craft fairs rather than on safeguarding students' rights" (p. 10). Guo and Jamal (2007) indicated that Canadian universities have not achieved cultural accessibility of teaching and learning in that the unconscious pervasive notion that *white is right* has not been adequately surfaced and addressed in attitude, policy and procedure, meaning that students' differences are treated as problems and deficits. What might be conceived of as an unsettled and transitional stage in internationalization, both necessitates and is indicated by, an emphasis on marketing and international student recruitment (Cudmore, 2005).

Perhaps what is most evident from the above summary of popular media and academic literature is that it is necessary but not sufficient to enrol international students in order to achieve internationalization. Higher education internationalization has numerous elements, and in this paper we are operationally defining internationalization as quality education for students who enrol in an Australian or Canadian university who

do not have citizenship in the respective country. There are numerous stress factors of intercultural study, one of the most significant of which is conversational language (Briguglio, 2000; Patron, 2009; Patron, 2007; Ter-Minasova, 2005) at least in part because language and culture are so embedded that the incoming international student is continually adapting, accommodating and reconciling culture as much as those students from non-English speaking backgrounds are learning to use the mechanics of English (Liddicoat, 2005). For the purposes of this chapter we adopt Leask's (2007) definition of higher education internationalization as learning "...in which students from a variety of cultural and linguistic backgrounds come together in a predominantly English-speaking environment and are taught in English (e.g. in ... Australia, ... Canada and the US)" (p. 86). Higher education internationalization is not achieved merely by recruiting international students. The institution must also foster a pedagogical stance of cultural appreciation and therefore facilitate culturally accessible teaching and learning.

Being an international student to a Commonwealth country has inherent challenges. De Vita (2007) presented an overview of the internationalization literature, focussing on the experience of international students, particularly in the context of the United Kingdom. His appraisal revealed pedagogic problems of international students as a predominant theme. These problems are exacerbated by the fact that universities are not using "culturally inclusive teaching and assessment strategies" (p. 159). De Vita listed the primary problems of international university students as:

1. barriers to effective intercultural communication, such as cultural stereotyping, language fatigue (for both second-language speakers and listeners) and misunderstandings due to the unqualified use of colloquialisms, idiomatic expressions and analogies;
2. a cross-cultural awareness gap in approaches in essay writing, in terms of discourse structures, academic literacies and referencing practices;
3. a cultural clash of learning and teaching styles, exemplified by issues such as the reluctance by some international students to participate in class discussions and in other collaborative and student-centred activities;
4. transitional difficulties in moving from dependence on rote learning to developing intellectual independence, critical thinking, the synoptic capacity and autonomous learning skills. (p. 158)

This chapter describes the solution that two Commonwealth universities have found to facilitate culturally accessible teaching and learning of international students through blended learning. While there are numerous analyses contributing to the specificities of the definition of blended learning in higher education, most authors agree on the basic elements that: a combination of face-to-face and digital teaching and learning approaches are offered to the students; the tools and approaches are deliberately chosen for their capacities and affordances, and; the design requires original creation versus tacking digital elements onto an existing face-to-face scenario or vice versa (Aspden & Helm, 2004; Boyle, 2005; Denis, 2003; Ellis & Calvo, 2004; Kirkley & Kirkley, 2004; Macdonald & Mcateer, 2003; Moore, 2005; O'Toole & Absalom, 2003; Osguthorpe & Graham, 2003; Stacey & Gerbic, 2007). Jelfs, Nathan and Barrett (2004) added an intriguing element to the definition in that blending also connotes *blending into students' lives*. Kerres and De Witt (2003) elaborated that designing pedagogically grounded blended learning means attending to content, communication, and student construction of learning. Lanham and Zhou (2003) specifically applied blended learning within the context of cultural accessibility. They argued that the "benefit of blending is that it allows students from different cultures the ability to select the delivery format of their learning content, hence improving their interaction with the environment" (p. 287). As presented in the cases that follow, it is this flexibility that is the key determinant of culturally and globally accessible higher education.

2. CASE DESCRIPTIONS

Bond University opened in 1989 on the Gold Coast of Queensland, Australia. Bond was the only tertiary institution in Australia designed as an international university, as opposed to an Australian university with an enrolment of international students. As such, Bond has developed specialized programs and pedagogical initiatives to support a consistent enrolment of 40% international students and 60% Australian national students. The 2008 total student population was 3758, 27% of whom were postgraduate. Bond is a private, not-for-profit university with four faculties: business, technology, and sustainable development; health sciences and medicine; humanities and social sciences, and; law. Bond operates through three full

compulsory semesters meaning that students complete a condensed degree. Since establishment, Bond has produced over 12,000 graduates and currently graduates 1500 people per annum. As a newcomer to Australian higher education (Marginson, 2006), Bond University established and has maintained itself as distinctive in teaching and learning. Across the university, Faculty and school administrators, and academics design learning experiences and assessment items that catalyse the four graduate outcomes of: knowledge and critical thinking; leadership, initiative, and teamwork; communication skills, and; responsibility.

Teaching and learning at Bond University is distinctive in three ways. First, the ratio between academics and students is maintained at the uniquely low figure of ten to one. Small course sizes mean that Bond academics are able to meet the desirable pedagogical conditions of multiple means of representation, engagement, and expression. These principles of universal design for learning as described by Jardine, Friesen and Clifford (2006); Kinash (2006); Moulton, Huyler, Hertz, and Levenson (2002); Rose and Meyer (2002); Rose and Meyer (2006), and; Rose, Meyer, and Hitchcock (2005) are a means of meeting the needs of diverse learners through facilitating learning experiences, motivating, and encouraging students to demonstrate their learning in a variety of ways, including a blend of traditional paper-based, digital and multi-media pedagogies. Second, Bond University is broadly and deeply connected to the community. Industry committees extensively informed the initial higher education curriculum, and the professions and professional accreditation continue to shape content and teaching processes. The students participate in work-integrated learning and all learning is conversely integrated through authentic work. Through research partnerships, internships, and a well-supported alumni network, Bond University maintains close ties to its corporate partners. Third, Bond University has committed to blended learning through choosing a combination of face-to-face and e-learning across the university and for 100% of courses, unique in the field of higher education whereby the other Australian universities offer courses in each of the three modes of face-to-face, distance, and blended learning. In other words, at other universities some courses are offered as traditional lectures and tutorials without any interactive online components, other courses are offered entirely online through a learning moderation system and students never physically attend the campus, while still others are offered as a blend. The 100% blended nature of Bond University's pedagogy has proven effective.

Evidence of Bond University's quality is seen in a number of external awards. Most significant to this chapter, Bond is Australia's highest rating university, earning the most five-star ratings of any university across nine key performance indicators (including teaching quality, educational experience, and graduate outcomes) in the 2010 Good Universities Guide. The Law school's mooting team was the world champion of the 2009 International Criminal Court Trial Competition, defeating Yale and Utrecht University in the final of this prestigious competition. The Sustainable Development program is offered in the Mirvac School of Sustainability which won two of the 2009 Gold Coast Urban Design Awards and the 2009 Sustainability in the Built Environment Award. This building is Australia's first education pilot project to receive a six-green-star rating for design, thus demonstrating Bond University's commitment to authentic education of its students and leadership for global sustainability. Finally, Bond University is listed in the 2009 Industry, Company and Business Research's top 500 private companies. This bodes well for the Business students, many of whom prove to be successful entrepreneurs upon graduation.

The University of Calgary (U of C) is a comprehensive university, ranked in the top seven of Canadian research universities, with 17 faculties and 30 research institutes, supporting more than 27,600 students in undergraduate, graduate and professional degree programs. U of C has a full complement of academic programs and encourages multi-disciplinary programs, meaning students can combine their interest areas and create an education that suits them. The university has a commitment to internationalization, recognizing it as an integral part of the economic, political and social realities of its campus and the wider community. There are over 2,100 international students from 100 countries at the U of C and approximately nine percent of undergraduate international students are exchange students, on-campus for only one or two semesters. Internationalization is a priority, and the university is committed to offering more students opportunities for study and travel abroad with over 125 active student exchange agreements as well as a number of field schools and group study opportunities. Currently more than 1000 undergraduates per year include study abroad as part of their degree program. For example, students in the final semester of their Bachelor of Education program can elect to participate in *Teaching Across Borders*, and complete their semester teaching in one of more than 10 countries around the world.

Owing to the size and complexity of the institution, it would be impossible to summarize the responsiveness of each faculty to the issue of internationalization and the inherent challenges identified earlier in this paper. For example, the Faculty of Nursing has opened a campus in Qatar, offering a

bachelor's degree in Nursing, which is contextually based and driven by international standards (<http://www.qatar.ucalgary.ca/home/mission>). Specifically, whereas the case of Bond University focussed on the entire university, this case will focus on the innovative programming of the Graduate Division of Education Research (GDER) – a division within the Faculty of Education.

GDER added distance delivery, in addition to and parallel with, its campus-based graduate programs, thereby extending its reach and access to a range of learners in various locations across Canada and the world. Application to both delivery options is viewed with the same rigorous admission standards. The difference between the two rests with the fees charged (distance delivery is more expensive); courses offered (of the 10 specialisations within GDER, two do not offer their courses online); and degrees offered (the PhD is not offered via distance delivery). Typically, graduate students enrol in a mixture of delivery options, choosing some distance education courses and others with face-to-face components. Most campus-based courses offer online activities, using a learning management system (Blackboard) or other social software such as blogs or WIKIS.

3. CONCLUSION

Learning is about preparing oneself for a changing world. If universities do not lead the way to innovation and technology enhanced teaching and learning, they risk finding themselves obsolete or irrelevant in an increasingly connected, global community. Internationalization allows students to make thoughtful choices about where they would like to receive their education. Blended learning, as suggested in this paper, encourages students to consider global educational experiences but reminds institutions there is more to internationalisation than attracting fee paying, non-resident students.

REFERENCES

- Asmar, C. (1999). Is there a gendered agenda in academia? The research experience of female and male PhD graduates in Australian universities. *Higher Educator*, 38(3), 255-273.
- Aspden, L., & Helm, P. (2004). Making the connection in a blended learning environment. *Educational Technology Research and Development*, 41(3), 245-252.
- Australian Government Department of Education, Employment and Workplace Relations (August 19, 2009). *Media release: Measures to safeguard education for overseas students studying in Australia*. Retrieved September 23, 2009, from http://www.deewr.gov.au/ministers/gillard/media/releases/pages/article_090819_113519.aspx
- Babu, D.R.S. (2008). Digital divide: Educational disparities in India. *ICFAI Journal of Public Administration*, 4(3), 68-81.
- Bell, M., & Farrier, S. (2008). Measuring success in e-learning – A multi-dimensional approach. *Electronic Journal of e-learning*, 6(2), 99-109.
- Bonk, C. & Graham, C (Eds.). (in press). *Handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer Publishing.
- Bourne, R. (2000). Ivory towers or driving forces for change: The development role of Commonwealth universities in the 21st Century. *The Round Table*, 356, 451-458.
- Boyle, T. (2005). A dynamic, systematic method for developing blended learning. *Education, Communication & Information*, 5(3), 221-232.
- Briguglio, C. (2000). Language and cultural issues for English-as-a-second/foreign language students in transnational educational settings. *Higher Education in Europe*, 25(3), 425-434.
- Brown, S., & Jones, E. (2007). Introduction: values, valuing and value in an internationalised higher education context. In E. Jones & S. Brown (Eds.), *Internationalising higher education*. (pp. 1-6). Abingdon, Oxon: Routledge.
- Brown, S., & Joughin, G. (2007). Assessment and international students: helping clarify puzzling processes. In E. Jones & S. Brown (Eds.), *Internationalising higher education*. (pp. 57-71). Abingdon, Oxon: Routledge.
- Carlisle, W. (July 27, 2009). Transcript: Holy cash cows. *Australian Broadcasting Corporation, Four Corners*. Retrieved September 23, 2009, from <http://www.abc.net.au/4corners/content/2009/s2637800.htm>
- Chiang, F. (2005). A critical examination of Hofstede's thesis and its application to international reward management. *International Journal of Human Resource Management*, 16(9), 1545-1563.

- Cimbala, S.J. (2002). Can teaching be saved. *International Journal of Public Administration*, 25(9), 1079-1095.
- Cruickshank, K., Newell, S., & Cole, S. (2003). Meeting English language needs in teacher education: A flexible support model for non-English speaking background students. *Asia-Pacific Journal of Teacher Education*, 31(3), 239-247.
- Cudmore, G. (2005). Globalization, internationalization, and the recruitment of international students in higher education, and in the Ontario colleges of applied arts and technology. *The Canadian Journal of Higher Education*, 35(1), 37-60.
- Currie, J., Harris, P., & Thiele, B. (2000). Sacrifices in greedy universities: Are they gendered? *Gender and Education*, 12(3), 269-291.
- Davies, J., & Harcourt, E. (2007). No shonky, cappuccino courses here, mate. UK perspectives on Australian higher education. *Perspectives*, 11(4), 116-122.
- Dengler, M. (2008). Classroom active learning complemented by an online discussion forum to teach sustainability. *Journal of Geography in Higher Education*, 32(3), 481-494.
- Denis, B. (2003). A conceptual framework to design and support self-directed learning in a blended learning programme. A case study: the DES-TEF. *Journal of Educational Media*, 28(2-3), 115-127.
- De Vita, G. (2007). Taking stock: an appraisal of the literature on internationalising HE learning. In E. Jones & S. Brown (Eds.), *Internationalising higher education*. (pp. 154-168). Abingdon, Oxon: Routledge.
- De Vita, G., & Case, P. (2003). Rethinking the internationalisation agenda in UK higher education. *Journal of Further and Higher Education*, 27(4), 383-398.
- Dhanarajan, G. (2001). Distance education: Promise, performance and potential. *Open Learning*, 16(1), 61-68.
- Edwards, R., Crosling, G., Petrovic-Lazarovic, S., & O'Neill, P. (2003). Internationalisation of business education: Meaning and implementation. *Higher Education Research & Development*, 22(2), 183-192.
- Ellis, R., & Calvo, R. (2004). Learning through discussions in blended environments. *Educational Media International*, 41(3), 263-274.
- Enoch, Y., & Soker, Z. (2006). Age, gender, ethnicity and the digital divide: University students' use of web-based instruction. *Open Learning*, 21(2), 99-110.
- Flew, T. (2008). *New media: an introduction*. (3rd ed.). New York: Oxford.
- Foucault, M. (1972-1977). *Power/Knowledge: Selected interviews & other writings*. (Ed. C. Gordon). New York: Pantheon.
- Gerbic, P. (2005). Chinese learners and computer mediated communication: Balancing culture, technology, and pedagogy. Paper presented at the ASCILITE Conference 2005: Balance, Fidelity, Mobility: Maintaining the Momentum? Queensland University of Technology, December 4-7 2005. Retrieved 24 September 2009, from http://www.ascilite.org.au/conferences/brisbane05/blogs/proceedings/27_Gerbic.pdf
- Gill, C. (1997). Hands-on language learning through drama. In R. Ballantyne, J. Bain, & J. Packer (Eds.), *Reflecting on university teaching academics' stories* (pp. 1-12). Canberra, ACT: Commonwealth of Australia.
- Gliddon, G. (September 12, 2009). Gillard calms Indian student fears. *Melton Leader*. Retrieved September 23, 2009, from <http://melton-leader.whereilive.com.au/news/story/gillard-calms-indian-student-fears/>
- Gu, Q. (2005). "Enjoy loneliness" - Understanding voices of "the" Chinese Learner. *Humanising language teaching*, 7(6). Retrieved September 24, 2009 from, <http://www.hltmag.co.uk/nov05/mart01.htm>.
- Guo, S., & Jamal, Z. (2007). Nurturing cultural diversity in higher education: a critical review of selected models. *Canadian Journal of Higher Education*, 37(3), 27-49.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviours, institutions and organizations across nations*. (2nd ed.). Thousand Oaks: Sage.
- Huff, T.E. (2006). The big shift. *Society*, 43(4), 30-34.
- Ja, C., & Symons-Brown, B. (September 14, 2009). Gillard kicks off student roundtable. *Brisbane Times*. Retrieved September 23, 2009, from <http://news.brisbanetimes.com.au/breaking-news-national/gillard-kicks-off-student-roundtable-20090914-fnct.html>
- Jardine, D.W., Friesen, S., & Clifford, P. (2006). *Curriculum in abundance*. Mahwah, NJ: Lawrence Erlbaum.
- Jelfs, A., Nathan, R., & Barrett, C. (2004). Scaffolding students: Suggestions on how to equip students with the necessary study skills for studying in a blended environment. *Journal of Educational Media*, 29(2), 85-96.
- Kerres, M., & de Witt, C. (2003). A didactical framework for the design of blended learning arrangements. *Journal of Educational Media*, 28(2-3), 101-113.
- Kinash, S. (2006). *Seeing beyond blindness*. Greenwich, CT: Information Age.
- Kirkley, S.E., & Kirkley, J.R. (2004). Creating next generation blended learning environments using mixed reality, video games and simulations. *TechTrends*, 49(3), 42-89.
- Konur, O. (2007). Computer-assisted teaching and assessment of disabled students in higher education: The interface between academic standards and disability rights. *Journal of Computer Assisted Learning*, 23(3), 207-219.

- Lanham, E., & Zhou, W. (2003). Cultural issues in online learning – Is blended learning a possible solution? *International journal of computer processing of oriental languages*, 16(4), 275-292.
- Leask, B. (2007). International teachers and international learning. In E. Jones & S. Brown (Eds.), *Internationalising higher education*. (pp. 86-94). Abingdon, Oxon: Routledge.
- Liddicoat, A. (2005). Teaching languages for intercultural communication. In D. Cunningham, & A. Hatoss (Eds.) *An international perspective on language policies, practices and proficiencies*. (pp. 201-214). Belgrave, AUS: Fédération Internationale des Professeurs de Langues Vivantes.
- Liu, J.N.K., & Cheng, X. (2008). An evaluation of the learning of undergraduates using e-learning in a tertiary institution in China. *International Journal of E-Learning*, 7(3), 427-447.
- Long, P.D., Ehrmann, S.C. (2005). Future of the learning space: Breaking out of the box. *Educause Review*, 40(4), 42-58.
- MacDonald, J., & Mcateer, E. (2003). New approaches to supporting students: strategies for blended learning in distance and campus based environments. *Journal of Educational Media*, 28(2-3), 129-146.
- Marginson, S. (2006). Dynamics of national and global competition in higher education. *Higher Education*, 52, 1-39.
- McBurnie, G. (2000). Pursuing internationalization as a means to advance the academic mission of the university: an Australian case study. *Higher Education in Europe*, 25(1), 63-73.
- Meiras, S. (2004). International education in Australian universities: Understandings, dimensions and problems. *Journal of Higher Education Policy and Management*, 26(3), 371-380.
- Midgeley, W. (2009). We are, he is and I am: The adjustment accounts of two male Saudi Arabian nursing students at an Australian university. *Studies in Learning, Evaluation, Innovation and Development*, 6(1), 82-97.
- Miller, H. (1995). States, economies and the changing labour process of academics: Australia, Canada and the United Kingdom. In J. Smyth (Ed.) *Academic work: the changing labour*. (pp. 40-59). Buckingham: Open University Press.
- Miller, L., Lietz, P., & Kotte, D. (2002). On decreasing gender differences and attitudinal changes: Factors influencing Australian and English pupils' choice of a career in science. *Psychology, Evolution & Gender*, 4(1), 69-92.
- Miller, P., & Doherty, B. (June 1, 2009). Indian anger boils over. *The Age*. Retrieved September 23, 2009 from, <http://www.theage.com.au/national/indian-anger-boils-over-20090531-brrm.html>
- Min-Sun, K. (2007). Our culture, their culture and beyond: Further thoughts on ethnocentrism in Hofstede's discourse. *Journal of Multicultural Discourses*, 2(1), 26-31.
- Moore, M.G. (2005). Editorial: Blended learning. *The American Journal of Distance Education*, 19(3), 129-132.
- Moulton, G., Huyler, L., Hertz, J., & Levenson, M. (2002). *Accessible technology in today's business: Case studies for success*. Redmond, WA: Microsoft.
- Murray, D., & Dollery, B. (2005). Institutional breakdown? An exploratory taxonomy of Australian university failure. *Prometheus*, 23(4), 385-398.
- Norton, P., & Hathaway, D. (2008). Exploring two teacher education online learning designs: A classroom of one or many? *Journal of Research on Technology in Education*, 40(4), 475-495.
- Osguthorpe, R., & Graham, C., (2003). Blended learning environments: Definitions and directions. *Quarterly Review of Distance Education*, 4(3), 227-233.
- O'Toole, J.M., & Absalom, D.J. (2003). The impact of blended learning on student outcomes: Is there room on the horse for two? *Journal of Educational Media*, 28(2-3), 179-190.
- Panda, S. (2005). Higher education at a distance and national development: Reflections on the Indian experience. *Distance Education*, 26(2), 205-225.
- Patron, M.C. (2009). *Diary of a French girl: Surviving intercultural encounters*. Gold Coast, Qld: Bond University Press.
- Patron, M.C. (2007). *Culture and identity in study abroad contexts: After Australia, French without France*. Cultural Identity Studies (Vol.4). (Ed. H. Chambers). Oxford: Peter Lang.
- Pedro, F. (2005). Comparing traditional and ICT-enriched university teaching methods: Evidence from two empirical studies. *Higher Education in Europe*, 30(3/4), 399-411.
- Pittinsky, M.S. (2003). *The wired tower: Perspectives on the impact of the internet on higher education*. Upper Saddle River, NJ: Financial Times Prentice Hall.
- Poole, D. (2001). Moving towards professionalism: The strategic management of international education activities at Australian universities and their Faculties of Business. *Higher Education*, 42, 395-435.
- Postman, N. (2003). Questioning media. In M.S. Pittinsky (Ed.), *The wired tower: perspectives on the impact of the Internet on higher education* (pp. 181-200). Upper Saddle River, NJ: Financial Times Prentice Hall.
- Randaree, K., & Narwani, A. (2009). Managing change in higher education: An exploration of the role of training in ICT enabled institutions in the United Arab Emirates. *The International Journal of Learning*, 16(4), 447-456.
- Reeves, P.M., & Reeves, T.C. (2008). Design considerations for online learning in health and social work education. *Learning in Health and Social Care*, 7(1), 46-58.

- Reitmanova, S. (2008). Unequal treatment of international students in Canada: Handling the case of health insurance coverage. *College Quarterly*, 11(2), 10-10.
- Rodríguez, L., & Cano, F. (2006). The epistemological beliefs, learning approaches and study orchestrations of university students. *Studies in Higher Education*, 31(5), 617-636.
- Rose, D.H., & Meyer, A. (Eds.) (2006). *A practical reader in universal design for learning*. Cambridge, MA: Harvard Education Press.
- Rose, D.H., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. Alexandria, VA: ASCD.
- Rose, D.H., Meyer, A., & Hitchcock, C. (Eds.) (2005). *The universally designed classroom: Accessible curriculum and digital technologies*. Cambridge, Massachusetts: Harvard Education Press.
- Rossiter, D. (2007). Whither e-learning? Conceptions of change and innovation in higher education. *Journal of Organisational Transformation and Social Change*, 4(1), 93-107.
- Shih, C. (2009). *The Facebook era: Tapping online social networks to build better products, research new audiences, and sell more stuff*. Boston: Pearson Education, Inc.
- Sims, J., Vidgen, R., & Powell, P. (2008). E-learning and the digital divide: Perpetuating cultural and socio-economic elitism in higher education. *Communications of Association for Information Systems*, 2008(22), 429-442.
- Siritongthaworn, S., Krairit, D., Dimmitt, N.J., & Paul, H. (2006). The study of e-learning technology implementation: A preliminary investigation of universities in Thailand. *Education and Information Technology*, 11(2), 137-160.
- Skyrme, G. R. (2005). The Reflective Learner: Chinese international students' use of strategies to enhance university study. Paper presented at the International Conference: Reflective Practice - The key to innovation in international education, Council for Research in International Education, Auckland, NZ, (23-26 June 2005). Retrieved 24 September 2009 from, http://www.crie.org.nz/research_paper/G.Skyrme%20WP%2016.pdf
- Stacey, E., & Gerbic, P. (2007). Teaching for blended learning – Research perspectives from on-campus and distance students. *Education & Information Technologies*, 12, 165-174.
- Steyaert, J. (2005). Web-based higher education: The inclusion/exclusion paradox. *Journal of Technology in Human Services*, 23(1/2), 67-78.
- Ter-Minasova, S. (2005). Linguistic aspects of intercultural communication. In D. Cunningham, & A. Hatoss (Eds.) *An international perspective on language policies, practices and proficiencies*. (pp. 215-224) Belgrave, AUS: Fédération Internationale des Professeurs de Langues Vivantes.
- Thorpe, K. (2006). Report on 'Responding to the needs of the Chinese learner in higher education: Internationalising the university'. Paper presented at the 2nd Biennial International Conference, University of Portsmouth, (15th & 16th July 2006). Retrieved September 24, 2009, from <http://www.lass.soton.ac.uk/education/CLearnConfRpt.doc>.
- Venkatachary, R., Vasan, M.L., & Freebody, P. (2009). Training for learner-centred pedagogy and curriculum design agendas in staff development for problem-based learning (PBL). *Kritika Kultura*, 12, 81-99.
- Versluis, A. (2004). Virtual education and the race to the bottom. *Academic Questions*, 17(3), 38-51.
- Waters, J., & MacBean, N. (May 29, 2009). Anger grows over Indian student bashings. *ABC News*. Retrieved September 23, 2009 from, <http://www.abc.net.au/news/stories/2009/05/29/2583942.htm>
- Wedge, C. C., & Kearns, T.D. (2005). Creation of the learning space: Catalysts for envisioning and navigating the design process. *Educause Review*, 40(4), 32-38.
- Wong, R. (July 13, 2009). Problems in Australia's overseas student program. *New Mandala*. Retrieved September 23, 2009 from, <http://rspas.anu.edu.au/rmap/newmandala/2009/07/13/problems-in-australias-overseas-student-program/>
- World News Australia. (July 29, 2009). Government to crack down on 'student rip-offs' Retrieved September 23, 2009 from, <http://www.sbs.com.au/news/article/1061322/Government-to-crack-down-on-student-rip-offs>
- Abiteboul, S. et al, 2000. *Data on the Web: From Relations to Semistructured Data and XML*. Morgan Kaufmann Publishers, San Francisco, USA.

PREPARING INTERNATIONAL ICT STUDENTS FOR THE GLOBAL WORKPLACE: AN AUSTRALIAN EXPERIENCE

Carmela Briguglio and Peter Dell

Curtin Business School - Curtin University - GPO Box U1987 Perth WA 6845 Australia

ABSTRACT

Globalisation is leading to an increasing incidence of multinational/multicultural work teams across the globe. This is particularly the case in the world of business, where English also dominates as the most commonly used language in intercultural situations. This paper describes a project which aimed to prepare English as a Second Language (ESL) students for the English speaking work environment in Australia. Information Systems majors in their final year of a Bachelor of Commerce degree at Curtin University of Technology in Western Australia undertook a specially-designed, preparatory two-day intensive communication skills program, followed by a 16-week work placement in large local companies. The preparatory program aimed to give students socio-linguistic knowledge and skills for formal and informal work-related contexts. Students were also required to engage in a reflexive activity, which they discussed with a member of the project team, whom they met on a regular basis. Evaluation of the program indicates that structured intervention can assist ESL students to prepare for an English-speaking workplace, particularly in developing confidence. However, a shorter preparatory program, coupled with more targeted support, is likely to be more effective if spaced out over the period of the internship, and addressing particular workplace needs and dilemmas as they arise.

KEYWORDS

Globalisation, ICT education, ESL, Work Integrated Learning.

1. INTRODUCTION

Australian universities have seen increasing enrolments from international students since the late 1980s (Mullins, Quintrell & Hancock, 1995). This, combined with the phenomenal spread of English as a global language, particularly in a business context (Crystal, 1997; Brutt-Griffler, 1998; Graddol, 2000 & 2006) makes it imperative for people to become more proficient in intercultural communication in English.

While some may think that the spread of English around the world will make communication easier and that if one is a speaker of English, a little knowledge of the 'other' culture will suffice to ensure effective intercultural communication, nothing could be further from the truth. The global spread of English, in fact, makes the situation more complex (Crystal, 1997; Kachru 1992; Scollon & Scollon, W 1995; Zachary, 2003; Graddol & Meinhof, 1999). Indeed, as Garcia and Otheguy state, "a serious consequence of the spread of English has been that it has created a false sense of mutual intelligibility" (Garcia & Otheguy, 1989, p. 2). This being the case, it becomes imperative for ICT and other students to develop intercultural communication skills, since multinational/multicultural teams are likely to become an increasing feature of the future employment landscape (Smith & Berg, 1997; Distefano & Maznevski, 2000). Furthermore, business schools are perhaps best placed to assist students in developing a global mindset (Kevia, Harveston & Bhagat, 2001).

Although this is an issue for all students, in Australian universities ESL students require targeted support to enable them to develop the skills they will need to operate confidently in an English-speaking workplace. Indeed, there has been so much concern expressed in the media (The West Australian, 2007; Campus Review, 2007 & 2008; The Australian 2007; The Australian Financial Review, 2009) with international graduates' 'poor communication skills' that the Federal government has provided funding for a Professional Year Program to equip international ESL graduates in the ICT and accounting fields with the communication skills needed to enable them to operate more effectively in Australian workplaces.

Just what kind of communication skills students require is, however, debatable. While employers and others are vocal about the need for 'good communication skills', there is no clear agreement as to exactly

what this means. As Holden (2002) reports, while everyone talks about the need for good communication skills, there has actually been very little observation in real workplaces (a notable exception being Holmes [2000] in New Zealand). Moreover, although there is some agreement about the importance of intercultural communication skills (Liddicoat, Eisenchelas and Trevaskes, 2003; Crosling & Ward, 2001) there is a paucity of research on just how such skills can be developed and nurtured.

Research undertaken in multinational companies (Briguglio, 2005) indicates that intercultural communication competence for global workplaces requires a number of closely interrelated skills that are often simplistically referred to as 'good communication skills'. Briguglio's four-dimensional model includes the following elements:

- a high level of competence in English
- knowledge of and familiarity with other Englishes/varieties of English
- cultural knowledge and understanding
- competence in intercultural communication.

These, then, are the skills that ESL students need to develop in order to become competent and confident in operating in Australian workplaces. This pilot project sought to address some of these issues by developing a two-day preparatory program for a group of ICT students, followed by a 16-week work placement in real business environments.

2. THE STUDENTS AND THE CONTEXT

In order for international ICT graduates to obtain permanent residence in Australia, and thus the ability to work in the Australian labour market, they must meet a minimum English standard as measured by the International English Language Assessment Testing System (IELTS). This test ranks English ability in terms of nine bands, ranging from 'Non user' (band 1) to 'Expert user' (band 9). In the past, graduates have been required to have an English ability of at least band 6, or 'Competent user', which is defined as follows:

Has generally effective command of the language despite some inaccuracies, inappropriacies and misunderstandings. Can use and understand fairly complex language, particularly in familiar situations (IELTS Handbook, 2007).

However, Kinnaird (2005) argues that 'Good user' (band 7), defined below, is more appropriate for employment in the ICT field in Australia:

Has operational command of the language, though with occasional inaccuracies, inappropriacies and misunderstandings in some situations. Generally handles complex language well and understands detailed reasoning (IELTS Handbook, 2007).

Kinnaird's point is that it is unlikely that ICT graduates will be able to succeed with anything less than operational command of the language. Similar views have also been expressed by accounting and other professional bodies in more recent times (papers) Insufficient language proficiency may well be a contributing factor to the finding from a study conducted in 2004 by the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) that international ICT graduates, of whom the large majority are ESL, "did not do well" in the Australian job market (Kinnaird, 2005).

As well as English ability, international ICT graduates also face other problems. Employer satisfaction with ICT graduates in general in Australia is relatively low, and such graduates have poor communication and teamwork skills (Hagan, 2004). However, such skills are difficult, if not impossible, to teach, and are best developed through experience (Eleftherakis, Dimopoulos & Dimopoulos, 2007).

Finally, international ICT students' low levels of 'willingness to communicate' is often a barrier to effective participation in the workplace. A range of factors influence ESL students' willingness to communicate, including low self-confidence, lack of familiarity with interlocutors, lack of familiarity with the topic of discussion and cultural influences that lead to the communication being perceived as inappropriate (Cao & Philp, 2006).

In order to address these problems, a work placement program was introduced for ICT students. The intention behind the program was to provide an immersion experience in order to improve students' English ability, and to provide a significant amount of professional experience in order to develop professional and intercultural skills. Additionally, students were prepared for the work placement by way of a two-day

intensive preparatory program, in which workplace expectations and intercultural issues were addressed. The work placement involved a 16 week position in large organisations in Perth, Western Australia. In addition to the duties required of them by the organisation, students were required to keep a reflective journal and to meet with the ICT lecturer on a weekly basis for the duration of their placement. The preparatory program and the work placement are described in the following sections.

3. THE PREPARATORY PROGRAM

The preparatory program was developed by two academics in the Curtin Business School (CBS) one an ICT specialist, and the other an academic language and learning specialist. After some discussion of what we hoped students would achieve through the program we decided a two day intensive program, which could be implemented before the start of semester, would be appropriate. The focus of the first day would be on formal and professional language, while the second day would focus more on the social and interpersonal language of the dominant culture (in this case the Australian workplace culture), the characteristics of which were likely to be unfamiliar to international students. We were dealing with a small group of six to eight students, so it was decided that the language specialist and IS specialist would facilitate these classes together in an informal workshop style, with plenty of interaction and discussion. The two-day program was broadly structured as indicated below in Figure 1 and was implemented two weeks before students were due to begin their work placement.

<i>Day 1</i>	<i>Day 2</i>
Communication Skills Survey (pre)	Impromptu brief presentation
The time capsule – describing how you feel, looking back 20 years from now	Speaking out – offering opinions
Writing a professional CV/resume	Debating techniques
Students revising their CV/resume	Class debate in two teams
Demonstrating your suitability for a position (addressing criteria)	Australian ways of speaking
Interview techniques	Australian social chit-chat, particularly related to sport
Mock interview	Office culture in Australia
Analysis and discussion of day 1	De-brief, discussion and evaluation and Communication Skills Survey (post)

Figure 1. The two day preparatory program

Many of the activities were designed to improve students' confidence. For example, in order to counter the common tendency of self-criticism leading to insecurity, the mock interviews were videotaped and played back to students to demonstrate that their performance was no worse than that of other students and to suggest improvements. Similarly, the impromptu brief presentations were conducted in order to create stressful, but safe, communication situations that students could later look back on as proof of their own capabilities: essentially, forcing them to prove their capabilities to themselves.

The mock interviews also forced students to communicate with interlocutors with whom they had little or no familiarity by using other university staff as members for the interview panel. Further, in other sessions, including the one on interview techniques, students were coached on cultural issues such as the level of modesty and deference that is appropriate in an Australian context.

3.1 Evaluation of the Preparatory Program

The preparatory program was evaluated through: a pre- and post-survey which focussed on communication issues and a written feedback/evaluation form of the overall two day program. These are discussed below with the inclusion of some excerpts from students' written comments.

3.1.1 Communication Skills Survey

The results from the pre- and post-surveys cannot be considered statistically significant due to the small number of students in the program. However, they represent all of the students in the program and do resonate with the staff members' personal experiences as educators.

The pre-survey indicated that students had concerns about IT skills, time-management issues, working under pressure, "*interpersonal skills within the Australian context*" and communication skills more broadly. Students were unsure, at this stage, about the nature of communication issues they might face in the workplace. The post-survey revealed that the two day program had given them a greater awareness about the sorts of communication skills they would require, and reinforced the importance of interpersonal communication skills. Some students had found the mock interview and other oral communication tasks particularly challenging. Students also reported they were now much more aware of the need for communication skills for social and informal interaction in workplaces and they expressed a strong desire to improve their fluency in English. One post-survey student wrote that the skills which would be most relevant for the work placement would be:

communication skills, including listening and speaking; being more confident in describing your ideas and being able to be more social with colleagues.

3.1.2 Written Evaluation of the Two-Day Program

Students' comments were generally positive, indicating the program had benefited them in a number of ways. Among other things, students felt the program was useful because it improved their speaking skills and helped them to understand Australian English. Most reported increased levels of confidence. They also felt that the program had provided the opportunity to develop skills in unfamiliar situations in a non-threatening environment. This was particularly the case with the mock interviews from which all felt they had benefited. Overall, they liked the supportive and informal interaction with the two staff members and other staff who presented short sessions. In this regard one student reported that the best/most useful aspect of the course was "*the very intimate conversation between students and [staff who ran the course]*".

In summarising the impact of the two day program, another student wrote:

This is a really useful course to improve overseas students' communication skills. I hope this program carries on further.

Another wrote:

This course helped me to build up my confidence, gave me some experiences and knowledge, and taught me to listen and speak to native English speakers.

4. OVERALL STUDENT EXPERIENCE OF THE WORK PLACEMENT

Students' experience of the work placement was evaluated in an ongoing way through a reflective journal and at the very end through a presentation, where students summarised their experience.

4.1 The Self Reflective Journal

Students were asked to email their journals to the ICT lecturer on a weekly basis and were encouraged to send the journal one or two days in advance of the weekly meeting in order to give the lecturer time to read it prior to the meeting.

This was the first time students had been asked to keep such a journal in their educational careers, and consequently they were initially unsure about what was appropriate. To minimise their apprehension, the journal was 'scaffolded' by asking the students to reflect on four key issues each week:

- What they did well and would do again
- What they could have done differently
- What they thought could have happened if they had done things differently
- What support or information might help to improve things in future.

This structure encouraged students to think reflectively and avoided a simplistic, event-by-event approach. From the feedback it became clear that students and staff may, in some cases, attribute different reasons for workplace issues. For example, several students experienced problems that seemed to the ICT lecturer to be caused by a lack of confidence in their own abilities, particularly their ability to communicate effectively, rather than lack of communication skills *per se*. However, students' journals focused only on communication skills and intercultural issues. Such issues were discussed during students' meetings with the lecturer, and during these sessions the lecturer provided feedback on focus topics for subsequent journals. In this way the students' reflections were guided so as to maximise their personal development.

Further, it became clear that not all communication situations can be anticipated during the preparatory program. For example, while one student had to deal with difficult clients, another had difficulty with different accents in spoken English. Such events are specific to the unique circumstances of each placement. The method in which students are given regular, weekly guidance in response to the placement as events unfold is therefore an extremely useful aspect of the program.

The ICT lecturer's impression from the journals and weekly meetings was that confidence, communication ability and willingness to communicate all increased over the duration of the work placement as students' familiarity and confidence grew. All students felt much more prepared for the workforce at the conclusion of the work placement.

4.2 The Final Student Presentation

At the end of their four month placement students had to prepare a presentation for a mixed audience, including staff, employers, fellow students and project staff, reflecting on the benefits of the entire program, what they felt they had learned, and suggesting any improvements.

The feedback on the workplace experience was extremely positive and all students felt they had learned an enormous amount. There is little doubt that they considered the placement in a real life business context to be invaluable. Students felt they had acquired many relevant IT professional skills and were proud of their achievements. They also looked and sounded much more confident.

In relation to intercultural communication, the following points emerged. Students felt that establishing relationships in the workplace through communication can be difficult. Indeed, the whole area of dealing with informal situations in an Australian business context was tricky for them. Among other things, they found it sometimes difficult to understand different Australian accents. Students were also unsure about how to treat seniors in an Australian work environment; some found that what appeared to be more casual relationships with superiors was very different to what would be expected in their country of origin. They also noticed some other cultural differences, but were unsure as to whether these issues related to organisational and discipline-specific culture or national culture.

5. DISCUSSION

The value of real workplace experience seems undeniable; it provides students with a rich experience on a number of levels and teaches them skills that are extremely difficult, if not impossible, to replicate in the classroom. The preparation program and workplace experience of students was generally very successful. However, considering all the evidence from the various evaluation tools used and students' final detailed presentation and report, the following points require further consideration.

It became obvious from reports and the evaluation that students and staff cannot accurately predict the sorts of communication skills they need to develop, except in broad terms. More regular meetings of students with project staff to monitor their progress in an ongoing way is therefore likely to be more effective. Input to develop communication skills identified in the particular workplaces could be spaced out with targeted sessions on identified areas of need during the semester. For example, students reported the need for more understanding and interpersonal communication skills for 'how to find out' certain things, asking politely and asking for assistance in appropriate ways. The program could consist of sessions every few weeks with project staff, where students could work on the real workplace dilemmas related to language, culture and behavioural aspects that they encounter.

The preparatory program could perhaps be reduced to one day, so that only some of the more immediately useful sessions are undertaken. A one day program might target resume writing, interview skills and some cultural awareness rising, since it is evident that some of the contextual issues cannot be pre-taught. Similarly, some of the sessions dealing with language and culture would no doubt be more effective if spaced out over the semester, so that students can then apply workplace observation to the issues and theories discussed.

6. CONCLUSION

This paper outlined and analysed a preparatory program for ESL student undertaking an internship in an English-speaking workplace in Australia. The program sought to address intercultural communication and related issues, to better prepare students for the placement.

Student evaluations of the course as well as reports at the end of their four month placement indicate that some preparatory activity is useful, but some communication needs cannot be accurately predicted. It is considered that it would be more effective to shorten the preparatory program and then intersperse intercultural communication sessions regularly during their placement, analysing real workplace dilemmas and cultural issues, and addressing these as the need arises.

This pilot study involved a small cohort of students making the transition from university to the workplace. There is scope for further research with a larger cohort to establish the generalisability of the findings. There is also scope for further research into the ways in which students' cultural backgrounds might have influenced their reactions and experiences, and additional research to investigate experts' evaluations in addition to the students' self-evaluations.

REFERENCES

- Briguglio, C. *The use of English as a global language in multinational settings and the implications for business education*. PhD thesis, The University of Western Australia, Perth, Western Australia.
- Brutt-Griffler, J. 1998. Conceptual questions in English as a world language: Taking up an issue. *World Englishes*, Vol. 17, No. 3, pp. 381-392.
- Ca, Y. & Philp, J. 2006. Interactional context and willingness to communicate: A comparison of behaviour in whole class, group and dyadic interaction. *System* No.34, pp. 480-493.
- Campus Review* .2007. Visa changers elevate English language levels, 24 April, p. 9.
- Campus Review* 2008. International students and the English language: how can we move forward? 29 January, p. 9.
- Crosling, B. & Ward, I. 2001. Oral Communication: the workplace needs and uses of business graduate employees. *English for Specific Purposes*, Vol. 21, pp.41-57.
- Crystal, D. 1997. *English as a global language*. Cambridge University Press, Cambridge.
- Distefano, J. & Maznevski, M.L. 2000. Creating value with diverse teams in global management, *Organizational Dynamics*, Vol. 29, No. 1, pp. 45-63.
- Eleftherakis, G., Dimopoulos, K. & Dimopoulos, A. 2007. Enhancing Student Communication Skills – the Case of the International Students Spring Symposium. Proceedings of the *Informatics Education Europe II Conference 2007*, pp. 44-52.
- Garcia, O. & Otheguy, R. 1989. *English across cultures, cultures across English*. Mouton de Gruyter, New York.
- Graddol, D. & Meinhof U.H. 1999. English in a changing world. *AILA Review* No. 13.
- Graddol, D. 2000. *The future of English*. The British Council, London.
- Graddol, D. 2006. *English next*. The British Council, London.
- Hagan, N. 2004. Employer satisfaction with ICT graduates, in R. Lister & A.L. Young (eds), *Computing Education 2004: Proceedings of the Sixth Australasian Computing Education Conference (ACE2004)*, CRPIT 30, Dunedin, New Zealand.
- The Australian Higher Education Supplement*, 2007. Poor grasp of the medium. 14 February, p. 25.
- The Australian Higher Education Supplement*, 2007. Call to monitor students' English language competence. 14 January, p. 23.
- Higher Education Supplement 2009. Degrees still lure low skill migrants. *The Australian*, 14 February, p. 20.

- Holden, N. 2002. Business communication: a mosaic of new contexts for collaborative cross-cultural learning and knowledge-sharing. *14th ENCoDe conference*, 20-22 June, Munich, Germany.
- Holmes, J. 2000. Victoria University's Language in the Workplace Project: An Overview. *Language in the workplace occasional papers* No.1. [Retrieved March 16 2002 from www.vuw.nz/lals/lwp/resources/op1.htm.]
- IELTS Handbook 2007*, 2007. [Retrieved April 24 2009 from www.ielts.org/PDF/IELTS_Handbook_2007.pdf]
- Kachru, B. 1992. World Englishes: approaches, issues and resources. *Language Teaching* Vol. 25, No. 1, pp. 1-14.
- Kedia, B, Harveston, P. & Bhagat, R. 2001. Orienting curricula and teaching to produce international managers for global competition. *Journal of Teaching in International Business*, Vol. 13, No. 1, pp. 1-22.
- Kinnaird, B. 2005. The Impact of the Skilled Migration Program on Domestic Opportunity in Information Technology. *People and Place*, Vol. 13, No. 4, pp. 67-79.
- Liddicoat, A, Eisenchelas S. & Trevaskes, S. 2003. *Australian perspectives on internationalising education*. Language Australia Ltd., Melbourne.
- Mullins, G., Quintrell, N. & Hancock, L. 1995. 'The Experiences of International and Local Students at Three Australian Universities', *Higher Education Research and Development*, Vol. 14, No. 2, pp. 201-231.
- Scollon, R. & Scollon, S. W. 1995. *Intercultural communication: A discourse approach*. Blackwell, Massachusetts.
- Smith, K. & Berg, D. 1997. Cross-cultural groups at work. *European Management Journal*, Vol. 15, No. 1, pp. 8-15.
- The Australian Financial Review*. 2009. Accountants lost in translation, 14 January, p. 10.
- The West Australian* 2007. 27 September, p. 16.
- Zachary, M. 2003. Five perspectives in intercultural business education. *Business Communication Quarterly*, Vol. 66, No., 3, pp. 73-96.

WORKING WITH A DIVERSE CLASS: REFLECTIONS ON THE ROLE OF TEAM TEACHING, TEACHING TOOLS AND TECHNOLOGICAL SUPPORT

Lincoln C. Wood* and Hendrik Reefke**

**Curtin University of Technology - School of Information Systems, Curtin University of Technology, Perth, Australia*

***University of Auckland - Department of Information Systems & Operations Management, Business School, University of Auckland, Auckland, New Zealand*

ABSTRACT

A variety of teaching methods and supportive tools are at a lecturer's disposal. Comprehensive knowledge of such methods and tools and their effective use can enrich students' lecture experiences and increase their ability as well as willingness to learn. Teaching in a team requires patience and time commitment from all staff involved but can prove to be a good approach to iteratively elevate the quality of course content as well as course delivery. Actively engaging students in a lecture environment and usage of methods that encourage class participation are additional facilitators that can yield a richer learning experience. Employing a pedagogical as well as an expert focus in combination is found to be a valid approach for continuous teaching improvement in a university environment. These insights are based on findings and experiences gained from several semester of teaching an introductory course to operations management in a team setting but may be regarded as partially generalisable and applicable to other teaching requirements.

KEYWORDS

Diversity, structure, cycles, teams, technology, teaching, methods, tools

1. INTRODUCTION

This manuscript examines the teaching processes, benefits, and trade-offs involved when multiple lecturers cooperatively teach a single undergraduate course in operations management/supply chain management (OM/SCM). The role that technology plays as a facilitator of learning is examined in this context. The importance of this research is supported by the finding that team teaching can aid organisational knowledge development. Furthermore it supports the ability of staff involved with a class to improve the delivery of content to a diverse audience. It has been noted that internationalisation and the impact on university education "is a complex process that is as much about whom and how we teach as it is about what we teach" (Leask, 2001, p. 114), and internationalisation is a key driver of diversity in the classes taught. We are following this dual focus by examining both the content-matter of a class (the 'what') as well as pedagogical issues (the 'how'). Some of the steps taken are examined in a case study of a class that has been taught in a team with the use of technology and varied approaches to encourage active learning by students.

2. LITERATURE REVIEW

The development of the New Zealand education sector closely mirrors that in Australia, where student numbers rose rapidly in the 1990s and diversity increased (Martin & Karmel, 2002). A diverse student body has positive benefits as they "represent ideal social forums for promoting cultural understanding; fostering tolerance of diversity; discovering alternative ways of thinking; and developing inter-cultural skills" (Volet & Ang, 1998, p. 6). Yet this diversity also represents a significant challenge to the instructors. With a high level of diversity in classes it becomes necessary to ensure that all groups of students are reached, so that we "get as many students as possible to meet professionally/academically acceptable levels of performance at as high

a level as we can” given our available resources (Buckridge & Guest, 2007, p. 144). This has implications on engagement with the students in the learning process. One method that many instructors use is the incorporation of active learning techniques in class. Active learning refers to the learning process whereby students are engaged in content delivery and are therefore active in the learning process. This is usually achieved through incorporation of activities into the classroom environment (Prince, 2004).

One method of increasing engagement is by carefully designing in class activities. There are several examples of educational games and in-class activities that are suitable in operations and supply chain management classes. These include ‘Games and exercises for operations management’ (Heineke & Meile, 1995) and ‘Implementing lean manufacturing techniques’ (Page, 2004). It has been shown that the use of such games, where students have been given adequate time to learn the rules, can improve their conceptual understanding of concepts. This can be achieved without detailed instruction being given or required, simply through a process of learning by doing. This type of engagement is another form of active learning as students find that such “practices empower them in class and create new opportunities for interaction outside class” (Maruyama, Moreno, Gudeman, & Marin, 2000, p. 78).

3. CASE STUDY

This case study is based on teaching of a second year course called ‘Introduction to Operations and Supply Chain Management’ which is the first full course that focuses on OM and SCM as main subjects in the University of Auckland in New Zealand. Prior to engaging in this course, students are introduced to several key principles in a first year course over a period of four weeks, whereas the remaining eight weeks of that particular course focus on information systems. Thus, with little background knowledge in OM and SCM the course aims to introduce the students to the breadth of related areas. Students gain an understanding of how various OM topics, e.g. forecasting, capacity management, or process design, link together. Furthermore, it increases understanding of how OM and operations managers play a role in businesses and in SCM. Over several semesters this course has been taught by two lecturers. One had taught the course alone previously, while the second became involved after a couple of semesters.

Through detailing aspects of the class, the structures and methods used, we highlight key findings and areas of improvement as we changed the teaching methods in the class to adjust to ‘how’ we could teach rather than ‘what’ we were teaching.

3.1 Structures for Team Teaching

The teaching team for the course consists of two lecturers and a course coordinator. Additional assistance was brought in the form of marking support or guest lecturing when appropriate. The semester is made up of twelve weeks which are divided by a mid-semester break into two halves of even length. The experiences described were obtained using the strategy that one lecturer always takes the lectures in the first half while the second lecturer has full lecturing responsibility in the second half. This approach ensures that the students would have the maximum time with each lecturer. Anecdotal evidence indicated that frequent staff changes are correlated with student dissatisfaction with the course and their overall learning experience.

3.1.1 Lectures, Labs, and Contact Times and Assessments

A block of two hours each week is used as lecture times and a second block of two hours each week is used for small-class size tutorials in a computer lab. The average class size is around sixty students which make it challenging to engage with all the students in a lecture setting. For the two hour lab tutorials the class is split in half as these are taught in two separate lab rooms. The advantage of the smaller tutorials with only up to thirty students is that there is more time spent working with smaller groups and engaging with individuals.

In addition there are also office hours which are handled by the course coordinator. The lecturers had frequently experienced that during a designated office hour they sit in the allocated student contact room and no, or few, students attend. This problem can be mitigated through using the course coordinator, who is involved in multiple courses, allowing the office hours for all courses to be scheduled at one point in time. If there is a substantial number of students that turn up the lecturers can be contacted and brought into the office

hours as well. Furthermore additional office hours with the lecturers present are scheduled when the need arises, e.g. close to assignment due dates or tests.

Student achievement is assessed using several tools. There is an end-of-semester examination accounting for 45% of the grade, a mid-term examination that accounts for 20% of the grade, and a mixture of assignments, completion of modelling work in computer labs, and a case study, accounting for the remainder of the grade. Assessment items are spread over the semester so that students gain feedback as their learning progresses. As the course is a second year course the emphasis in student learning is on engaging with and solving of problems which is reflected by most assessment items. Only few assessments are based on pure reproduction.

3.1.2 Challenges from the Structure

One significant challenge of splitting the lecturing in the described way is the students' perceptions and attachment to specific lecturers. While this is neither good nor bad, and is not a reflection on the first lecturers abilities, many students say they "feel as though we just got used to" the first lecturer, upon being reminded that they are swapping lecturers later.

To cope with such aspects, several steps are taken to facilitate the change of lecturers. At the start of the course the students are introduced to the entire team of staff members. The second lecturer attends the lectures during the first half of the course, and participates in the in-class discussions (see section 3.2.3), or uses the opportunity to work on an article, review material, or read literature so as to not waste time. Already the presence and occasional comment appeared to familiarise the students with the second lecturer. Near the point of hand-over, the first lecturer takes great care to remind students that they will soon have the second lecturer leading the seminars. Finally, the students are exposed to the second lecturer, and spend time interacting with them, during the on-going lab sessions which are led by both lectures simultaneously.

A significant issue that the staff involved in the course is faced with is the consistency of the messages given to the students. Frequently students will email the same question to several staff separately. The potential to have several significantly different answers is a concern. As a preventative measure staff carbon copied the other members when they responded to messages.

There is also the question of equity when a student asks an incisive question about the examination or tests and receives a useful reply. Can it be considered fair that one student alone should benefit from this knowledge? It may be considered that valuable knowledge is equitably exchanged for insightful enquiries; however, the staff felt it more equitable if the answers were compiled into a Frequently Asked Question (FAQ) sheet that is accessible by all students. This ensures consistency of answers to all students and makes full information available. It furthermore reduces the time spent answering individual student question as students can be referred to the FAQ sheet. The downside is the preparation time to compile these FAQs, particularly near test and exam times to ensure the information displayed remains current. It also needs to be clear who is in charge of necessary updates and how much time can be allocated to this task.

Working as a team does require an investment of time and energy of all staff. It may be seen as being 'inefficient' due to the significant coordination times. However, the coordination and the understanding on the part of all staff that is gained can also be seen as rather valuable. There are many examples that illustrate the advantages of team teaching with regard to the course delivery and administration tasks. E.g. mistakes in assessments may be spotted and corrected. Ambiguities or poorly worded assessment items may be noted and corrected. Meeting due dates and deadlines is the responsibility of all staff involved and is therefore rarely forgotten. The team teaching experience shows that inputs from several heads are certainly better than from one and can result in a better structured and well managed course.

3.2 Benefits to Students

3.2.1 English as an Additional Language

The language of instruction in the course is English. Many students in the class face difficulties as the language of instruction is a second language for them. In any given semester the mix of students in the class has approximately consisted of around 50% New Zealand born with strong English language skills, around 25% from Asia, and 25% from elsewhere around the world. This is catered for in several ways. Firstly, one of the lecturers shares English as a second language but is fluent and has great empathy with the students. Secondly, great care is taken with regard to the verbal as well as written communication to the class.

Whenever material is presented to the students, or assessment items are prepared for distribution, the material passes through several checking phases. This enables any ambiguities to be picked up and identifies areas where the wording or language used is not adequately clear. The end results of such revision processes are assessment items and instructions that are more clearly understood by the students. This results in an enhanced ability to complete all assessments and therefore increases their chances to achieve a high grade.

The revision process occurs through the use of a shared staff drive and 'comments' added to Microsoft Word documents. This allows members of the teaching team to jointly access and edit documents.

3.2.2 Use of Lecture Recordings

Not all students are able to attend all lectures as some students work full/part time, fall ill, or have other commitments and therefore miss several classes. This can be catered for through lecture recordings. The lecturers use a tablet PC and PowerPoint slides. When an annotation is required, or a written note or ad-hoc diagram, this is completed using the tablet PC pen, with the result being shown in real time using the computer projector. Along with the slide content and the annotations the lecturer's voice is recorded using a wireless microphone, allowing the lecturer freedom of movement.

The uptake of the lecturer recordings is well noted and well accepted by students. One student that has English as an additional language (EAL) noted that using the recordings they could "replay that bit of the recording over and over until I understood what you meant." If the student fails to understand something the first time around they will be capable of understanding it the next time. It was furthermore found to be very helpful for the exam preparation and might have prevented exam related questions as students were able find answers by listening to the recording again.

3.2.3 Interactivity in the Lecture

Few students want or desire to sit passively through an entire hour-long lecture. To counteract this behavior and encourage participation the material and flow is broken up at least once an hour, ideally twice, through the presentation of an in-class exercise or discussion. This may be as simple as posing a question to the class and asking them to discuss it in pairs or small groups.

This approach creates several benefits. A key benefit is that students remember more when activities are used in the classroom setting (Prince, 2004). Students that had isolated themselves previously may be required to change and also become engaged with other students in the class and form relationships. While many of the students that have EAL challenges may prefer to take a non-participatory role, having several staff present enables the instructors to target such students and work with a small group of them to elicit their responses or perceptions in the exercise. If this step is not taken these students often choose to sit tight and stare stoically ahead. Having multiple staff present gives the opportunity for more engagement with students.

Finally, the use of the tablet PC allows the lecturer to physically take the device around the room to record notes or key points from discussions that they overhear or take part in. This can then be incorporated into a larger, class-wide, discussion about the exercise.

Our experience has been that there is greater engagement in the class-wide discussions when there has been more engagement in the earlier small-group discussions. One of the most important benefits is that the approach allows real-time feedback on what concepts students are struggling to comprehend. If another staff member notices an issue the primary lecturer can be notified and might be able to return to previously covered material to reinforce the students' understanding of this issue.

3.2.4 In-class Games

The lecturers enjoy using games to help them teach key concepts to the class. These included the beer game, the candy factory game, a yield management game, and the red bead game (Walton, 1986).

The beer game is used to demonstrate the bullwhip effect and the impact that this may have on the supply chain and help students to understand how it may be mitigated (Lee, Padmanabhan, & Wang, 1997). While it may be played using boards and tokens, in the form that originated with the MIT development, the lecturers found that the approach was effective but tedious. Students often struggled and made mistakes with backorders which were frequently unapparent until several periods later. By the time students noticed that there was a problem it had become a time consuming task to unravel the mystery of what went wrong when and where. As a solution to these problems the lecturers employed a computerised version of the beer game in the labs. The students still worked in teams of four, but the computerisation enabled the students to focus

on the mechanics of the game as it removed the difficulties associated with calculating the inventory and backorders, allowing the game to progress smoothly. The statistics and results could be immediately compiled for a comparison of the class. Teaching staff could select a good example and bring it up on the projector to illustrate the key teaching points related to the beer game.

The candy factory game is used as a demonstration of lean thinking. In the exercise there is a series of three workstations. The units of production are a cup containing 15 pieces of wrapped candy. The first workstation is given a unit of product to process. The second workstation counts the candy to confirm the correct number is present, and the third workstation places the candy in the cup and returns it to the instructor. The rate of introduction of material into the system is varied from a slow pace, choking the system, to a much faster pace, where the bottleneck is immediately apparent as inventory builds up. Students can time the period it takes for a given customer order to pass through the system when there is little inventory or plenty of inventory. The game is simple, quick to play, and students respond well. It is frequently used as an example in the exam when students seek to explain their answers in inventory related questions, demonstrating that active participation supports the understanding of OM concepts.

The yield management game is played in the computer labs and is based on the game presented in the text book 'Service Management' (Fitzsimmons & Fitzsimmons, 2008). Potential offers of customers are presented, one per slide, to the students, who act as yield managers for an airline. A decision is made whether or not to book the passengers in an attempt to maximise revenue. Finally, the actual numbers of passengers that turn up are revealed. Playing this in the computer labs allows students to download and use a spreadsheet to track their revenue so that at the end they are capable of determining amongst themselves who achieved the highest revenue. Despite the fact that the principles of revenue management, including a booking limit, are discussed in the previous lecture, few students appear to make the connection and only half admit to using the concept when playing the game. This offers a good point to remind students that the knowledge is not just theoretical!

The red bead game was only used in one semester to illustrate the impact of variation on a process. It proved to be less popular than the other games. It was run in the lab with 6 out of 30 students taking part. In the delivery initially too many rounds were played which proved to 'drag out' the experience; fewer rounds would have conveyed the same message without wasting time. Students also appeared to find the more abstract nature of the game and learning challenging to take on board. Thus, a redesign of the original concept by Walton (1986) may be re-introduced at a later stage.

3.2.5 Laboratory Sessions

The labs are used for two purposes. Firstly, they enable the students to engage and work with one another effectively, and secondly, they allow the use of computers to aid the educational process.

Part of the course involves enhancing skills in spreadsheet use. They are given common OM problems to model and solve in spreadsheets. They are provided with written instruction and also a short screencast recording (using the same recording technology as for the lectures) that walks them through the problem. Over the semester the problems become increasingly difficult with fewer explicit instructions. Collaboration amongst students is particularly encouraged and students usually form groups that they sit with each week and help one another when they have difficulties. Students who are more comfortable with the material are also encouraged by the lecturers to help other students. This forms strong bonds amongst the community and reduces the impact of diversity. The same groups frequently collaborate when preparing for assessments. Students appreciate the contact time with the lecturers and several students say that labs are their favourite part of the course.

In running the labs, if possible, two staff members are present. One acts as a presenter and facilitator while the second acts as a 'runner' to answer questions and provide specific help. One half of the time in the lab is frequently used for spreadsheet modelling while the other half is used for activities more aligned with games, case studies, presentations, or discussions. In the smaller lab groups it is possible to ensure that all students participate in the discussions and contribute something valuable to the class.

3.2.6 Reflections and Further Information

Sometimes an insightful question was asked near the end of the allocated lecture time, or required further thought and reflection on the part of the lecturer to answer adequately. Under these circumstances the lecturer is able to utilise the tablet PC and compile a special recording which can then be immediately uploaded and

made available to the class. The approach allows a measured, precise, clear, and succinct presentation of the answer to a question. Students that may struggle with the presentation of complex concepts are able to repeat the recording several times until they fully understand what the lecturer is explaining.

3.2.7 Informal Student Feedback

It was found very useful to conduct an informal feedback session about four weeks into the course. This involved answering some open-ended questions which are handed to the students during the lecture or lab session. Feedback was requested with regard to 'aspects that students liked/disliked' and 'potential areas for improvement'. The student answers are anonymous and therefore result in honest and useful feedback. Overall incorporation of these feedback sessions have been highly useful and are a standard part of the course as they helped to highlight areas of concern with regard to the course delivery and areas for improvement.

3.2.8 Discussion Boards

When online discussion boards were initially set up there was only little student activity. The level of interactivity could be increased, although the staff was wary of having to spend considerable amounts of time monitoring and answering questions on the discussion boards. Once such a tool is established students appear to demand constant availability of the lecturer to answer their questions. If discussion boards were integrated into a course more completely it is perceived that they may function as a many-to-many communication tool, allowing students to engage with one another outside of the teaching areas. Students can be encouraged to answer the queries of other students to help provide clarity in the material covered and discussed.

Greater levels of participation may be reached through providing marks for the value of contributions made by students. Such a practice may of course result in even greater coordination and administration time. Thus, discussion boards are mainly seen useful to foster inter-student communication.

4. DISCUSSION

Reflection on the teaching and learning forced the teaching staff to re-think both the content of the material delivered and their role in content development. The staff have increasingly focused on the delivery and process of teaching to the students, a shift in focus that has also been discussed by other authors (De Vita & Case, 2003). Evaluating the situation led to the belief that the staff resources were being increasingly allocated in a manner that was reducing the subject focus of the material being taught. This was at first concerning as it involved significant investments of time and energy by the team of three staff involved with the class. The worry was that as there was greater diversity of students and more efforts went into working to accommodate the needs of the class, there would be less focus and fewer resources to invest into improving the subject-matter focus and the depth of coverage in the class. With limited resources it was initially envisaged that if allocations towards one aspect of the class increased, this would reduce allocations of resources to the other aspect of the class (Figure 1).

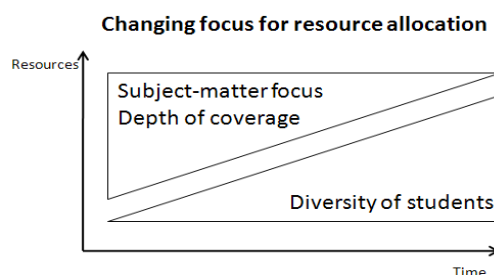


Figure 1. Increasing focus on resource allocation to enable teaching of a diverse student body

Being engaged in a class with a diverse group of peers benefits individual students (Gurin, Dey, Hurtado, & Gurin, 2002), and through increasing the participation and active learning in the class there should be greater opportunity to engage with other students. This may help to partially off-set the somewhat reduced attention to the subject-matter of the class. However, the shifting focus concerned individual staff members.

4.1 Cycles in the Focus

Such a shift in resource allocations, as depicted in Figure 1, presented a one-dimensional perspective of the situation. Further reflection encouraged the development of an alternative model, as the realisation dawned that there was increasing focus, again, on the class content despite considerable pedagogical disruption. It was realised that there were positive and negative aspects to each focus, which in turn, propelled evolution of the focus to a different area.

Initially the emphasis had been on the content of the class, and development of contents by experts in the area. This had positive benefits as it ensured that material was current and expert knowledge was utilised. However, as feedback was received from students, it was realised that there was a failure to grasp the concepts being presented. This resulted in a shift towards a pedagogical focus, with an emphasis on improved delivery of material to increase study comprehension. Thus, there must be a simultaneous focus on pedagogical aspects and expert-orientated content.

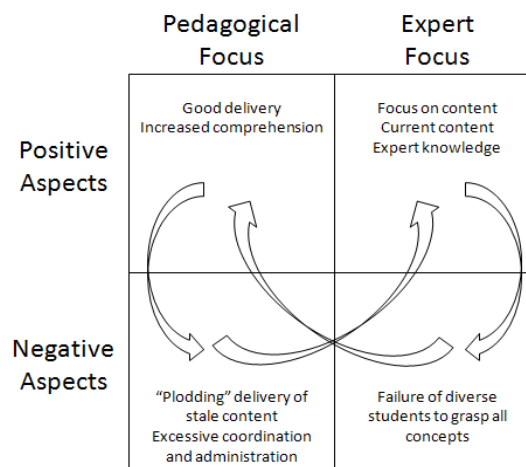


Figure 2. Cyclic nature of dual focus

Terenzini, Cabrera, Colbeck, Bjorklund, and Parente (2001, p. 527) note that "what happens in a course is far-and-away a more powerful predictor of learning outcomes than is the level of classroom diversity." If the delivery was more important than the diversity, it may be still driven by the diversity. The cycle presented in Figure 2 explains this paradox. Diversity can lead to greater focus on 'what happens in a course' which can, in turn, strengthen the outcomes for students.

However, it is more than just 'what happens' and there needs to be focus on how it happens, as "lecturers can take heart that their passion and enthusiasm, combined with an interactive and structured teaching approach, can greatly enhance the learning experience of students and lead to higher levels of attendance and academic achievement" (Revell & Wainwright, 2009, p. 221). Future work in the class involves working on the content material to structure it in an appropriate method to incorporate aspects of Bloom's Taxonomy (Krathwohl, 2002), ensuring that the understanding demonstrated is appropriate at the class level.

Another benefit of the focus on the pedagogical requirements of the class is that it can help to reduce the adjustment period of students which can be beneficial to their learning (Zhang, Sillitoe, & Webb, 1999). This part of the learning process had also concerned staff as there would regularly be a large amount of international students, from parts of Asia, Europe, and North America present in the class.

5. CONCLUSIONS

Through the exploration of the stage two university course 'Introduction to Operations and Supply Chain Management' and the teaching-orientated improvements made, it is seen that a dual focus on both content and delivery is necessary. Methods for improving the delivery are outlined through the case study. A case is made for a dual consideration, with a cyclic swing between a focus on pedagogical issues and expert-input to

ensure effective content is included. This approach avoids over-emphasis on either focus, hopefully leading to a reasonable trade-off between approaches and an improved outcome for students.

The findings of this research are limited in two key ways. The first is that the results and findings are mainly derived from the lecturers' perceptions of reality. There was little objective data collected from the students as part of this research and some available data were unable to be used due to ethical restrictions. This presents an important avenue for further enhancing the rigor of the study going forward. Future research would frame the investigation differently and emphasise the development of a survey tool to gauge whether or not such approaches improve student outcomes in the face of diversity in the classes. However, the cyclic framework can be seen as generalisable to classes beyond those in operations and supply chain management; the generality of the framework should encompass similar challenges faced by other classes, departments or faculties. In this way it may provide a valuable foundation for a program of continued improvement in educational programme structure and contents.

REFERENCES

- Buckridge, M., & Guest, R. (2007). A conversation about pedagogical responses to increased diversity in university classrooms. *Higher Education Research & Development*, 26(2), 133 - 146.
- De Vita, G., & Case, P. (2003). Rethinking the internationalisation agenda in UK higher education. *Journal of Further and Higher Education*, 27(4), 383 - 398.
- Fitzsimmons, J. A., & Fitzsimmons, M. J. (2008). *Service management: Operations, strategy, information technology*. New York: McGraw-Hill/Irwin.
- Gurin, P., Dey, E., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, 72(3), 330-367.
- Heineke, J. N., & Meile, L. C. (1995). *Games and exercises for operations management: Hands-on learning activities for basic concepts and tools*. Englewood Cliffs, N.J.: Prentice Hall.
- Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory Into Practice*, 41(4), 212.
- Leask, B. (2001). Bridging the Gap: Internationalizing University Curricula. *Journal of Studies in International Education*, 5(2), 100-115.
- Lee, H. L., Padmanabhan, V., & Wang, S. (1997). The bullwhip effect in supply chains. *Sloan Management Review*, 38(3), 93-102.
- Martin, Y. M., & Karmel, T. (2002). *Expansion in higher education during the 1990s: Effects on access and student quality*. Canberra: Department of Education, Science and Training.
- Maruyama, G., Moreno, J. F., Gudeman, R. H., & Marin, P. (2000). *Does diversity make a difference? Three research studies on diversity in college classrooms*. Washington, DC: American Council on Education and American Association of University Professors.
- Page, J. (2004). *Implementing lean manufacturing techniques: Making your system lean and living with it*. Cincinnati: Hanser Gardner Publications.
- Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93(3), 223-231.
- Revell, A., & Wainwright, E. (2009). What makes lectures 'unmissable'? Insights into teaching excellence and active learning. *Journal of Geography in Higher Education*, 33(2), 209-223.
- Terenzini, P. T., Cabrera, A. F., Colbeck, C. L., Bjorklund, S. A., & Parente, J. M. (2001). Racial and Ethnic Diversity in the Classroom: Does It Promote Student Learning? *The Journal of Higher Education*, 72(5), 509-531.
- Volet, S. E., & Ang, G. (1998). Culturally Mixed Groups on International Campuses: an Opportunity for Inter-cultural Learning. *Higher Education Research & Development*, 17(1), 5 - 23.
- Walton, M. (1986). *The Deming management method*. New York, NY: Perigee.
- Zhang, C., Sillitoe, J., & Webb, J. (1999). *Valuing cultural diversity in student learning: the academic adjustment experiences of international Chinese students*. Paper presented at the HERDSA Annual International Conference.

A PEDAGOGICAL FRAMEWORK FOR SUCCEEDING IN A CROSS-DISCIPLINARY PHD

Hussein A. Abbass* and Eleni Petraki**

**School of Engineering and Information Technology - UNSW@ADFA, Canberra, ACT, Australia.*

***Faculty of Arts and Design - University of Canberra, Bruce, ACT, Australia.*

ABSTRACT

In the Australian context, a Doctor of Philosophy (PhD) degree is expected to take 3 years and no more than 4 years for a full-time student. A number of universities adopt a confirmation process, whereby students get examined for their capacity to undertake their proposed topic. The confirmation process should be done and completed within 12-18 months of commencement, and this time varies from one academic provider to another. In this paper, we propose a framework for managing cross-disciplinary PhD theses. We focus the discussion on the implication of the cross-disciplinary nature on the progression of the research. We draw on our joint experience in supervising to completion a dozen PhD students and a dozen Master by research students, drawing example from the area of Complex Systems – an inter-disciplinary area setting on the edge of Information Technology, Life Sciences and Engineering. Moreover, we discuss the confirmation process, from a curriculum design lens and its own learning outcomes.

KEYWORDS

Doctor of Philosophy, Confirmation Process, Research Students Candidature, Pedagogy.

1. INTRODUCTION

The pedagogy process of a PhD has been the focal point for many studies. Best explained by Creedy (2007), “starting a PhD thesis is typically a leap in the dark”. Gardner (2003) reviewed previous studies that looked at the concept of “success” in higher degree research education. She found that the word “success” was used to mean a variety of things from retention (ie persistence from one year to another reflected by a continuing enrolment) to degree completion. She undertook a deeper analysis of the word “success” in higher degree education to define what it means and what constitutes success. The study spanned across 38 faculty members from seven different disciplines: English, communication, psychology, mathematics, oceanography, electrical and computer engineering, and computer science. The study asserted the non-monolithic nature of the doctoral education experience and the cultural differences among different disciplines. It also demonstrated the influence of the disciplinary culture on attrition and completion. In particular, within the computer science and engineering disciplines, it was found that completion rate is very low due to the competition with the job market and the nature of students enrolled at these departments covered by the study (ie mainly students from India and Asia who need to work on top of their studies to fund themselves). The study of Gardner (2003) is of a particular relevance to this paper. In a cross-disciplinary PhD, the student becomes embodied in multiple research cultures. Crossing the boundaries of these different research areas exposes the student to multi-mode of encounters and experiences as diverse as those discussed by Gardner (2003). Gatfield (2005) questioned the assumption that supervisors know what makes a supervision process successful. He identified four dimensions categorizing factors related to PhD completion: pastoral care, material, financial and technical. The first dimension has a number of factors equal to the total number of factors of the other three combined. It included factors such as proactive supervisor, sensitivity to candidate needs, mentoring, guidance, to name a few.

2. THE CONTEXT

The higher-education research culture at UNSW@ADFA – in particular the School of Engineering and Information Technology - is characterized by a diverse set of international students. A typical PhD student at UNSW@ADFA would normally be an international overseas student. This is because all under-graduate students are Australian military students who do not normally continue to higher education research degrees (some do so later on in their career but mostly as part-time studies). The majority of the international students come from Bangladesh, China, Egypt, India, and Malaysia, with a few from Europe. This diversity of backgrounds and ethnicity necessitates providing students with proper training on diversity issues (Bowman, 2010). A typical background in the area of Information Technology would be a student with a Bachelor degree in Computer Science or Electrical Engineering who did a Master degree – say in data mining, knowledge management or image processing. These students are very hard workers, smart, and with a very high GPA to get a scholarship at UNSW@ADFA. Nevertheless, they normally lack out-of-the-box thinking, independence, and cross-disciplinary knowledge. Some have fear of mathematics, while others have fear of programming.

In a cross-disciplinary PhD, the student is normally expected to be familiar with some basic knowledge across a number of disciplines. For example, a thesis on designing a simulation environment for wargaming would require from the student to understand wargaming in military science, game theory in mathematics, modeling and simulation in systems and operations research, and computational methods in computer science. The research topic mentioned above would create a real challenge for many of these students.

Many Australian universities, including UNSW, use a process known as the confirmation process. At UNSW@ADFA, a PhD student is expected to pass the confirmation process within the first 15 months of first enrolment for a full-time PhD student. Normally students do their confirmation after 9 months. This is to allow them time if they fail to repeat it again within the 15 months timeframe. If the student fails to pass, the degree is downgraded to a master by research or the enrolment terminates based on the student's performance. The objective of the confirmation process is to assess the student capacity to work on his/her proposed PhD topic. The process consists of three components: (1) a written report of 10 pages presenting a comprehensive and succinct proposal with a concise and convincing literature review, research topic description, preliminary results, research plan and references; (2) a 20-minute research seminar given to a panel of 3 co-chaired by a Professor and the research coordinator, allowing none of the supervisory panel members to be a member of the confirmation panel; and (3) an interview with the confirmation panel similar to a viva, whereby the student gets to answer a series of questions on his/her understanding of the topic and the process including questions related to ethics, resources, time-management and risk assessment.

A traditional view on how to conduct a PhD would require these students to start with a literature review so that during their confirmation, they can defend the novelty and originality of their chosen topic. It is no surprise that many students do exactly that, which enables them to write the literature review component of the confirmation report. However, a typical question that faces many of them is: "where should we start our literature review"? Not having studied game theory before would mean extensive book readings and an endless list of possible papers to look at. The lack of awareness of military science – and worse, the pre-perceived and normally wrong understanding of concepts such as wargaming- would add to the package of the endless list of readings. While they would have studied some simulation and computational methods in their under-graduate degrees, mostly they only covered basics, without sufficient in-depth understanding in these topics required to do proper modeling and simulation PhD.

We are not arguing here that the blame falls on the under-graduate or master curriculums for overseas universities. On the contrary, these curriculums are designed to match the needs for their local markets. Within India for example, these curriculums generated a massive number of some of the best IT professionals in the world. However, for a cross-disciplinary PhD, these curriculums, cultural influences, and psycho-linguistic attributes collectively create a serious gap between their current state of knowledge at the commencement of the PhD and that needed to undertake a research thesis in a cross-disciplinary topic.

In addition to the factors related to students mentioned above, the academic supervisors are faced with another dilemma: the system requires them to complete these students on-time. Even worse than that, the PhD scholarship for many of these students is only for 3 years, so supervisors carry the burden to manage the thesis to completion within the minimum timeframe. This pressure sits mostly on the principal supervisor's shoulder, getting assessed in his/her annual job review with the head of school on completion rate of PhD

students. We then add to the story that UNSW is one of the GO8 universities in Australia characterized by being research intensive and providing graduates with the best quality in the country. Therefore, the objective is not to get PhD students to completion alone, but to get them to completion with the highest possible quality in the world.

Given the above, one would ask how cross-disciplinary topics can survive such constraints. In the rest of this paper, we will describe an approach that so far was successful in graduating some of the best quality cross-disciplinary PhD students in complex systems in Australia. The approach may seem radical in places, but every step will be justified logically to answer the how and why.

3. THE APPROACH

The following three sub-sections are structured to set the scene, describe the general structure and journey of the cross-disciplinary PhD, and the approach to prepare the students for the confirmation process.

3.1 Setting the Scene

There is a large gap in the job market and many opportunities for cross-disciplinary PhD graduates [M. Basil and D.Basil, 2005, Blackmore1 and Nesbitt, 2008]. Learning in isolation was suitable in the past to create what we call “experts”. A PhD thesis was expected to be so narrow with so much depth in one topic, especially in what we will call mathematically oriented fields such as computer science and complex systems. Out of the larger area of solving systems of equations, a branch of this area is solving systems of linear equations, a sub-branch is designing computational methods that can handle what is known as ill-structured matrices – which cause problems when solving linear equations – and a PhD student may choose to do his/her PhD on designing algorithms to detect quickly if a matrix is ill-structured. That has been the level of depth, notwithstanding narrow focus, required in a PhD.

Nowadays, there is a tipping point in Science in general. We need PhD graduates in bioinformatics [Zatz, 2002], who combine knowledge of mathematics and computer science to solve biological problems. We see the need for computational psychologists or computational social scientists [Wall and Shankar, 2008], with knowledge in modeling, simulation, network analysis, social science and psychology to model human and group behaviors. The need to graduate PhD students in these domains is climbing, the time and budget resources available to both students and supervisors are building up, the competitiveness in the market is rising, and these new fields of science are evolving at a fast pace.

The picture painted above necessitates certain indicators that should be satisfied in the PhD students. Unfortunately, if any of these indicators are compromised, the likelihood for the success of the approach discussed below diminishes very quickly. The first indicator is “quality”. Students are expected to be of the highest quality as demonstrated by their achievements in their undergraduate and master degrees. A minimum GPA of 3.8 would be expected. While the use of GPA does not paint a complete picture of the student’s ability to conduct a cross-disciplinary PhD, it should be seen here as one of the indicators we use and not as the indicator to be used. The second indicator is “hard work”. The time constraint requires students to work between 12-15 hours per day on their PhD topic. This is seen by some Australian views as inappropriate as students need to have a life outside the PhD, while it has been demonstrated that it is an essential attribute for quality PhD (Kearns, Gardiner, and Marshall, 2010). We will need to challenge this concept here. The time constraint imposed by the system, the need for quality, the lack of appropriate background in cross-disciplinary areas, and the pressure to complete on time collectively make it impossible for the student to complete on time without devoting this amount of time to their PhD. Many students would collapse quickly if they continuously work that much. Hence, the third indicator is “positive attitude towards education”. Students need to believe in education, its importance and true value to their future. This positive attitude to education is important to maintain their performance at a constant pace.

The above scene carries attributes of masochism. In order to require students to work that much at a constant pace for 3 years, a very careful design for the conduct of the PhD and the process as a whole is needed. The majority of these students require training to build up their capacity for critical thinking. In many cases, training on how to avoid plagiarism and disassociating some of their cultural beliefs and trends from the concept of copying text from other papers is required. For example, some Asian students believe to

be an expert, one needs to copy an expert. Re-educating them that the word “copy” does not mean copying text, but copying personal attributes such as being inspirational, working hard, working smart, and to name a few, becomes necessary to avoid unintentional plagiarism. Language support and applying diversity and equity principles are vital issues as part of the training process to shape up, build up and maintain the students’ confidence. Integrating their career development planning and the training process adds to the complexity of the process.

3.2 The Cross-Disciplinary PhD Process

The previous section motivated the need for a carefully designed process for the conduct of a cross-disciplinary PhD. In this section, we will describe a slightly radical approach that has been used successfully in supervising to completion 8 cross-disciplinary PhD students. The essence of the approach is described in Table 1.

Table 1. The philosophy of the PhD journey for cross-disciplinary topics from the supervisor’s perspective.

Year	Philosophy	Examples of Processes
First Year	Learning: I need to teach you	Reproduce one of my papers
Second Year	Critical Thinking: We should argue with each other	Brain storm ideas, constructive criticism, swim in the ocean and give it a go attitudes
Third Year	Innovation: You should teach me	What is new here? Reality checks, presentations, demonstrators

The above table describes the philosophy of the process. The first year of the PhD process is seen to be educational. However, the constraints do not allow time to ask students to go and read on their own. As we mentioned earlier, these students may not even know which book to start with, how much is sufficient, and whether or not they are acquiring knowledge needed for their PhD or simply good to know knowledge. To put things in context, the student is given a representative paper from the field. Mostly this can be one of the principal supervisor’s published research papers or a paper that the supervisor is very familiar with. The student is asked to replicate everything in this paper. With that we mean:

1. The student is required to read the literature review section in the paper and all papers in the bibliography. Normally, the student is faced with considerable difficulties here. A substantial number of new concepts are introduced in these papers that the student was not exposed to them before. However, this provides a guided approach to seek knowledge from textbooks and other sources. The student may see a term such as “Nash equilibrium”, flagging that he/she needs to visit an introductory text on Game Theory. He/she will not understand Nash equilibrium by simply reading the definition from the book. Instead, and most likely, they will need to read the first two chapters to understand the context and Nash equilibrium. In doing so, the student may continue reading a couple of extra chapters to learn more about the topic or simply stop. The most important issue here is that, the student has a goal that is once satisfied, the extra bit is consciously perceived as “extra”. In short, the student knows when to “stop” and move to a different topic.

2. The student is asked to replicate the experiments and results in the paper. This phase has its own difficulties. From our experience, we did not encounter a student who was able to replicate the results the first time around. Normally it takes 4-6 rounds before they are able to replicate the results. The first time they read the methodology, their eyes skip tiny statements that carry a lot of meaning and depth, and that are vital to the correct implementation of the methodology. As such, the results come out substantially different and even if some numbers match, the analysis does not. Some students experienced a state of disbelief, where they accused the author to have fabricated some of the results. The supervisor should maintain a level of patience and leave a small door open for this possibility. In our experience, obtaining wrong results sometimes created ideas on how to improve the work further; once the student settles down and understand the topic.

3. The last phase in replicating a paper is the fun part. We tell the student the following: “there is no such thing as a complete piece of work. Imagine that you were given this paper for review and you were told explicitly that this paper was rejected by three other reviews, so you must find out reasons why they would have rejected this paper. You should not allow in your argument for the possibility that the paper is acceptable, you should have a comprehensive set of reasons on why it should be rejected”. Students normally start with some weak reasons, such as I did not like this and that. The supervisor needs to explain to them that

it is not a matter of “like” and “do not like”, it needs to be a critical assessment with a proper scientific argument. Providing students with some examples on how to critically criticize a paper is useful here. Supervisors need to understand the thin line between “spoon feeding” and “supervising” as well as the thin line between “helping” and “independence”.

The philosophy of the first year is centered on the concept of “I will teach you”, whereby the supervisor is teaching the student about the new area of research and the cross-disciplinarily nature of the topic. The student is expected to replicate the paper within 4-6 months maximum. The student is then asked to give a seminar on that paper, playing the role of the author, whereby others will criticize the work and the student needs to defend it. The next stage is then divided into two parallel phases, an initial reading phase for forming a proper literature review and an experimental phase whereby the student is asked to try some of the ideas he/she had on how to improve the paper they just replicated. This stage involves other readings as discussed between the student and the supervisors.

The second year is when the student embarks on finding their own way to identify innovative ideas. The supervisor plays the role of the devil’s advocate, balancing critical thinking while maintaining an eye on students’ psychology. Supervisors need to be educated on student psychology; as the lack of such training can escalate quickly to an unsuccessful journey for both. Some students will be deeply disappointed when the supervisor criticizes or even rejects their first idea, while other students are more robust and can take the criticism and continue with it. During this stage, the supervisor needs to maintain a close eye on the student from a psychological perspective. Normally, students have multiple feelings during this stage. Some students after reading too much they fear that everything has been done in the literature. Some students every time they come up with a new idea, they go to search and find others worked on it before. After a few attempts, they become disappointed. Some students read and see everything to be trivial, simple to understand, and easy to be done. These symptoms normally indicate a lack of in-depth understanding of the topic. Replicating the paper during the first year should have overcome this issue, but sometimes it does not. Students can face many more symptoms of instability during this stage. Many of these symptoms are common for any PhD student and not just for cross-disciplinary PhD students. However, the cross-disciplinarily nature of a PhD raises more frustration, confusion and challenges. The commonly known problem as “Mid PhD Crisis”, normally occurs in the second year. The key issue to emphasize here, PhD management and supervision during that year requires from the supervisor the ability to manage the student psychologically, not only scientifically. The end of the second year is normally expected to be a proof-of-concept for the novel idea they came up with.

The third year is when many students embark on maturing their ideas. In a traditional PhD thesis, this is normally considered to be late. It is late if a student by the third year does not have a mature contribution. We normally encourage students to publish a couple of journal papers before they submit their thesis. If the maturity of the topic is left to the third year, the time to get a journal paper accepted becomes very limited. However, this is not as horrific as it sounds. First, the candidates familiarized themselves with the writing style and cross-disciplinary culture during the exercise they undertook in year 1. Second, by the end of the second year, they built their ability to work independently, think critically, and demonstrated one or two solid novel ideas for the conduct of their research. Third, they are now equipped with the tools and methodologies to conduct high quality research. Fourth, they would have published a couple of conference papers by that time, therefore, the write-up of the journal papers does not start from scratch. In short, they can “hit the ground running”. During the first six months of the third year, they are expected to have submitted two journal papers. Assuming everything is on time and running smoothly as described above, the candidate is well on track with the thesis. The last six months are used as a buffer for things to go slightly out of track and for the thesis write-up.

It is important to mention that the above process should not be misunderstood and it should not be perceived that we are implying that a contribution for a PhD takes 6 months to mature. This is a very naïve view of the PhD process. Scrutinizing the process in detail, one can easily see that the contribution for the PhD commenced in the first year. The first paper the candidate takes to replicate during that time plays a vital role in shaping up their PhD thesis. It shapes up their mental picture of the type of contributions expected in their prospective field of study. It provides sound ideas to build on and the required training to learn the methodologies and tools required. In fact, the contribution is normally well-defined by the end of the first year. However, it is too early to conclude at that time the discovery process for a contribution. The candidate needs to go through the critical thinking and the literature survey to refine their contribution. The second year matures the contribution subconsciously. The candidate learns to defend it, undertakes analysis to address the

supervisor's critical assessment, performs more experiments to substantiate the argument, and most importantly spends the time reflecting on the idea to build their own argument to defend their ideas. Nevertheless, we need to appreciate that we need to allow the candidate time to maintain ownership of the ideas. This is the time needed to move the contribution from the sub-conscious to the conscious, from being an idea to being an achievement, and from being a conference paper to become a series of mature journal papers.

3.3 Preparing Students for the Confirmation

The previous section covered partly the confirmation process when discussing the philosophy of the first year of the PhD process. This section will highlight some specific issues for the confirmation process. These issues are summarized below:

- **The Pedagogy of Confirmation:** On the one extreme, the confirmation process can turn into a "ticking boxes" process. On the other extreme, it can turn into the "life or death" process. Neither of these two extremes represents a healthy pedagogical construct. Unfortunately, in places, the confirmation process is seen as an administrative process with a load burden on staff. This is when the process fails to deliver its learning outcomes and it then becomes an inhibitor to students rather than an enabler. The confirmation process is not an exam, either. The aims and objectives of the confirmation process need to be made clear to the students. Its aim is not to test students' knowledge in a specific domain, but to test their "capacity" to acquire and comprehend knowledge, and innovate in the domain of their PhD. It also aims at familiarizing students with the process and understanding the different management skills required to complete the thesis including skills to assess risk (lack of resources and time, experimental risks, etc). This process, similar to the degree, has its own learning outcomes including the ability to time manage their thesis, the ethical implications of their research, to name a few.

- **The Service Model of Confirmation:** The service model [Chiarelott, 2006] in curriculum design is a good model to use here. According to this model, students need to be acquainted with knowledge and understanding on the social and environmental implications of the curriculum. Research should not be done in a vacuum. Questions on the social, environmental, economic, ethical, and political implications of the research represent an integral part of the confirmation process, whereby students need to relate their topic to the wider society. A framework such as PEST (Political, Environmental, Social and Technological) could be used to guide the structure of the questions during the confirmation process. Some of these dimensions are only relevant in some topics. For example, the political dimension can be relevant for a PhD on computational models for wargaming, while it is less relevant for a PhD on computational models for cancer simulation. The latter topic may have more policy-related implications than necessarily political ones. Overall, students need to learn to communicate their findings to the wider community (Adkins, 2008).

- **The Psychology of Confirmation:** While preparing and waiting for the confirmation process, students are normally in a state of fear. They see the confirmation process as an exam that they need to pass. Some students are on international scholarships, if they fail and go back to their home country, they will be feeling with shame, disappointment, and not to mention the financial burden to pay back their government the money they spent. Different personalities exhibit different attitude towards the confirmation process. In particular, the level of anxiety varies. It is for supervisors to understand the role they play to manage the students during that time. Some students can take it to the extreme of thinking about what will happen if they fail, waste a huge amount of time on this thinking rather than on studying and working. It is the supervisor's role to manage the students during this stage. A balance needs to be maintained between ensuring that the students take the process seriously and shaping up students' self-confidence. The supervisor needs to train students on how to work under pressure and maintain a healthy mental life. It is also important that the supervisor explains to the students the importance of sleeping properly during this stage and the role of "healthy" sleeping attitude in enhancing their memory, focus and ability to work.

4. CONCLUSION

Undertaking a PhD in a cross-disciplinary area is a challenging endeavor, especially when some international under-graduate degrees prepare students for specialization in one discipline rather than multiple disciplines. In this paper, we proposed a model that has been adopted successfully during the supervision of 8 PhD students in cross-disciplinary domains. We presented the philosophy of each of the three years of the PhD and outlined skills developed during each year. We also discussed the confirmation process and highlighted the pedagogy of the confirmation, a curriculum design based on the service model to inspire the confirmation process, and the psychological experience encountered by students in preparation for the confirmation process.

The model presented in this paper should not be adopted as it is by supervisors. It should be seen more as some guiding principles than a “single model fits all” attitude. The model should not be separated from the experience and journey supervisors go through in their career. The psychological side of the PhD journey comes with its own set of cautious elements. The Human-Human interface in PhD supervision comes with its own complexity, with a myriad of non-linear dynamics of interactions that can push the student down the cliff mentally and/or socially. As such, supervisors and students alike need to adapt this model to their own circumstances and the nature of their own research topic.

REFERENCES

- B. Adkins, 2009. PhD pedagogy and the changing knowledge landscapes of universities. *Higher Education Research & Development*. Vol. 28, No. 2, pp 165 – 177.
- B. Basil and D. Basil. 2005. The marketing market: A study of PhD supply, demand, hiring institutions, and job candidates. *Journal of Business Research*, Vol. 59, No.4, pp 516-523.
- K. L. Blackmore and K. V. Nesbitt. 2008. Identifying Risks for Cross-Disciplinary Higher Degree Research Students. In Simon and M. Hamilton, (Eds) *Tenth Australasian Computing Education Conference (ACE2008)*, Wollongong. Conferences in Research and Practice in Information Technology (CRPIT), Vol. 78. crpit.com/confpapers/CRPITV78Blackmore.pdf
- N. A. Bowman, 2010. Disequilibrium and Resolution: The Nonlinear Effects of Diversity Courses on Well-Being and Orientations toward Diversity. *The Review of Higher Education*. Vol. 33, No. 4.
- C. Bruce and J. Brooker, 2009. Why Consider a PhD? *Incite*. Vol. 30, No. 8, pp 33.
- L. Chiarelott. 2006. Curriculum in Context. Belmont, CA: Thompson Education.
- J. Creedy, 2007. *A PhD thesis without tears*. Parkville Vic: Dept of Economics, University of Melbourne.
- S. K. Gardner, 2009. Conceptualizing Success in Doctoral Education: Perspectives of Faculty in Seven Disciplines. *The Review of Higher Education*, Vol. 32, No. 3.
- T. Gatfield, 2005. An investigation into PhD supervisory management styles: development of a dynamic conceptual model and its managerial implications. *Journal of Higher Education Policy and Management*. Vol. 27, No. 3, pp 311-325.
- H. Kearns, M. Gardiner and K. Marshall, 2008. Innovation in PhD completion : the hardy shall succeed (and be happy!). *Higher Education Research and Development*. Vol. 27, No. 1, pp 77-89.
- C. Manathungaa, R. Pittb and C. Critchleyc, 2009. Graduate attribute development and employment outcomes: tracking PhD graduates. *Assessment & Evaluation in Higher Education*. Vol. 34, No. 1, pp 91–103.
- D. Sebalj and A. Holbrook, 2006, Administering PhD studies. *Conference of the Australian Association for Research in Education*. Adelaide.
- T. Vilkinas, 2005, The Supervisor's Role as Manager of the PhD Journey. In: Green, Pam (Editor). *Supervising Postgraduate Research: Contexts and Processes, Theories and Practices*. Melbourne: RMIT University Press pp 163-177.
- M.H. Ward and S. West, 2008. Blogging PhD Candidature: Revealing the Pedagogy. *International Journal of Emerging Technologies and Society*. Vol. 6, No. 1, pp 60 – 71.
- S. Wall and I. Shankar. 2008. Adventures in transdisciplinary learning *Studies in Higher Education*. Vol. 33, No. 5, pp 551–565.
- M. Zatz. 2002. Bioinformatics training in the USA. *Briefings in Bioinformatics*. Vol 3. No 4, pp 353–360.

TEACHING BUSINESS ETHICS TO POSTGRADUATES DOES IT MAKE A DIFFERENCE? AN AUSTRALIAN VIEWPOINT

Theodora Issa and David Pick

Curtin University - School of Management, Curtin University, Bentley, WA, Australia

ABSTRACT

There is a growing trend to increase business schools' attention to teach business ethics, nonetheless, scholars continue to be at odds as to whether teaching business ethics, especially at the post graduate level might help or even make a difference. Deriving from a quantitative core component with a qualitative supplementary component, the aim of this paper is to provide empirical evidence from Australia that teaching business ethics (BE567) to post graduate students makes a difference and in the long term generates a shift in students' mind sets. Both qualitative and quantitative data were collected through different methods including questions at the beginning of the semester, reflection at the end of the semester with an informal feedback provided during the semester, which provide evidence of a shift in students' mind sets. Nonetheless, this paper will derive from the anonymous teaching and unit evaluation system in use by Curtin University 'eVALUate' from 162 post graduate students of business ethics over five semesters in two different campuses. The analysis of this data suggests that there is an appreciation of the topic of business ethics at the postgraduate level making a difference and ultimately bringing in a shift in students' mind sets. Through their evaluations of the unit and teaching, students highlighted the importance of such a unit, and how learning about issues of ethical nature is of importance to them personally and to businesses in general, which provides an assurance that the unit outcomes have been achieved in transforming students mind sets.

KEYWORDS

Teaching and learning, Business Ethics, post graduate, Australia, making a difference, shift of students' mind sets,

1. INTRODUCTION

Well before the current Global Financial Crisis (GFC), as we witnessed the unprecedented misconduct and crime that pointed to new levels of selfishness, greed and dishonesty in business. Investigations in the corporate world were fierce; the policy makers rushed to change the rules to ensure more regulations are in place to safeguard the stakeholders from other similar events. Contemplating such drastic changes, Swanson and Frederick (2003) argued that business schools have not yet been investigated as possibly unwitting accomplices to corporate crimes. Swanson and Frederick (2003) conclude that this comes especially as the business schools graduates may reflect an approach to business education that elevates narrow self-interest above broader values of community and corporate citizenship.

In an attempt to find solutions to the problems facing the business schools, Swanson et al., (2007) propose solutions for business schools that moves them forward to become an integral part of the recovery. They suggest an outline that can be adopted by business schools that highlights the need to teach students narratives from the real world, and incorporate ethics in business and business in ethics. However, Milton-Smith (1997) concludes that while several ethic centres and prominent individual ethicists have introduced innovative programs and given ethical issues greater prominence in the media, narrow vocationalism still takes precedence over personal values in the business and management curriculum. In response to these issues, the business ethics curriculum at the Curtin University Business School has been reviewed to develop and facilitate a course (unit) that aims to equip students to deal ethically with the challenging, demanding and ever-changing business environment. This paper provides an Australian viewpoint on the impact of teaching business ethics at the postgraduate level, deriving from data collected through the Curtin University student evaluation system 'eVALUate'.

2. LITERATURE REVIEW

Teaching business ethics continues to be a subject of debate amongst scholars as in the academic and business circles doubts are raised as to whether teaching such a unit would achieve any change in students' attitude towards ethical issues and ultimately a shift in students' mind sets, which underestimates the unit, raising objections to teaching business ethics in business schools. McDonald and Donleavy (1995) argue that the evidence to date suggests that courses can be a means of achieving ethical awareness and sensitivity in students although it should be recognized that significant objections to the teaching of business ethics do exist and greatly inhibit their successful introduction. McDonald and Donleavy conclude that there is a reason to overcome these objections if ethical programs are to continue in the future.

In the literature there are arguments that teaching business ethics is designed only for those who have interest in this topic area (Michalos, 1997). Cowton and Macfarlane (2002) posit that recent research provides a welcome indication that, although it is still on somewhat limited scale, the teaching of business ethics is on the increase in the UK. Cowton and Cummins (2003) contend that the challenge lies in identifying suitably qualified lecturers to teach business ethics. Cowton and Cummins (2003) also argue that although universities might be expected to aim to produce well-rounded graduates, there has been a perception that business schools have tended to take a narrow view of business studies, paying little attention to ethical issues. However, recently there have been some signs of change. Cowton and Cummins provide empirical evidence that change is witnessed stating that although provision of business ethics teaching is still on a limited scale, signs of growth are evident, with a significant proportion of institutions offering at least some business ethics teaching, either within a 'mainstream' subject or as a separate module. There also is a debate amongst scholars as to whether teaching business ethics to students would even make a difference. Sims (2004) argues that building an effective classroom learning environment requires business ethics teachers to pay particular attention to creating a classroom environment that values the ideas others have to offer through allowing and creating new kinds of conversation in their business ethics teaching efforts. Debate does not only focus on how to teach business ethics, but goes beyond to touch on the role of business schools in teaching business ethics, and what business school academics teach about management theories and the like that might encourage indecisiveness or unethical behaviour. In this respect Donaldson (2008) argues that education in ethical philosophy can lead managers to be indecisive, skeptical or to rationalize poor conduct. The ethics of academics become salient and lapses in them undercut their claims to authority. Currently, Langlois and Lapointe (2010) argue that university programs and curricula in educational administration and leadership became increasingly influenced by ethics, while in organizations ethics seem to be attached to mission, values, codes of conduct or ethics committees. Langlois and Lapointe (2010) conclude that it is no longer limited to individuals but to organizational change, change in structure and culture, with terms surfacing such as ethical governance, ethical organization and ethical school.

Sullivan (2010) argues that a decade of corporate scandals has highlighted a lack of ethical decision making skills among business leaders. Reasons for this deficiency vary from an absence of ethical teaching in the home to a failure of corporate culture. In an age where complexity and uncertainty are the rule rather than the exception, we, as tertiary educators, are charged with great responsibilities towards our communities and society. These responsibilities come in two fold: (a) support the corporate world in time of crisis, and, (b) prepare our students (the leaders of the future), for the aftermath of the Global Financial Crisis, or as Middleton and Porter (2009) posit, prepare students for the next downturn. This simply means that we, as part of the society, are faced with a set of 'adaptive challenges' rather than what we used to be faced with earlier 'technical problems'. In this respect, Heifetz, Kania and Kramer (2009) identify the characteristics of these challenges: (1) challenge is complex, (2) answers are not known, (3) implementation requires learning, and, (4) stakeholders must create and implement the solution themselves.

Galbraith and Webb (2010) depict a depressing picture as a result of the devastation of the global economy contending that there is a serious ethical and moral decline, as evidenced by corporate scandals, accounting fraud, human trafficking and the rise of cheating and plagiarism in education systems amongst other scandals that touched several entities in different parts of the world. The lines between right and wrong have been blurred, relegating moral and ethical boundaries to outdated standards. In this respect, Langlois and Lapointe (2010) warn of simplifying issues by categorizing them as simply right or wrong, the reality is far more complex than that. Further, Galbraith and Webb (2010) contend that university students as future leaders may need more soft skills like empathy, self-knowledge and sound judgment, blended with technical

and quantitative skills. The lecturers teaching this unit at Curtin University were led by the saying of Richard Highfield (Boone, 2004 p. 8) 'students should not be only looking for degree as it is a standard stamp of approval, and should not be only there to absorb what they are taught; to the contrary, students should use the tools provided to face the critical audience at the business level, and to be always proud to show their character, and as the opportunity rose'. This can only be achieved, if those students became aware of what business ethics entails and make the decision to act ethically.

3. METHODOLOGY

This analysis draws on data collected over the period 2007 to 2010 from the Curtin University 'e-evaluate' student feedback system. According to Oliver et al. (2008) 'evaluate' prompts students to reflect on what helps their achievement of unit learning outcomes, and to report their levels of motivation, engagement and overall satisfaction with a semester-long course or unit of study.

3.1 Sample and Analysis

The number of students in this unit during the five semesters reported on came to 162 of which 28 were on Curtin's offshore campuses. From the 162 some 83 students responded to the anonymous evaluation system providing an overall response rate of 51.2% which is higher than the average required by the University of 35%. The periods covered differ in a way that the material taught in semester 1, 2007 was different than the material taught in the other four semesters. A change in the curriculum was affected to incorporate more case studies, and the introduction of a textbook. In addition to this method of data collection, students were required during their first seminar, through 'ice-breaker' document to provide details about their knowledge of ethics, and an ethical dilemma amongst other questions that would allow the unit controller and lecturer to generate a students' profile assessing students' knowledge of business ethics. Further, students were required to provide informal feedback on the fourth week of the semester, and a written reflection in the final seminar on what they learnt during the semester. The ice-breaker and the reflection provide pointers to a shift in students' mind set towards the topic of business ethics. However, due to the limitations of this paper, only the 'eVALUate' results will be discussed. Nonetheless it is worthwhile to note here that students moved from being totally unaware of ethical issues or ethical dilemmas at the beginning of the semester into providing a well thought off dilemmas with solutions in their final reflection at their final seminar of the semester.

4. RESULTS AND DISCUSSION

In the unit outline for this postgraduate business ethics unit, students are advised that on successful completion of this unit they will be able to: (1) demonstrate awareness and sensitivity to the importance of the ethical components inherent in management decision-making, (2) apply conceptual tools and frameworks for the critical analysis of business decision-making practices and policies, (3) apply the frameworks, perspectives and skills of critical analysis to contemporary business issues, and, (4) translate the theories, concepts and analytical techniques learned into practice.

This unit is hands-on and students are required to be engaged through being able to discuss and critically analyze case studies, and current affairs in light of ethical theories taught in this unit. Students examine ethical issues that arise within business management and they ask questions and discuss, in a critical way, ethical and moral dilemmas in business contexts. Opportunities are given to explore a wide range of contemporary case materials in which managers try to reconcile the many demands from a wide range of stakeholders each with their own perspectives. The unit aims to assist students to acquire and develop critical thinking skills required for the successful practice of business within the framework of societal values. These skills include the ability to perceive the ethical implications of a situation, engage in sound moral reasoning and develop practical problem solving strategies. It is delivered over twelve weeks in the form of a 3-hour weekly seminar. Starting with introduction to business ethics, the unit moves to discuss ethical issues in

business, ethical theories and how to use them. Acknowledging that individuals within organizations have a major role to play, then the unit moves to cover personal values, and individual responses to ethical issues including whistleblowing. Thereafter, the unit moves to tackle issues relating to businesses responses to ethical issues discussing sustainability, ethical codes and standards, international and global context of business ethics, concluding with moral leadership.

It is our belief that students are the major stakeholders in the teaching and learning exercise, thus, usually we seek their informal feedback in week 4. In this informal feedback we seek the students' opinion on what works for them, what does not work, and what they need us to commence doing, providing them with a space to provide any additional comments or information relating to their experience in the course. We usually share the outcome of this informal feedback with students explaining the reasons behind what is being done, how things can be improved and by when. Thus, students will have the chance to provide their feedback on the unit and teaching three times. (1) an informal feedback that is collected during the first weeks of the semester, (2) end of semester reflection during the last seminar, and, (3) the anonymous Curtin University student feedback system 'eVALUate'. The data discussed in this paper is derived from the 'eVALUate'.

4.1 Teaching Business Ethics

From these results the following quantitative and qualitative data:

Table 1. Average 'eVALUate' quantitative items – 2007 - 2010

eVALUate quantitative items - UNIT – Business Ethics 'postgraduate' (5 semesters)	Average
The learning experiences in this unit help me to achieve the learning outcomes.	87%
The learning resources in this unit help me to achieve the learning outcomes.	82%
The quality of teaching in this unit helps me to achieve the learning outcomes.	89%
I am motivated to achieve the learning outcomes in this unit.	87%
I make best use of the learning experiences in this unit.	93%
I think about how I can learn more effectively in this unit.	86%
Overall, I am satisfied with this unit.	89%

Table 1 provides averages of five semesters 2007-2010 where some of the items received as high as 100%. In several instances the percentage of students' satisfaction in relation to this measurement is much higher than both the university and the faculty percentages, with the exception of semester 1, 2007. During this time the unit was based on case studies and latest journal articles, however, following the weak results the design of this unit was changed and a textbook was introduced, which reflected positively on 'eVALUate'.

As for the qualitative data accompanying both the unit and teaching evaluations highlight student satisfaction when it comes to these points:

Challenge students to think critically and out of the box. Lecturer's class is like a mental Yoga class. Very engaging lectures ... Great class activities and discussions. (**Sem 1, 2007**)

Provides suitable examples and case studies for discussion in class to assist in understanding of concept. (**Sem 1, 2009**)

Lots of real life case studies and constructive group discussions. (**Sem 2, 2009**)

The above in some way echoes what Sims (2004) concludes that teaching business ethics can be enhanced through building conversational learning to build an effective classroom learning environment.

4.2 Business Ethics Teaching and Narratives

Fisher and Lovell, (2009) highlight that teaching business ethics can be done through narratives and those narratives would either be in the form of romance, tragedy, comedy or satire. In addition, Falkenberg and Woiceshyn (2008) contend that using business cases in teaching moral reasoning enhances business ethics. Therefore, on facilitating this unit, we incorporate stories, and several of the stories are derived from the daily news with some specific topical news gathered during the week leading to the seminar, which changes each

semester, coupled with case studies derived from peer-reviewed high ranking journals. Students expressed their satisfaction with this method especially as it is linked to the topic being discussed, providing them with a platform to apply the theories that they have been taught throughout the semester:

The topics we've learned are all relevant to the real life situation; therefore, it is very useful and practical. Unit structure is well designed as it starts with the personal issues and then leads to an international at the end. This unit also encourage student to do a lot of thinking and discussion which is great as we can share our idea together in class. **(Sem 1, 2009)**

Very good connection and communication with students. [lecturer] has own novel ways and means of inculcating the flavour of a tough subject on students. The general discussion of 'Current News' is a good means of bringing all into discussion mode, prior to actual commencement of that day's class work. **(Sem 1, 2010)**

4.3 Lecturers' Interest in Students and Material – Providing Constructive Feedback

Students seemed to evaluate the lecturers' enthusiasm and work, and have commented positively on the two lecturers who ran these five semesters. This echoes Michalos (1997) who argues that teaching business ethics is designed for those with a special interest in teaching.

[Lecturer's method] helps me to have a broader view of what corporate social responsibilities that MNEs and organizations can get themselves involve into. **(Sem 1, 2007)**

It is easy to accept [Lecturer's] enthusiasm for and belief in ethics and ethical actions, from this there is a sense of genuineness in the teaching (being done as an interest rather than a job). The enthusiasm extends to [lecturer] wanting us to be as informed/involved in ethics. Very useful resources are provided, great feedback on assignments, hints for improving the quality of work are all appreciated. **(Sem 1, 2010)**

[Lecturer] experience has taught me the meanings of ethics. I now strongly believe that I do not have to compromise my ethical values just to make others happy. **(Sem 1, 2010)**

The above comments from the students highlight the importance of such a course, and the impact such a unit make on postgraduate students, where interest in ethics is generated, and the fact that students came to understand that they should not compromise their ethical values to make others happy.

In addition, and as part of 'eVALUate' anonymous feedback system, students were required to provide comment as to where the lecturer's method of teaching can improve to allow the improvement of the overall teaching and learning of the unit. Students can only write 600 characters.

Assignment questions should be more specific to know what to focus on **(Sem 1, 2007)**

The assessment components should have a narrower scope in terms of topic. **(Sem 1, 2007)**

Would prefer to have a textbook in the unit that covers the theory part as well **(Sem 1, 2007)**

These comments were taken on board, and a text book was introduced, with more explanations provided on assessments. Thus students' comments for improving overall teaching and learning became different:

I believe the format as it is, is working very well. May be a bit more emphasis on the theory part would be helpful to understand the underlying themes a bit better. **(Sem 1, 2008)**

Nothing, [lecturer] is very good at what [lecturer] does and should be able to continue with the current format for future seminars. **(Sem 1, 2010)**

In these comments it is noticed that students would reflect on their experience as part of a group of students, and their relationship with the lecturer, highlighting the strengths and weaknesses of the way lectures are delivered. Though students were pleased with the way teaching was conducted, they were of the idea that marking was very strict as evident in their comments:

Firstly, the major assignment (case-study) is very interesting and useful as I learn and study more while writing it. Also, it gives wide and deep knowledge while exploring the ethical topics used for case-study. Writing a proposal is definitely helpful with preparing a case-study. Bringing out class participation through the small group discussion is very helpful. **(Sem 1, 2008)**

Was strict with marking paper, punish for small mistake but I think as well that it is good for student to know their mistakes. overall [lecturer] gave a lot of information about the ethics problems and how to deal with them. **(Sem 1, 2009)**

It is worthwhile to note here that students who were in the class merely to cover a core unit found it a challenge to cope with the requirements of the readings, being up to date with the contemporary events, using

their critical thinking skills to analyse and relate to business ethics topics, and ready to engage in debates, arguments and group discussions. This added to the stress that some of those postgraduate students had recently joined Curtin University for their Masters degree, which meant, in some instances, lecturers needed to go to basics in assignments writings, and exerted many efforts in bringing those students from different countries and different cultures into the discussion. This was clear in comments provided by students on the 'eVALUate'

[Lecturer] gives constructive criticism which helps in improving the next assignment from previous. She is also very particular in all aspects of the assignment, which is good because students will learn from their mistakes and give their best in the next assignment. (Sem 2, 2009)

[Lecturer] is passionate about [the] subject, [lecturer] is very knowledgeable and inclusive. [lecturer] enthusiasm in the seminars is evident and [lecturer] tries hard to engage all of the students in all discussions through group work, individual questions etc, however, some students have been quite difficult or unwilling to engage. (Sem 1, 2010)

These students, like the local students might have been taught these generic skills, yet as Tognolini (2001) argues while most are taught such skills within subject boundaries, and the acknowledgement that the value in students being able to generalize these skills across subject boundaries, yet this is not witnessed at this level. This is very worrying especially when the most recent literature on teaching and learning stresses on the importance of generic skills as outlined by Hoover et al. (2010) who acknowledge that generic competencies are widely recognised as being essential for an individual's integration into a rapidly changing workplace.

5. SIGNIFICANCE AND LIMITATIONS

This paper provided empirical evidence that teaching business ethics can and would change the students' mind sets. The evidence cannot be generalized being a one country viewpoint (i.e. Australia). Nonetheless, the significance of this paper is providing evidence that it is not only the material that plays a role, as indicated by the students' feedback, but rather it is the enthusiasm and knowledge of the facilitators who run this unit that matter. This comes in a way as a contradiction to comments made by Frank, Ofobike and Gradisher (2010) who conclude that lecturers face pressure to include business ethics in their curriculum and this pressure as not all are equally comfortable or knowledgeable of models of ethics. These comments have been specific to incorporating business ethics in accounting curriculum. Thus, it is important that those teaching business ethics need to be student-centered, have the necessary knowledge coupled and intertwined with their enthusiasm to teaching such an evolving, ever-changing and challenging unit as business ethics. While it can be noticed that students' way of thinking would improve towards becoming more ethical as they finish the course, yet the limitation lies in the fact that there is no empirical evidence if this improvement is only short-lived. This might be partly solved through the forthcoming deployment of an online survey examining ethical mindsets and ethical climates through the Curtin Alumni, which might prove to be a first step in ensuring that the shifts in students' mind sets is long-lived.

6. CONCLUSION

The main aim of this paper was to examine as to whether teaching a postgraduate business ethics unit makes a difference in postgraduate students minds and might ultimately shift students mind sets. While the findings of this research are limited to the Australian context, the results provide evidence that teaching business ethics does have an effect on the mind sets of students as they become aware of ethical theories and their applications to the contemporary business world. Thus, giving students the opportunities to study business ethics makes a difference and has the potential to encourage a shift from the conventional 'business mind set' students seem to become acquainted in their studies to a more critical perspective. The 'eVALUate' results clearly suggest that this unit (BE567) has encouraging results on students' learning about business ethics and shifting their mind sets. Though this unit is taught broadly in line with Harris' (2008) suggestions with opportunities being provided to enhance the development of a reflective capability, including narrative, and role models. Nonetheless, in semester 1, 2009 students were requested to establish a journal (not marked but

shared in the class with students) of the news, in addition, and in semester 2, 2009 reflection at the end of the semester was introduced, this has provided some insights into the shift of students' mind sets moving from not recognizing what an ethical dilemma is on the first seminar into providing an ethical dilemma with a proper solution based on ethical theories discussed during the semester in the final seminar. On reviewing the material and assessments for this unit, consideration will be taken to include more items to be assessed to reduce the difficulties of assessing intention and commitment to ethical action. Reviewing the course's material is especially important as outlined by Vasconcelos (2010) who states in response to the demands of the 21st century marketplace and the need to stay in step with peers, companies continue to seek the help of business schools in redefining what it means to be socially responsible, and teaching students to have a socially responsible mind set with decision-making skills that look beyond short-term benefits. It seems though that while the design of the unit is important, the attitudes and skills of the teaching staff have a significant impact on how well the students learn. The evidence from the literature combined with the findings of this research support the idea that business ethics should become a compulsory unit in the business curriculum.

REFERENCES

- Boone, L. W. 2004, 'Business Education at St. John's University: An Interview with Richard A. Highfield, Dean, The Peter J. Tobin College of Business', *Review of Business*, vol. 25, no. 2, pp. 3-8.
- Cowton, C. J. & Cummins, J. 2003, 'Teaching Business Ethics in UK Higher Education: Progress and Prospects', *Teaching Business Ethics*, vol. 7, no. 1, pp. 37-54.
- Cowton, C. J. & Macfarlane, B. 2002, 'Editorial', *Teaching Business Ethics*, vol. 6, no. 3, pp. 275-277.
- Donaldson, L. 2008, 'Ethics Problems and Problems with Ethics: Toward a Pro-Management Theory', *Journal of Business Ethics*, vol. 78, pp. 299-311.
- Falkenberg, L. & Woiceshyn, J. 2008, 'Enhancing Business Ethics: Using Cases to Teach Moral Reasoning', *Journal of Business Ethics*, vol. 79, no. 3, pp. 213-217.
- Fisher, C. & Lovell, A. 2009, *Business Ethics and Values: Individual, Corporate and International Perspectives*, 3rd edn, Pearson Education Limited, Essex.
- Frank, G., Ofobike, E. & Gradisher, S. 2010, 'Teaching Business Ethics: A Quandary for Accounting Educators', *Journal of Education for Business*, vol. 85, pp. 132-138.
- Galbraith, D. D. & Webb, F. L. 2010, 'Business Ethics: A View From The Classroom', *Journal of College Teaching and Learning*, vol. 7, no. 4, pp. 39-51.
- Harris, H. 2008, 'Promoting Ethical Reflection in the Teaching of Business Ethics', *Business Ethics: A European Review*, vol. 17, no. 4, pp. 379-390.
- Heifetz, R. A., Kania, J. V. & Kramer, M. R. 2009, 'The dilemma of Foundation Leadership', USA,
- Hoover, J. D., Giambatista, R. C., Sorenson, R. L. & Bommer, W. H. 2010, 'Assessing the Effectiveness of Whole Person Learning Pedagogy in Skill Acquisition', *Academy of Management Learning and Education*, vol. 9, no. 1, pp. 192-203.
- Langlois, L. & Lapointe, C. 2010, 'Can ethics be learned? Results from a three-year action research project', *Journal of Educational Administration*, vol. 48, no. 2, pp. 147-163.
- McDonald, G. M. & Donleavy, G. D. 1995, 'Objections to the teaching of business ethics', *Journal of Business Ethics*, vol. 14, no. 10, pp. 839-853.
- Michalos, A. C. 1997, 'The Best Teacher I ever had was ... J. Coert Rylaardsam', *Journal of Business Ethics*, vol. 1, pp. 93-95.
- Middleton, D. & Porter, J. 2009, 'Executive Education: Schools Prepare For Next Downturn', *Wall Street Journal (Eastern edition)*, 20th August 2009, p. B5.
- Milton-Smith, J. 1997, 'Business Ethics in Australia and New Zealand', *Teaching Business Ethics*, vol. 16, pp. 1485-1497.
- Oliver, B., Tucker, B., Gupta, R. & Yeo, S. 2008, 'eVALUate: an evaluation instrument for measuring students' perceptions of their engagement and learning outcomes', *Assessment and Evaluation in Higher Education*, vol. 33, no. 6, pp. 619-630.
- Sims, R. R. 2004, 'Business Ethics Teaching: Using Conversational Learning to Build an Effective Classroom Learning Environment', *Journal of Business Ethics*, vol. 49, pp. 201-211.

- Sullivan, D. W. 2010, 'The Impact of The Sarbanes-Oxley Act of 2002 on The Teaching of Ethics In Core MBA Curriculums In Ohio', *American Journal of Business Education*, vol. 3, no. 5, pp. 61-69.
- Swanson, D.,Piper, T. R.,Fort, T.,Gentile, M. C.,Shreve, R. S.,Hartman, E. & Margolis, J. 2007, *Shaping Tomorrow's Business Leaders: Principles and Practices for a Model Business Ethics Program*, Business Roundtable, USA.
- Swanson, D. L. & Frederick, W. C. 2003, 'Are Business Schools Silent Partners in Corporate Crime?' *The Journal of Corporate Citizenship*, vol. 9, no. Spring 2003, pp. 24-27.
- Tognolini, J. 2001, 'Generic versus Content-Driven Assessment', in *Australian Curriculum, Assessment and Certification Authorities Conference 2001*, ed. ACACA, ACACA, Sydney.
- Vasconcelos, A. F. 2010, 'Spiritual Development in Organizations: A Religious-based Approach', *Journal of Business Ethics*, vol. 93, no. DOI 10.1007/s10551-009-0243-5, pp. 607-622.

Short Papers

EXPERIMENTAL STUDY ON MOBILE GAME-BASED LEARNING DEVELOPMENT TO GAME DESIGN COURSE

Syamsul Bahrin Zaibon and Norshuhada Shiratuddin

College of Arts and Sciences, Universiti Utara Malaysia - 06010 UUM Sintok, Kedah, Malaysia

ABSTRACT

Various game development methodologies have been introduced for different types of games (genre, platform), which are available in their own specifications. Although there are many introduced methodologies which are currently practiced, studies show that customized phases and steps to develop mobile game-based learning (mGBL) applications are necessary. A mGBL engineering model is proposed intentionally for developing mGBL applications and is outlined in this paper to provide novice developers with an integrated model with which they can approach more systematically the design and development of mGBL. The engineering model combines a game life cycle based on iterative prototyping and learning model, with supporting activities drawn from sources of best practice in mobile game development. This paper describes an experimental study involving the implementation of the proposed model with a group of undergraduate students who are taking Game Application Development course. The results indicate that the proposed model was practical and usable in developing mGBL applications compared to other models.

KEYWORDS

Mobile game-based learning, mGBL, engineering model, experimental study, undergraduate

1. INTRODUCTION

Mobile learning (M-learning) can be described as a learning technique that is applied across locations or that takes advantage of learning opportunities offered by mobile technologies such as mobile phones, smart phones, PDAs and handheld devices. Many research findings also show the prospective and effective use of mobile technologies for learning intention (Naismith et al., 2006; Pachler, 2007). There are three examples of application types for m-learning which are: through SMS text message, Mobile Application, and Mobile Game (mGame). The later type is also known as a mobile game-based learning (mGBL) which can be defined as a game specifically utilized for learning which is played on mobile devices such as mobile phones. The main objective of mGBL is to use game play to enhance motivation in learning, engage in knowledge acquisition, and improve effectiveness of learning activities through mobile environment. Furthermore, mobile environment offers learning in a natural setting, everywhere, and anytime. For those prospective reasons, the key challenges for effective learning with mGame are for the learners to be interested, motivated, engaged, and mobility accessed.

There is a global trend to incorporate mGame to increase the efficiency, cost effectiveness and quality of learning. However, the literature still lacks of the mGBL design and development guidelines. Also, due to the different nature of mGBL, the issues to further explore the design and development of mGBL to help developers make the learning context more valuable are needed. Therefore, this study proposes a mGBL engineering model which incorporates learning models and structured processes which aims to provide the steps and stages on mGBL design and development. In addition, an experimental study was conducted for validating the proposed model by comparing to other models. The proposed mGBL engineering model is described in the next section.

2. THE PROPOSED MGBL ENGINEERING MODEL

This study has identified the key steps of development methodology to be considered in developing mGBL, and therefore we propose a mGBL engineering model (Figure 1). The engineering model is divided into two layers. The first inner layer is called as general phases; pre-production, production and post-production. Each phase consists of components should be included for each respected phases as illustrated in the second layer. The three phases are executed in a sequential manner. However, the activities are flexible, iterative, and can be customized based upon developer preferences. Specific objectives, activities, and deliverables for each component are described in Zaibon and Shiratuddin (2010).

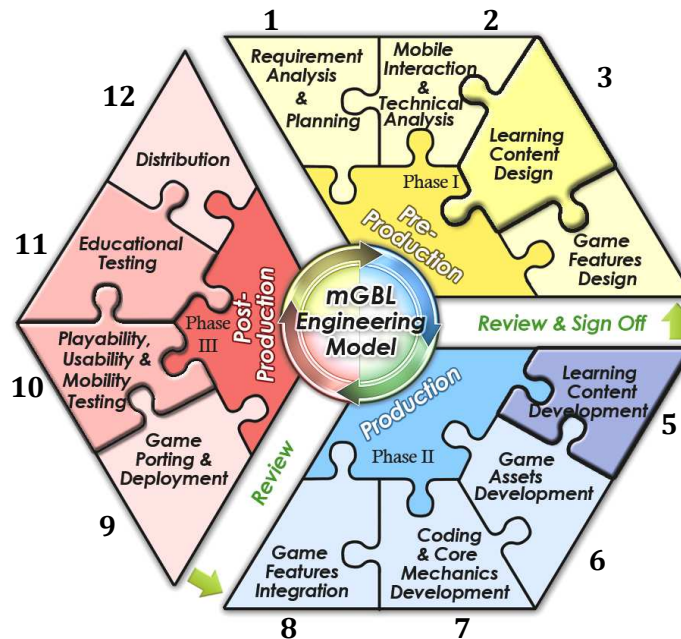


Figure 1. mGBL engineering model

In pre-production phase, four components are identified which are essential to be considered at the initial stage of mGBL development, namely Requirement Analysis & Planning; Mobile Interaction & Technical Analysis; Learning Content Design; and Game Features Design. This phase is initially about discovering the target audience, conceptualizing of idea, designing interaction, specifying learning domain and creating storyboard. At this stage, creating the mGBL concept is vital activities which will be referred to. All of the theories should be embedded in the mGBL learning content design in order to achieve the learning objective. The next phase is shifting to real development of the mGBL where it is coded and integrated with features as specified in the previous phase. Components should be included in this phase are Learning Content Development; Game Assets Development; Coding & Core Mechanics Development; and Game Features Integration. The most important component in this phase is the learning content development which focuses on the learning concept and contents. The learning contents development should be referred from the content experts. Finally, at the final phase, the core activity is the testing procedure to ensure its quality before releasing to the market. Game Porting & Deployment; Playability, Usability & Mobility Testing; Educational Testing; and Distribution are the main components in this phase. Deployment step is essential at this stage to cater problems of running on different platforms of mobile devices. The platforms vary in different types and categories such as Symbian, Windows Mobile, Java, and Palm OS. In addition, this engineering model also provides flow of documents and deliverables to be referred to for documentation and references (Zaibon & Shiratuddin, 2010). In assessing the worth of the proposed model, an experimental study was set up as described in the next section.

3. MODEL VALIDATION USING EXPERIMENTAL STUDY

The research methodology can be divided into five phases; (i) awareness of problem, (ii) suggestion, (iii) development, (iv) evaluation, and (v) conclusion. The overall process is mainly focused on developing an engineering model of mGBL.

In evaluation phase, an experimental study was conducted involving the implementation of the proposed model with a group of undergraduate students who are taking Game Application Development course at Universiti Utara Malaysia. 70 students participated as subjects in this study and they were randomly divided into four groups (A, B, C, D) for comparison as illustrated in Table 2. They were required to use the given model as a basis for designing and developing mGBL applications for their final project. This study was carried out concurrently for all groups and took about one semester. Each group was given detail description of their model and both course instructor and researcher helped students in terms of the technical aspects for developing mGBL application.

Table 1. Experimental and control groups

Group	N	Types of Development Model
A (Control)	18	Analysis, Design, Development, Implementation, Evaluation (ADDIE)
B (Control)	20	Input-Process-Output (IPO)
C (Control)	14	Game Life Cycle (GLC)
D (Experimental)	18	mGBL engineering model (mGBL)
Total	70	

At the end of the project, data was collected in several forms. Students presented their projects and gave reflections to the instructor and researcher about their experiences in developing mGBL applications. Apart from that, they were also required to complete a questionnaire which asked them to evaluate the implemented model based on dimensions described in the next section. The questionnaire acts as an instrument that contains the evaluation dimensions. These dimensions are customized based on methodology attributes as proposed by Veryard (1985), Platts (1990), Henderson-Sellers (1995), Lang & Barry (2001), Riemenschneider (2002), Yu and Cysneiros (2002), Ciconte(2003), Hecksel (2004), Bonner (2008), and Kerzner (2010). The list of methodology attributes and items are illustrated in Table 2. The responses were formed using 10-point semantic scale where 1 is the lowest score and 10 is the highest. Each score represents the percentage of agreement for each item.

Table 2. List of evaluation items of mGBL engineering model

1.	Visibility	The model allows me to determine the completeness of my project.
	a.	The model allows me to intelligently judge the relevance and completeness of my project.
	b.	The model makes reasoning clear and visible to me as a developer of mGBL.
2.	Complexity	
	a.	Learning the model is easy for me.
	b.	I think the model is clear and understandable.
	c.	Using the model does not require a lot of mental effort.
	d.	The model is not cumbersome to use.
	e.	Using the model does not take too much time from my normal duties.
3.	Compatibility	
	a.	The model enables me to work in the way I prefer.
	b.	The model is compatible with the way I develop mGBL.
	c.	Using the model fits well with the way I like to work.
	d.	Using the model is compatible with all aspects of my work.
	e.	Using the model is compatible with my past development experience.
4.	Effectiveness	
	a.	Using the model increases my job performance and productivity.
	b.	Using the model enhances the quality of my work.
	c.	Using the model makes it easier to do my job.
	d.	The advantages of using the model outweigh the disadvantages.
	e.	Using the model produces the mGBL, for which it is intended for.

Table 3. List of evaluation items of mGBL engineering model (continue)

5. Flexibility	
a.	The model is adaptive and responsive to changing in user needs.
b.	The model is flexible with minimal planning.
c.	All the concepts and components included are strictly necessary.
d.	Deviating from the established activities and phases in the model is possible.
6. Clarity	
a.	The phases in the model are easily followed.
b.	The model as a whole is workable.
c.	Steps or activities included are easy to apply.
d.	Adhering to the phases and activities is easy.
e.	The model provides specific guide to mobile technical specifications.
f.	The model provides specific guide to learning content development.
g.	The model provides specific guide to game testing (educational aspect).
h.	The model provides specific guide to game testing (mobility, playability and usability aspects).
7. Manageability	
a.	The model is capable of being managed or controlled.
b.	Changing requirements in the model over time is possible.
c.	The model provides manageable guidelines.
d.	The model allows self-monitoring to be followed.
8. Evolutionary	
a.	The model allows continuous feedback from users.
b.	The model is capable of incremental change, to cope with new ideas or technological opportunities.
c.	The model provides opportunity for improvements learned from experience.
d.	The model provides communication and collaboration between developers and users continuously to incorporate the evolving requirements.
e.	The model is tolerant of minor errors and alterations.

The results presented in this paper illustrate the analysis of the findings from the evaluation questionnaire by comparing the implemented four models based on the evaluation dimensions. Therefore one way analysis of variance (ANOVA) was carried out. Table 3 illustrates the mean scores and standard deviations (SD) of all models based on eight dimensions denoted by students. It shows that mGBL engineering model scored mean above 7 (out of 10) of all dimensions compared to other models. This result proved that mGBL engineering model has good indicators for the design and development of mGBL application.

Table 4. Means and standard deviations for four models and eight variables

Dimension/ Variable	ADDIE		IPO		GLC		mGBL	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Visibility	6.722	1.300	6.483	1.374	6.714	1.563	7.833	1.195
Complexity	6.300	1.224	6.320	1.640	6.886	1.836	7.022	1.768
Compatibility	6.611	0.981	6.720	1.245	6.471	1.599	7.467	1.552
Flexibility	6.847	1.269	6.488	0.985	6.607	1.675	7.750	0.928
Clarity	7.236	1.044	6.469	1.173	6.277	2.091	8.035	1.317
Effectiveness	7.011	1.103	6.640	1.203	6.271	1.746	7.922	1.336
Manageability	6.792	1.412	6.675	1.095	6.589	1.890	7.917	1.406
Evolutionary	7.233	1.152	6.580	1.131	6.357	1.681	8.222	1.127

In order to ensure there are significant different between all groups, one way ANOVA was run eight times for each dimension. The results show that there are significant different ($p < .05$) between all groups in term of **Visibility** with $F(3, 66) = 3.666$, $p = .017$; **Flexibility** with $F(3, 66) = 3.996$, $p = .011$; and **Manageability** with $F(3, 66) = 3.278$, $p = 0.26$. In dimension **Clarity** and **Effectiveness** there are very significant different ($p < .01$) between all groups with $F(3, 66) = 5.571$, $p = .002$ and $F(3, 66) = 4.717$, $p = .005$ respectively. The result also indicates that the **Evolutionary** dimension is highly significant ($p < .001$) different of all groups with $F(3, 66) = 7.543$, $p = .000$. However, scores of two dimensions are not significantly different between groups ($p > .05$): **Complexity** $F(3, 66) = 0.956$, $p = .419$ and **Compatibility**

$F(3, 66) = 1.869$, $p = .143$. The reasons can be expected that students felt all models were complex with a burden of many steps or activities to be followed. They also thought that the given models not well-suited to them as novice developers. In order to detect differences among groups, a multiple comparison test using Tukey Least Significant Difference (LSD) is utilized. The test can be used to determine whether a significant mean difference exists between each pair of groups (Table 4).

Table 5. Multiple comparisons between models using Tukey LSD

Types of Model		Mean Different (I – J) for Each Dimension							
		Visibility	Complexity	Compatibility	Flexibility	Clarity	Effectiveness	Manageability	Evolutionary
(I)	(J)								
mGBL	ADDIE	1.111*	0.722	0.856	0.903*	0.799	0.911*	1.125*	0.989*
	IPO	1.350*	0.702	0.747	1.263*	1.566*	1.282*	1.242*	1.642*
	GLC	1.119*	0.137	0.995*	1.143*	1.758*	1.651*	1.327*	1.865*

*The mean difference is significant at the .05 level.

In **Visibility** dimension, comparing mGBL to ADDIE, IPO, and GLC, mGBL is seen more visible with the mean difference in visibility is large ($M > 1$). The Sig. values of ADDIE ($p = 0.016$), IPO ($p = 0.003$), and GLC ($p = 0.023$) show that this is statistically significant. However in term of **Complexity**, the mean differences between mGBL to ADDIE, IPO and GLC are relatively small ($M < 0.7$) and non-significant ADDIE ($p = 0.186$), IPO ($p = 0.187$), GLC ($p = 0.814$) even though mGBL is less complex than the three models. In **Compatibility** dimension, although mGBL scored higher than ADDIE and IPO, the mean difference in compatibility is relatively small ($M < 0.9$) and the Sig. values ($p > .05$) shows that this is statistically not significant. In contrast, comparing mGBL to GLC, although the mean difference in compatibility is less than 1 ($M = 0.995$), the Sig. value ($p = 0.042$) shows that this is statistically significant. mGBL also gained more score compared to ADDIE, IPO and GLC in **Flexibility** and statistically significant. To compare mGBL to ADDIE, the mean difference in **Clarity** is small ($M = 0.799$) even though the positive sign indicates that mGBL is clearer than ADDIE. The Sig. value ($p = 0.094$) shows that this is not significant. However, in comparing mGBL to IPO and GLC, the mean difference in clarity is large and the Sig. value ($p < .05$) shows that this significant. The other three dimensions (**Effectiveness, Manageability, Evolutionary**) mGBL also have higher scores compared to ADDIE, IPO, and GLC. The mean difference in effectiveness is quite big and the Sig. value ($p < .05$) shows that this is statistically significant. The positive sign also indicates that mGBL is more effective than GLC. Significantly higher mean scores in visibility, flexibility, clarity, effectiveness, manageability, and evolutionary exhibited by students for mGBL engineering model, indicated that they understand how to implement the model as guideline for their mobile game development project. They also have completed their project in structured manner without having difficulties in finding the game requirements especially related to mobile game for learning. Nevertheless some minor issues with the mGBL engineering model did become noticeable where a few students found some of them confusing. These issues related in particular to some aspect of technical testing for their project due to time constraints, although they successfully completed their project (Figure 2 and Figure 3).

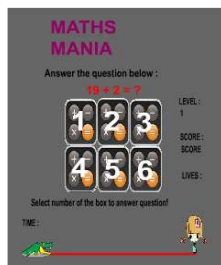


Figure 2. Maths Mania mGBL



Figure 3. Hungry Mouse mGBL

4. CONCLUSION

This study has proposed the mGBL engineering model that can be helpful for the developers to follow through for developing mGBL applications which make the mGBL more effective for learning environment. This study also conducted an experimental study using eight dimensions, namely: visibility, complexity, compatibility, flexibility, clarity, effectiveness, manageability, and evolutionary. The result showed a positive feedback that the mGBL engineering model scored higher mean difference as given by students excluding complexity and compatibility dimensions. This result revealed that the proposed model is good and suitable to be implemented by students for their course project to develop mGBL applications. A number of future considerations can be suggested for this study, for example the experimental study should be extended to other group of students and to developers in commercial and industry environments. Validation, verification and testing along the whole process of the proposed mGBL engineering model also required to be focused on. Such findings can perhaps provide richer information and more discussions. In addition, the evaluation session can be conducted to other mGBL applications.

REFERENCES

- Bonner, N. (2008). *Acceptance of systems development methodologies: Testing a theoretically integrated model*. PhD Thesis. The University of Texas at Arlington.
- Ciconte, B., Devgan, M., Dunbar, S. Go, P. & Prem, J. (2003). J2EE Software Development Methodologies. InformIT. <http://www.informit.com/articles/printerfriendly.aspx?p=102017>
- Hecksel, D. (2004). *Methodology Evaluation and Selection*. White Paper. Sun Microsystems. Retrieved from <http://www.davidhecksel.com/projectcontext/whitepaper.html>
- Henderson-Sellers, B. (1995). Who needs an object-oriented methodology anyway? *Journal of Object Oriented Programming*, 8(6), pp. 6-8.
- Kerzner, H. (2010). *Project Management: Best Practices: Achieving Global Excellence (The IIL/Wiley Series in Project Management) 2nd Edition*. Wiley.
- Lang, M. & Barry, C. (2001). *Techniques and Methodologies for Multimedia Systems Development: A Survey of Industrial Practice*. In Russo, N. L. et al. (eds), *Realigning Research and Practice in Information Systems Development*, Proceedings of IFIP WG 8.2 Conference, Boise, Idaho, USA, July 2001, pp. 77-86. Boston: Kluwer
- Naismith, L., Lonsdale, P., Vavoula, G., & Sharples, M. (2006). *Report 11: Literature review in mobile technologies and learning*. Retrieved August 20, 2008 from http://www.futurelab.org.uk/resources/documents/lit_reviews/Mobile_Review.pdf
- Pachler, N. (Ed.). (2007). *Mobile learning: towards a research agenda*. WLE Centre Occasional Papers in Work-based Learning 1. London: Institute of Education.
- Platts, K. (1990). *Manufacturing Audit in the Process Strategy Formulation*. PhD dissertation, University of Cambridge, United Kingdom.
- Riemenschneider, C. K., Hardgrave, B. C. & Davis F. D. (2002). Explaining Software Developer Acceptance of Methodologies: A comparison of Five Theoretical Models, *IEEE Transactions on Software Engineering*, 28(12), pp. 1135-1145.
- Zaibon, S. B & Shiratuddin, N. (2010). *Mobile Game-Based Learning (mGBL) Engineering Model as a Systematic Development Approach*. In Z. Abas et al. (Eds.), *Proceedings of Global Learn Asia Pacific 2010*. pp. 1862-1871. AACE.
- Veryard, R. (1985). *What Are Methodologies Good For Data Processing*, 27(6), pp.9-12.
- Yu, E. & Cysneiros, L. M. (2002). *Agent-Oriented Methodologies-Towards a Challenge Exemplar*. Proceedings of the 4th International Workshop on Agent-Oriented Information Systems (AOIS'02). Toronto.

COLLABORATION BY ACADEMIC INSTITUTIONS: AN INVESTIGATION FOR ACCESS TO ELECTRONIC INFORMATION

Tendani J. Lavhengwa and JS Van Der Walt

Tshwane University Of Technology, South Africa - P.O. Box 11271, Vorna Valley, Midrand, 1686, South Africa

ABSTRACT

Access to information in order to generate research outputs is an important element for every academic institution's development and growth. In universities and research institutions these research outputs comes in the form of research papers, articles, Masters and Doctoral dissertations. The challenge is that these outputs can only be possible through access to adequate information. At the Masters and Doctoral levels information available in the local library is usually not adequate. This is because the output scope must be appealing to a wider audience and also potentially add value to the body of knowledge.

This paper is a result of an investigation into the collaboration initiatives amongst Academic And Research Institutions (ARI) primarily focusing on access to electronic information. This paradigm and the relationships were investigated and analysed. The papers assesses the initiatives towards granting access to electronic information and proposes an ARI collaboration guidelines for best practice.

KEYWORDS

Collaboration, Academic and Research Institutions.

1. INTRODUCTION

The South African (SA) government continues to encourage inter-sectoral and inter-institutional collaboration. This paper considers the collaboration initiatives of academic institutions and research supporting organisations. This paper is part of a study investigating collaboration amongst ARI. In the main study academic institutions include universities, research supporting organisations, research councils and other non-profit academic organisations.

In a study by Khan and Motawa (2010) of relations between China and Pakistan collaboration between research institutions was identified as having the ability to help in analysing the situation, identifying the potential areas and providing assessment that will help the collaboration process between the two countries. In the same study an interaction between government agencies, business community and the research institutions was also identified as having a synergic impact. This motivated the study since it proves that academic research collaboration is very important and can be of value.

This paper starts by looking at the key study objectives followed by the founding concepts and the literature. The data collection and methodology will then be discussed also showing the study participants. A discussion of the results and findings will insure considering the common guidelines for best practice originating from the data collected. The last part will list and discuss the conclusions, further works and lessons learned.

2. STUDY OBJECTIVES

This paper is part of a comprehensive study. The below key objectives encapsulate what the study aims to achieve in its investigation:

- To investigate collaboration initiatives amongst ARI;

- To investigate the driving forces and challenges towards collaboration amongst ARI;
- To investigate the technology used in ARI to support collaboration initiatives;
- To conduct interviews to collect relevant data from the participants; and
- To develop a guideline for best practice and later framework or model towards collaboration amongst ARI.

3. FOUNDING CONCEPTS AND LITERATURE

This section starts by discussing collaboration as one of the founding concepts. The National System of Innovations, Open access, OpenDOAR and free library will be discussed since they play an important part in the study. These concepts introduce different modes and possibilities of access that can be applied.

3.1 The Concept of Collaboration

Crow (2002) defines collaboration as the basis for bringing together the knowledge, experience and skills of multiple team members to contribute to the development of a new product more effectively than individual team members performing their narrow tasks in support of product development. This is relevant since ARI needs to work together towards achieving their goals.

There are a variety of tools and technologies to facilitate communication and collaboration which Crow (2002) categorises them as asynchronous and synchronous. Synchronous collaboration happens where all participants view information and/or meet at the same time. With asynchronously collaboration participants view information and provide feedback at different points in time.

Jacobs (2009) lists ten cultural elements of collaboration in his concept of The Professional Networked Learning Collaborative as Trust, Sharing, Goals, Innovation, Environment, Collaborative Chaos, Constructive Confrontation, Communication, Community and Value. These are cited as providing an excellent framework from which to view collaboration within the context of the Professional Networked Learning Collaborative.

For this paper and study collaboration is the focal point and acts as an engine to connect all the required stakeholders. All the cultural elements listed are relevant to this study. There are however three that the study focuses on, which are trust, sharing, innovation, collaborative chaos and communication.

3.2 National System of Innovation

Freeman (1987) defines national innovation systems (NSI) as the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies. The NSI approach stresses that the flows of technology and information among people, enterprises and institutions are key to the innovative process (OECD, 1997).

The concept of NSI rests on the premise that understanding the linkages among the actors involved in innovation is key to improving technology performance (OECD, 1997).

According to Blankley and Moodley (2004) the characteristics of a national system of innovation (NSI) can be summarized as:

- Firms are part of a network of public and private sector institutions whose activities and interactions initiate, import, modify and diffuse new technologies;
- An NSI consists of linkages (both formal and informal) between institutions;
- An NSI includes flows of intellectual resources between institutions;
- Analysis of NSIs emphasizes learning as a key economic resource and that geography and location still matter.

The characteristics described above demonstrate the importance of a guideline for collaboration amongst ARI.

3.3 Open Access and OpenDOAR

OpenDOAR is an acronym for Directory of Open Access Repositories. The OpenDOAR (2010) service provides a quality-assured listing of open access repositories around the world. OpenDOAR staff harvest and assign metadata to allow categorisation and analysis to assist the wider use and exploitation of repositories. Each of the repositories has been visited by OpenDOAR staff to ensure a high degree of quality and consistency in the information provided. The scope of OpenDOAR (2010) is primarily to be a service aimed at enhancing and supporting the academic and research activities of the global community. This is relevant for this study since modes of access are essential for collaboration.

3.4 Free Library

The Free Library (2010) is another initiative with invaluable research tool and the fastest, easiest way to locate useful information on virtually any topic. A user can explore the site through a keyword search, or simply browse the enormous collection of literary classics and up-to-date periodicals to find exactly what you need. The Free Library (2010) offers free, full-text versions of classic literary works from hundreds of celebrated authors. The free library is another initiative towards granting access to researchers on a collaborated view.

4. DATA COLLECTION AND METHODOLOGY

The study applied a grounded theory approach while making use of both purposive and snowball sampling. According to Strauss and Corbin (1990) grounded theory is an approach where the data collection, analysis and theory development stand in a reciprocal relationship with each other. It was essential to have a connection between all the stages of the study to allow for any findings to impact the study going forward. The intention was to develop a guideline followed by a framework or model towards the collaboration amongst ARI. The primary data was in-depth individual interviews. Short questionnaires, document analysis and observation with anecdotal records were also be used to achieve triangulation. Triangulation is necessary for qualitative studies towards verifying the results and findings.

The study focuses on participants in the Gauteng Province in South Africa. The study started with a preliminary research which was conducted at the final months of in 2009 and the beginning months of 2010. Short introductory questionnaires were later distributed to multiple participants followed by interviews. The table below shows the number of participants per category.

Table 1. Data collection participant's categories

Category ID	Total # Participants	Description
InfoUser / InforCreator	18	Involved in the creation and use of research information such as research papers, colloquium, Journals, Tutorials, etc.
Academic Institution	8	Working in an academic institution (University, Technikon, college). Can be full time / part-time / contracting or other but must specify
Research / Support Institution	10	Working in a research institution or related academic support organisation. These include but not limited to the Computer Society of South Africa (CSSA), Johannesburg Centre for Software Engineering (JCSE), Centre for Science and Industrial Research (CSIR), National Research Foundation (NRF) and others)
Core-Depts	23	Working in one of the following core focus department or divisions: Information Technology, Information Systems, Information Science, Technology Services, Information Systems Audit, Library Services, Research and innovation and other related
PostGrad	6	A postgraduate student studying towards a Masters or Doctoral Degree or busy with a post doctoral program These are the main users of this information)
Other	1	Other research related tasks in business or organizations. Specify the details.

Source: Own adaptation

The snowball approach allowed the researcher to find more participants following the first interviews. Observations with anecdotal records were collected on an ongoing basis throughout the study. Websites of the participating organisations were also assessed using a short questionnaire that was completed by the participant. Where no one was available the researcher completed the questionnaires.

5. RESULTS AND ANALYSIS

From all the data collection instruments used, multiple findings emerged. This section will focus on the items that have been analysed. These findings are aimed to lead to a theoretical model or framework.

5.1 Common Themes identified from Interviews

- Continuous training for academic researchers on where and how to access services was listed as an essential. This will enable the researchers to keep up to date with the latest trends, tools and opportunities available in their focus area.
- In ARI collaboration there are multiple stakeholders who must be consulted.
- The staff and academics are willing to work together for the benefit of research and adding to the body of knowledge.
- Academic institutions continue to be clouded by their history.
- The geographical location of the institution has an impact on their collaboration initiatives.

5.2 Observations with Anecdotal Records

- Researchers relied on their own initiatives with minimal reliance on their institutions facilities such as library services.
- There were a number of participants studying towards their Masters and Doctoral degrees who did not know where to find resources such as funding
- Other challenges that emerged from the participants were that they believed memorandums of understanding (MOU) between the academic institutions and research supporting organisations would help them during the data collection.

5.3 From Websites of Participants

- Relevant contact information for researchers was available on the website;
- Databases of work that has been produced by the academics or purchased for use by researchers;
- Template documents for researchers are also available for use.

5.4 The ARI Collaboration Guideline for Best Practice

Table 2. ARI Collaboration guideline for best practice

Main theme	Guiding elements towards ARI collaboration
* Training	* Training of all academics and students is essential
* Multiple stakeholders involvement	* All academic and supporting organisations to have websites that allow academics to make comments and requests
* Government guidance	* The government need to take a guiding, supporting and enabling role
* Internet solutions	* All academic and supporting organisations to have websites that have a menu of available services
* Collaboration with research councils	* Collaborative initiatives needs to be in place with the Research Councils
* Output in electronic formatted	* Ensure all research outputs are in electronic formats
* Search across multiple sources	* Ability for researcher to search across multiple sources from different institutions
* Advice on purchasing of resources	* Advice and recommendation on costs of purchasing resources for academics needs to be sourced from an independent agency
* Memorandum of Understanding and continuous updates	* Memorandum of Understanding needs to be in place amongst the academic institutions * Work together all the time

Source: Own adaptation

The elements in the above guideline can flows from any direction. This is the case since the main objective of the guideline is to highlight the main participants when collaborating amongst ARI.

6. FINAL WORDS

There are some final words from the study. These include the conclusion, further works and the lessons learned

6.1 Conclusion

This paper comes to a conclusion that collaboration is essential for academic research to continue and add value and contribute to the body of knowledge. Academics need to work together towards ensuring a high standard.

6.2 Further Works

This paper represented work in progress; the investigation needs to be completed. Feedback sessions with the participants on the findings need to be done. Other research papers generated from this study needs to be submitted for further peer review. Further presentations of findings will be done at colloquiums and workshops.

6.3 Lessons Learned

There were some key lessons learned in the study and detailed in this paper. Firstly that there are many gaps that exists between academic institutions and supporting organisations. Secondly, a number of initiatives are in place but not connected while trying to reach the same goals. Thirdly some of the data collected indicated that there is competition between the academic institutions for student which makes collaboration difficult.

REFERENCES

- Blankley, W. and Moodley, S. 2004. South Africa's national system of innovation and cluster formation in the ICT sector. (Paper presented at the Regional Conference on Innovation Systems and Innovation Clusters in Africa, Bagamoyo, Tanzania, 18-20 February).
- Crow, K. 2002. Collaboration. DRM Associates, Retrieved August 25, 2010, from <http://www.npd-solutions.com/collaboration.html>.
- Freeman, C. 1987. Technology and Economic Performance: Lessons from Japan, Pinter, London.
- Khan, A. and Motawa, A. 2010. Global Business And Technology Association (GBATA). 'GENERATING INNOVATIVE SOLUTIONS TO RECURRING PROBLEMS IN THE GLOBAL BUSINESS ENVIRONMENT – A MULTI-, INTER-, AND TRANS DISCIPLINARY APPROACH TO FORMULATING AND MAINTAINING A COMPETITIVE ORGANIZATIONAL EDGE', Proceedings of The 12th Annual International Conference, Mpumalanga, South Africa, 5-9 July, 2010, pp. 353-358. ISBN: 1-932917-06-3.
- Jacobs, R . 2009. Education Innovation The Ten Cultural Elements Of Collaboration In The Professional Networked Learning Collaborative. Retrieved August 25, 2010, from http://educationinnovation.typepad.com/my_weblog/2009/06/the-ten-cultural-elements-of-collaboration-in-the-professional-networked-learning-collaborative.html
- OpenDOAR - Directory of Open Access Repositories OpenDOAR. 2010. Retrieved March 18, 2010, from: http://www.open_doar.org/about.html
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). 2010. Retrieved September 20, 2010, from: www.oecd.org/dataoecd/35/56/2101733.pdf
- Strauss, A., & CORBIN, J. 1990. Basics of qualitative research: Grounded theory procedures and techniques. London: Sage.
- THE FREE LIBRARY. 2010. Retrieved March 18, 2010, from: www.thefreelibrary.com

INTERNATIONAL HIGHER EDUCATION INSTITUTIONS IN THE ARAB STATES: HISTORICAL DEVELOPMENT AND TRENDS

A. M. Abouammoh and A. A. Mazi

Centre for Higher Education Research and Studies (CHERS) - Ministry of Higher Education, Riyadh, Saudi Arabia

ABSTRACT

Internationalization of higher education has taken different forms; one of them is campuses of universities and colleges in other countries. This type of internationalization in higher education has been experienced, in the Arab states since 1919. This paper provides some general perspective on the prospective via rapid surveys of the historical development and current trends of international universities and colleges in the Arab States. At present, there are many higher education institutes in the Arab states. These institutions are different in sizes and types of international association. They have also success stories and financial difficulties. The impact of these institutes on Arab states has been always controversial. The paper considers an account of most of these aspects in brief and gives perspective of the major trends of these institutions

KEYWORDS

Foreign universities; cross boarder higher education; university branch; social impact.

1. INTRODUCTION

A template is a set of styles and page layout settings that determine the appearance of a document. This template matches the printer settings that will be used in the proceeding and the CD-Rom. Use of the template is mandatory.

Internationalization of higher education has been practiced or realized, in general, through various modes such as education mobility, scholarships, exchange agreement between governments and institutions, distance learning and international campuses. In fact, education mobility may include mobility of staff, students and researches. Also, scholarships can be for national students to study abroad such as the King Abdulla Scholarship Program for Saudi students, that funds more than 95,000 in 53 countries or for foreign students to study at national universities such as Fulbright of USA or Chevening of UK or DAAD of Germany among many others, regional agreements such as Erasmus and Erasmus Mundus programs in EU. Distance learning has developed from in print, to radio broadcast, television, internet, audio conferencing and open and virtual universities. University campuses whether they are in forms of independent institutions or mainly branches of existing universities in other countries as an old mean of internationalization of higher education in the world.

The later type of internationalization has been practiced since many years in the Arab states, see Abouammoh (2007). For instance the first foreign higher education institutions was established, in Cairo, Egypt, by a group of American educators go back to 1919 that has become the American University in Cairo (AUC), see AUC (2010). Next, in 1920 the American University of Beirut (AUB) was established, in Beirut, Lebanon. AUB goes back to the Syrian Protestant College that was opened with its first class of 16 students in December 3, 1866, see AUC (2010). There are about 14,000 students in these two schools, about 50% of them are females. Most of the students are national from the host states. Also, there are other Arabs, Europeans, American and nationalities from elsewhere in these two schools. Since the fourth quarter of the 20th century, there have been many foreign universities, colleges programs in different parts of the world and in various Arab States in particular. The main host Arab states for foreign universities and other higher education institutes are Egypt, Lebanon, United Arab Emirates, Qatar, Kuwait, Syria and Jordon. It was the requisites of World Trade Agreement that motivates many developing countries to consider higher education

as one sector of bilateral agreement and investment. In reality, for-profit private higher education was introduced in most Arab states prior to the establishment of higher education assessment, accreditation and quality assurance concepts.

1. Many Arab Scholars and educators have criticized severely the practices of some international higher education institutions in the Arab states especially the recent one for their dual belonging for the cones and not for the pros., see Abouammoh (2004 a, b) and Sorti (2004) among others. The main rationalizations of criticism are:

2. Institutions claim that they are as good as their main campuses at home, whereas the institutional objectives, quality of staff, research and sometimes programs are different.

3. The exporting quality institutions do not enforce or, sometimes even require measures of good practice of their universities overseas.

4. Most host countries lack quality measures or can't impose higher quality requirements that wouldn't even be fully addressed by their national institutions.

5. Most international institutions are self-funded and have limited academic resources are put to compete with national ones, most of which are publicly funded and provided free or with nominal tuition fees. This set-up form unfair and unbalanced educational environment.

It seems that these concerns, along other, have been risen in various parts of the world and it is therefore UNESCO and OECD have held three consecutive meetings to discuss a framework for cross border higher education. The dialogue of representatives from exporting and importing of higher education countries have been concluded by the approval of "Guidelines for Quality Provisions in Cross-border Higher Education", see UNESCO –OECD (2005). These guidelines aim to enhance quality provision in cross-border higher education through recommendations to all stakeholders in the sector, these are:

1. Governments,
2. Higher education institutions/providers,
3. Student bodies,
4. Quality assurance and accreditation bodies
5. Academic recognition bodies, and
6. Professional bodies.

2. FEATURES OF INTERNATIONAL INSTITUTUIOS

International higher education institutions in the Arab States can be classified into two historical generations. The first group, see Table 1, is an old one that goes back to the mid of the 19th and the beginning of the 20th centuries. The second group contains those established in later dates.

In fact, most of the first group institutions were founded originally on religious missionary initiative. The historical development of the institution reveals that they have gone through changes, they also moved for example from uni-sex to co-educational. It is worth noting that each of these institutions has, at present, about 50% females of its students' population. They are rather comprehensive universities where they provide most academic disciplines. The basic start of these universities either very modest with limited programs or colleges or higher schools that developed to two years college then gradually to fully fledged university. These institutions have made significant impact on the Arab higher education and society. Many professional and community leaders have graduated of these universities. Some of these institutions were able to address many community problems in pre-university education, economy and social development, via various academic or other activities. All of these institutions are for none-profit private. They are either associated with American universities or accredited by one of the USA accreditation boards. The old group universities have research centers in different fields or engaged in locally or internationally funded research projects. They were also able to get funds for specific institutes or research centers from local or Arab businessmen, who appreciated their roles in providing highly skilled human resources and their positive impact on education and development.

Table 1. Old International universities in the Arab States

Institutions	State	Year of Est.	Year of initiation
AUC	Egypt	1919	1919
AUB	Lebanon	1966	1862
LAU	Lebanon	1994	1835
AUC : Website, American University in Cairo: http://www.aucegypt.edu AUB: American University of Beirut: http://www.aub.edu.lb LAU: American Lebanese University: http://www.lau.edu.lb			

The second group, of international higher education institutions, is recent i.e most of them have been established in the first decade of the 21st century, see Table 2. It is noted that some of these institution are independent campuses associated with some international universities, branches or overseas campuses of international universities. Most of the recent international universities are for-profit, small size institutions and have multination faculty. Most disciplines offered are business, computer science and IT, English language, medical allied sciences and engineering. Rarely, liberal arts, education, basic sciences, medicine and dentistry degree programs are offered in these universities. The economic downturn in some of the Arab states have hit hardly some of these institutions which have forced them to reschedule their activities or might close or to consider closing. In contrast to the old group of universities, recent universities have got their license, as higher education institutions. Moreover, some universities got licenses to offer master programs along with their undergraduate programs or one to two years later. Research in the recent universalities has not been given sufficient attention, in most of these universities, and it is either very poorly funded or it is invisible item in their budgets. Also most recent universities are either licensed without accreditation or locally accredited.

Table 2. Some recent Universities in the Arab State, year of establishment and number of students at 2009/2010

University	State	Year Est.	No. of Student
UOWD	UAE	1993	3,500
AU-Dubai	UAE	1995	2,850
AUS	UAE	1997	5,166
Cornell University – Q- Campus	Qatar	2001	200
GUC	Egypt	2002	-
AUK	Kuwait	2003	-
BUiD	UAE	2004	-
BUE	Egypt	2005	2771
GJU	Jordan	2008	1200
MSU Dubai	UAE	2008	-
UOWD : University of Wollongong in Dubai: http://www.uowdubai.ac.ae/ AU-Dubai: American University –Dubai: http://www.aud.edu/ AUS : American University of Sharjah : http://www.aus.edu/ Cornell University Q- Campus :: http://www.cornell.edu/visiting/qatar/ GUC: German University in Cairo: http://guc.edu.eg/ AUK: American University of Kuwait: http://www.auk.edu.kw/index.jsp BUiD: British University in Dubai: http://www.buid.ac.ae/buid/ GJU: German-Jordanian University: http://www.gju.edu.jo/ BUE: British University in Egypt: http://www.bue.edu.eg/ MSU Dubai: Michigan State University Dubai: http://dubai.msu.edu/			

It is worth noting that almost all these universities whether from the old or recent groups are using English language for instruction. Some of these universities have introduced a preparatory year and others have required minimum score in TOEFL or IELTS. Others have also required entrance mathematics and science tests for skills or attainment.

3. TRENDS AND PERSPECTIVES

The international universities in the Arab states have played and are playing very important roles. They have been in controversy for many years for their initiation projects as activity of Christian missionaries. In fact, religious organizations or individuals have been instrumental in education and higher education even in America, Europe and other parts of the world. Even, renowned higher education institutions in some Arab states used to confine their mission as religious institutions such as Al Azhar University in Egypt, Al-Zaytouna University in Tunisia, Imam Mohammed bin Saud Islamic University in Saudi Arabia, Om Dorman Islamic University and 'Université Saint-Joseph de Beyrouth in Lebanon. Nowadays, these universities are inclined to be comprehensive universities where religious study is one of the provided disciplines. Old and some recent universities have distanced themselves from religious biased by giving facilities to all religions and trying to be close to the community needs by addressing various cultural and social issues. In the other hand, some universities have initiated programs and activities to be closer to the practices and social expectations of their communities. There seems to be no apparent formal intrusion, by the Arab states, in the academic curricula in all locally licensed or branches of international universities. All international universities face fierce competition with national universities. The latter are fully funded by the states or even national students are given stipend and loans. In almost all the GCC states governments provides, generous, scholarships to national students to study overseas, including the mother institutions of their international campuses. Accreditation and quality assurance agencies in all Arab states are recent, if they are there, and the size of the student's body and quality of education in some public universities are questionable. This is mainly due to limited infrastructure facilities, high SSR, high turn-over rate of expatriate staff, poor research funds and lack of qualified national teaching staff. It is therefore, very hard to implement very stringent quality assurance measures for only private and international higher education institutions. There are always non-national students in international universities that range from being over 10% in some international universities especially the old ones to over 90% on the recent ones at some GCC states in particular. It looks that the size of national student at international universities in the country is reversely proportional with per capita income. It is also, noted that there are many nationalities from various parts of the world in the international segment of students at international universities.

It looks, in some Arab states, that there are too many international universities, such as in UAE, Lebanon and Qatar and there are few as in Syria and Jordan or none as in Saudi Arabia, Algeria and Libya. This perspective is based on the number of national institutions and students in the international universities in each country or abroad. It is very challenging for most international campuses to provide their home institution quality, especially in some low per capita countries. To overcome the economic feasibility issue only soft disciplines that do not need costly labs and highly paid instructors are mostly offered. License for medical doctor degrees programs are limited, in some countries e.g. Jordan, to public universities. International higher education, as well as for-profit private higher education is growing steadily and some of its recent institutions are producing high-quality outcomes. They are able to qualify for various accreditation requisites and worked to fulfill respective professional agencies. In other hand, some poorly planned projects for establishing higher education institutions have to face difficulty and the major choices are self-restructuring, merging with other institutions or close down. Some Arab states, that do not have international universities, seem to prefer partnership and cooperation between national public and national private with international institutions.

REFERENCES

- Abouammoh, A. M. (2010). Status of Foreign Universities and Their Branches in Higher Education Systems in the Arab States. Report 417/2007, to be Published, CHERS, MoHE, Riyadh, Saudi Arabia.
- Abouammoh, A. M. (2004a, b). Foreign Universities and their branches in the developing countries. Riyadh NP, 8 and 14 July 2004.
- Sorti, Y. E. (2004). Educational commoditization in the Arab States. J. Coll. of Ed. UAE University, UAE, Abu Dhabi, 24, 183-210.
- UNESCO-OCED (2005). Guidelines for Quality Provision in Cross-border Higher Education. UNESCO, Paris, France.
- Websites of, formerly religious only, universities:
- Al Azhar University, <http://www.azhar.edu.eg/>
- Al-Zaytouna University on Tunisia, <http://www.uz.rnu.tn>
- Imam Mohammed bin Saud Islamic University, <http://www.imamu.edu.sa/sites/en/Pages/default.aspx>
- Saint-Joseph de Beyrouth in Lebanon, <http://www.usj.edu.lb/>
- Om Dorman Islamic University , <http://www.oiu-sd.com>

AN EXPLORATORY STUDY ON PRE-SERVICE TEACHERS' PERCEPTIONS OF THE DIFFERENCES BETWEEN KNOWLEDGE AND BELIEF: IMPLICATIONS FOR HIGHER EDUCATION

Chwee Beng Lee and Timothy Teo

Nanyang Technological University - National Institute of Education - 1 Nanyang Walk, Singapore 637616

ABSTRACT

A current trend of research in learning and instruction is to examine the roles played by belief and knowledge in learning. Our main purpose of this study was to understand how pre-service teachers perceived the relationships between knowledge and belief. The data in this study were collected from 153 pre-service teachers who completed a questionnaire. We reported important findings such as teachers' perceptions of knowledge and belief and discussed the implications for teacher training program.

KEYWORDS

Knowledge; belief; epistemic belief; pre-service teachers

1. INTRODUCTION

A current trend of research in learning and instruction is to examine the roles played by belief and knowledge in learning. Given the pivotal role of knowledge and belief in learning, there arose a need to specifically examine these two concepts as they are used interchangeably frequently (Boldrin & Mason, 2009). In recent years, few empirical studies (see Sinatra, Reynolds, & Jacobson, 2003; Boldrin & Mason, 2009; Maggioni, Riconscente & Alexander, 2006) have focused on understanding the distinction between knowledge and belief. However, these studies were mostly conducted in the western countries and less is known about the relationship between knowledge and belief in Asia. Alexander, Murphy, Guan and Murphy (1998) conducted a cross cultural comparison using samples of teachers from USA and Singapore and found that Singapore teachers were less inclined to perceive knowledge and belief as overlapping but more inclined to perceive belief as embedded within knowledge compared to their American counterparts. Hence, based on the differences, we were interested to pursue a similar line of inquiry as studies in this area involving pre-service teachers are rare and that the findings from the few empirical studies described earlier may not be broadly generalized outside of their countries due to cultural differences. Our purposes of this study were to examine how pre-service teachers perceive the relationship between knowledge and belief.

2. LITERATURE REVIEW

2.1 Belief and Knowledge

The concepts of belief and knowledge have been explored and debated in educational psychological and cognitive psychology (Boldrin & Mason, 2009). According to Alexander, Schallert, and Hare (1991), there was no distinction between knowledge and belief. Researchers like Chan (2001) regarded belief as nonscientific views or preconceptions. Despite the variations in defining knowledge and belief, knowledge is usually conceived as justified "true" belief, in the context of learning (Siegel, 1998), or a true reflection of reality, supported with objective, rational justifications (Southerland & Sinatra, 2003). In contrast, belief is

mostly thought to be personal truths about the world (Smith, Siegel & McInerney, 1995) which are subjective, intertwined with affect and not based on evaluation of evidence (Southerland & Sinatra, 2003).

2.2 Importance of Pre-Service Teachers' Perception on Belief and Knowledge

Chinn and Brewer (2001) commented that teachers do not consider students' distinction between knowledge and belief because they assume that students believe what they had learned. However, students may provide correct answers for assessment purposes but may not necessarily believe in what they have learned. Failing to distinguish what students know and what they believe may lead to ineffective instructions and lead to superficial understanding of the complex nature of learning. Duit, Widodo and Wodzinski (2007) conducted a video-study of German and Swiss lower secondary physics lessons and found that teachers possessed limited views about their students' learning.

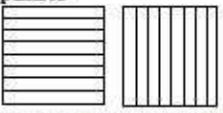
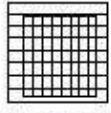
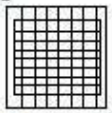
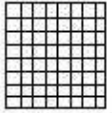
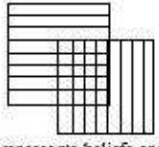
To be effective teachers who can plan effective instruction, pre-service teachers should understand students' views of knowledge and belief. In order to do this, teachers have to be aware of their own perceptions as this may affect the way the design and deliver lessons.




3. METHOD

Data were collected from 153 pre-service teachers who were enrolled in the one-year postgraduate diploma in education (PGDE) program at one of the teacher training institutions in Singapore in July 2009. The age range of the participants was 25 to 30 and all of them possessed at least a Bachelor's degree. Sixty-three percent of the participants were female students and 33.3% (51) of them were trained to teach in primary schools while the rest 66.7% (102) were trained to teach in secondary schools. These participants were invited to take part in the study and no course credits or other forms of reward were given. On average, each participant took approximately 30 minutes to complete the questionnaire.

3.1 Measure

The questionnaire we gave our participants consists of knowledge and belief items that was developed by Alexander and Dochy (1995) and later used by other researchers (Alexander et al. 1998; Boldrin & Mason, 2009; Maggioni et al. 2006). There were five graphical representations on the relationships between knowledge and belief (see figure 1). Option a represents knowledge and belief as unrelated entities (separate). Option b suggests that knowledge is a subset of belief (knowledge subsumption) whereas option c suggests that beliefs are embedded within knowledge (belief subsumption). Option d shows that knowledge and belief are two inseparable entities and option e describes knowledge and belief as partially overlapping entities. Option f provides a space for participants who would like to draw their own conceptions. We asked our participants to select one option and justify their reasoning by writing on the spaces provided below each of the representations. The nine categories of patterns of justifications emerged in Maggioni et al. (2006)'s study were used as a guiding framework for content analysis. An inter-rater reliability was computed between two independent coders and found to be high by conventional standard ($Kappa = .837, p < .001$) (e.g., Landis & Koch, 1977). The questionnaire was in English and no translation of terms was needed.

<p>Option A</p>  <p>This picture represents knowledge and beliefs as distinct and unrelated entities</p>	<p>Option B</p>  <p>This picture represents knowledge as a subset of beliefs</p>	<p>Option C</p>  <p>This picture represents beliefs is embedded within knowledge</p>
<p>Option D</p>  <p>This picture represents knowledge and beliefs as overlapping or inseparable</p>	<p>Option E</p>  <p>This picture represents beliefs and knowledge as partially overlapping entities that retain some unique qualities or dimensions</p>	<p>Option F (you are free to create your own. Write a sentence to explain your drawing)</p>

Key:  Belief  Knowledge  Belief and Knowledge

My choice is **Option** : _____

The **reason** for my choice is: _____

Figure 1. Graphical representations of the relationships between knowledge and belief

4. RESULTS

Significant differences were found among pre-service teachers' choices of the graphical representations [$\chi^2(5) = 176.89, p < .001$]. Similar to what was reported in other similar studies (Alexander, Murphy, Guan & Murphy, 1998; Maggioni, Riconscente & Alexander, 2006); we have more participants choosing option E (57%) as they considered knowledge and belief as overlapping entities. The responses for option B (knowledge subsumption) comprised 14.5% while 13.8% had chosen option C (belief subsumption). The percentage of participants who chose option A (separate) was 4% and only 2% of the participants had chosen to create their own drawing (option F).

We coded the responses (Figure 2) from the participants in this study into nine categories (refer to Maggioni et al., 2006). Majority of the pre-service teachers regarded knowledge and belief as two partially intertwined constructs (22.9%). There was 17.7% of pre-service teachers' justifications fall under category 4 (priority of knowledge) whereas there was 15.1 % thought that belief are starting point (category 5- belief as starting points) in the learning process. 9.9 % of pre-service teachers' justifications were categorized under category 9 (complete separation) and 10.9 % of the justifications were categorized as category 8 (knowledge as the only truth). 7.2 % of justifications were coded as category 3 (overall integration) and 6.7 % were categorised as category 6 (belief as cognitive self-awareness). Category 1 (Complete coincidence) and category 2 (Encompassing knowledge) were two categories with lowest percentages.

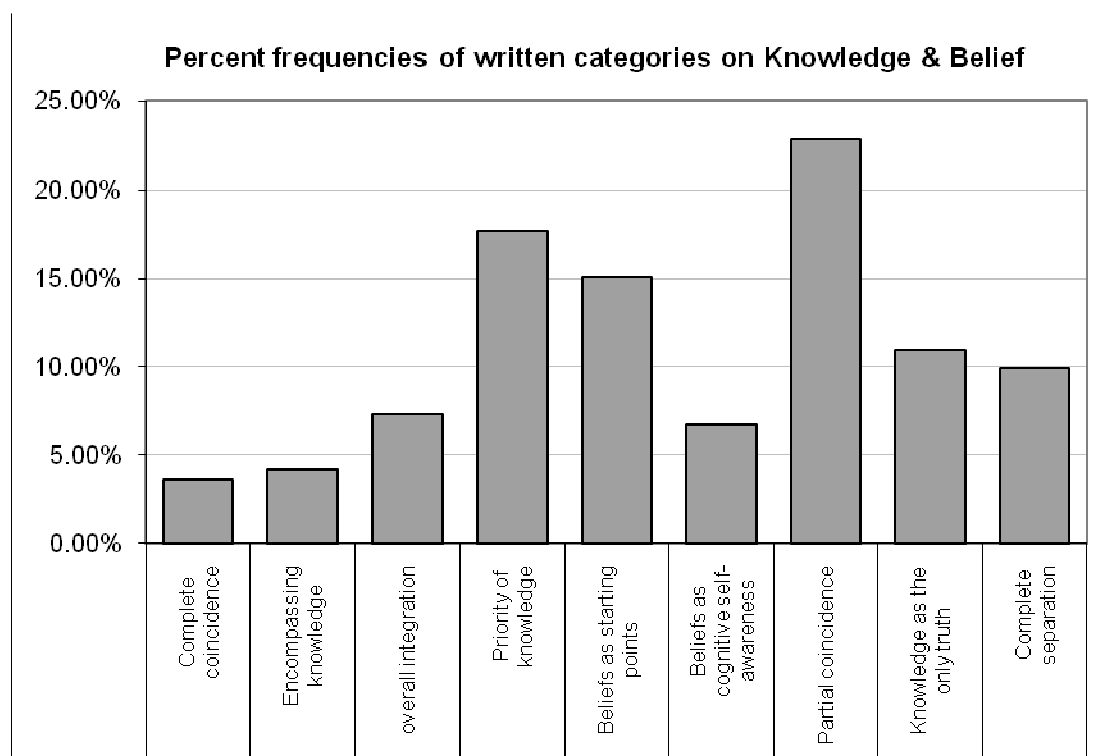


Figure 2. Frequencies (%) of written categories on knowledge and belief

5. DISCUSSION AND CONCLUSIONS

Our findings suggest that while our pre-service teachers shared some commonalities with the western samples in terms of perceiving the relationship between knowledge and belief, they were also unique in some ways. For instance, our sample has a higher percentage of pre-service teachers (14.5 %) viewing knowledge as a subset of belief compared to other samples reported in the similar studies. In terms of the percentage of those perceiving belief as embedded within knowledge, our pre-service teachers (13.8%) is close to the American sample (14%) reported in Maggioni, Riconscente & Alexander' study (2006). In terms of regarding knowledge and belief as inseparable constructs, our sample has the same percentage as those American students reported in Alexander, Murphy, Guan and Murphy's study (1998).

When we compare our participants with the Singapore teachers reported in Alexander, Murphy, Guan & Murphy's study (1998) which is the only similar study we have found, we noticed that our teachers are now less inclined to perceive belief as embedded within knowledge and they are more likely to perceive knowledge and belief as overlapping entities. Such a shift in may suggest that teacher educators should pay some attention to pre-service teachers' perception on the relationship of knowledge and belief in order to equip the pre-service teachers with the skills and knowledge to effectively guide their future students. In the knowledge age where learning is increasingly becoming more complex and the education landscape fast evolving, it is important to pay attention to the role that culture plays (Maggioni et al. 2006) as well as the changes in curriculum and instructions in the shaping of epistemological belief. At the higher institution such as our teacher training institute where we train hundreds of pre-service teachers from different races and some of them from foreign countries, it is imperative that we construct a thorough understanding on how these teachers perceive the relationship between knowledge and belief so that necessary intervention may help them to reconsider their epistemological belief. This perhaps prepares our pre-service teachers for their future instructional planning that considers the needs of their future students. As learning become more complex, teachers need to develop and acquire better understanding on the profiles of their students, in particular, what students perceive and believe about learning. Hence, we propose that teacher preparation

programs should provide and create opportunities for pre-service teachers to become aware of their own perceptions about knowledge and belief, and encourage them to critically examine their views on the relationship of knowledge and belief.

REFERENCES

- Alexander, P. A., Schallert, D. L., & Hare, V. C., 1991. Coming to Terms: How Researchers in Learning and Literacy Talk about Knowledge. *Review of Educational Research*, Vol. 61, pp. 315-343.
- Alexander, P. A., Murphy, P. K., Guan, J., & Murphy, P. A., 1998. How Students and Teachers in Singapore and the United States Conceptualize Knowledge and Beliefs: Positioning Learning within Epistemological Frameworks. *Learning and Instruction*, Vol 8, pp.97-116.
- Boldrin, A., & Mason, L., 2009. Distinguishing between Knowledge and Beliefs: Students' Epistemic Criteria for Differentiating. *Instructional Science*, Vol. 37, pp.107-127.
- Chan, C. K. K., 2001. Peer Collaboration and Discourse Patterns in Learning from Incompatible Information. *Instructional Science*, Vol. 29, pp.443-479.
- Chinn, C. A., & Brewer, W. F., 2001. Models of Data: A Theory of How People Evaluate Data. *Cognition and Instruction*, Vol.19, pp.323-393
- Duit, R., Widodo, A., & Wodzinski, C., 2007. Conceptual Change Ideas: Teachers' Views and Their Instructional Practice. In Vosniadou, S., Baltas, A., & Vamvakoussi, X. (Eds). *Reframing the conceptual change approach in learning and instruction* (pp.197-215). Amsterdam: Elsevier.
- Landis, J.R., & Koch, G. G., 1977. The Measurement of Observer Agreement for Categorical Data. *Biometrics*, Vol. 33, pp.159-174.
- Maggioni, L., Riconscente, M., & Alexander, P. A., 2006. Perceptions of Knowledge and Beliefs among Undergraduate Students in Italy and in the United States. *Learning and Instruction*, Vol. 16, pp.467-491.
- Smith, M., Siegal, H., & McInerney, J., 1995. Foundational Issues in Evolution Education, *Science and Education*, Vol. 4, pp.23-46.
- Siegel, H., 1998. 'Knowledge, Truth and Education', in D. Carr (Ed.), *Education, Knowledge and Truth: Beyond the Postmodern Impasse*, Routledge, London, pp. 19-36.
- Sinatra, G. M., Reynolds, R. E., Jacobson, T. (2003, April). Knowledge and beliefs: Empirical investigation of conceptual differences. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Southerland, S. A. & Sinatra, G. M. (2003). Learning about Biological Evolution: A Special Case of Intentional Conceptual Change. In G. M. Sinatra & P. R. Pintrich (Eds.). *Intentional Conceptual Change* (pp. 317 - 345). Mahwah, NJ: LEA.

HOW FAR AWAY HAVE WE MOVED FROM THE EDUCATIONAL LEGACY OF THE APARTHEID ERA? A CONCEPTUAL ANALYSIS OF CRITICAL ISSUES FACING STUDENTS AND TEACHERS OF AFRICAN DESCENT IN THE CONTEMPORARY SOUTH AFRICA.

Thidziambi Tshivhase-Phendla and Takalani Samuel Mashau
University of Venda - P/Bag X5050, Thohoyandou, 0970 South Africa

ABSTRACT

The paper reflects the way in which education was provided by the apartheid government. South African education system was divided into racial, ethnic and cultural background. The Whites minority government determined how education should be administered to other racial and ethnic groups. This paper uses Labaree's Three Education Goal Theory to examine how far we are in terms of addressing the imbalances and inequalities of the past as the new democratic government. While South Africa is almost 16 years away from the legacy of apartheid regime of divide and rule segregated education systems, the realities of millions of African students and educators remain unequal in the still unequal society. Thus, understanding the goals of education in the multicultural societies is a proponent of democratic education.

KEYWORDS

Apartheid education; Race; Ethnicity; Class; Educational goals; South African funding system

1. INTRODUCTION

To understand the present it is important for us to go back into the past that helped develop the present. Hence there is no South African story without the apartheid narrative which helps found the current democratic governance. Apartheid is defined as, "a legalized repression and exploitation of the black majority to regulate the destiny and fate of legalized discrimination" (Njobe, 1990, p. 44 Smith, 1992). It is a word which has come to be used to describe racial segregation, and hence, the system of government in South Africa based upon total supremacy of the white minority population.

The salient feature of education in South Africa was the differential pattern of education development for different groups along the lines of color, race, class, and ethnicity. On the one hand, whites received a very high level of education, which was comparable with the best in the industrialized world. On the other hand, black education was characterized largely by an inequitable allocation of resources, overcrowded classrooms, high dropout rates, and insufficient numbers of and poorly qualified teachers. Against the background of apartheid, the education system was divided into four main systems for four groups that is education for Whites, Indian, Coloureds, and Africans. For the white community, there was a system of free, and compulsory education, and for the black groups, that is, Africans, Indians, and Coloureds, education was neither free nor compulsory.

Apartheid education was generally considered by blacks to be inferior and designed to confine them to lower class occupations. There were differences even within black education, that is, Indian and Coloured education systems were more privileged to a degree higher than African education. These divisions served to entrench separate development in all aspects of life in South Africa. Consequently, it can be safely predicted that separate education will never result in equal development.

2. WHERE ARE WE IN THE NEW DEMOCRATIC SOUTH AFRICA?

The impact of the apartheid policies is still felt today especially in terms of race and class; ethnicity and language.

2.1 On Race and Class

Although the current form of funding has created platforms for redress of the past inequalities, it is still short of the translation to free education given that students are still expected to provide their own school uniforms, and these do not come cheap. School uniforms are compulsory and they cost a fortune to the majority of poor and unemployed African parents in the townships and informal settlement areas in the South Africa. On the other hand, white schools are still well resourced since they inherited the resources from the former regime.

Many of these “former white only” schools still receive support in forms of sponsorship and donations from the private sector, which are still in the hands of a few white people. There are a surging number of exclusive private schools which demand high tuition fees, where parents pay R 63 780-R66 090 per annum. One example is Beaulieu College in Johannesburg. As a result, access to these schools is limited to those who can afford these exorbitant fees, in particular, white parents. African students, especially in rural areas are still taught under trees. Those who are unfortunate enough, still learn in mud classrooms.

2.2 On Ethnicity and Language

Ethnicity and language are significant and still impact on access to quality of school in that Afrikaans schools, which are highly or heavily resourced, exclude black students by virtue of the use of Afrikaans as a medium of instruction. These schools are as a result used exclusively for Afrikaner children and a few black parents who can compromise and let their children learn in Afrikaans as medium of instruction.

African languages remain marginalized since are not developed for scientific inquiry and academic utilization. In the first two years after 1994, racially divided departments were restructured into one national and nine provincial departments. According to Chisholm (2005:205) there can be little doubt that there have been major changes since 1994.

2.3 Norms and Standards

According to (Government Gazette no.19347 of National Norms and Standards for school funding, 1998:2B 37) the norms and standards’ purpose are to effect redress and equity in school funding with a view of progressively improving the quality of school education, within a framework of greater efficiency in organizing and providing education services. The norms and standards indicate the method of distribution of funds according to certain categories (Patel, 2002:176, Chisholm, 2004).

2.3.1 Development of the Resource Targeting List

The Norms and Standards for Funding ensure that provincial departments of education share education funds amongst their schools according to principles of equality, equity and redress. Resource Target List shows all schools in the province from the poorest to the least poor. When deciding where each school appears on the list (the poorest to the least poor) there are two criteria which are equally important.

The first criterion is the physical condition of the school and overcrowding. The physical condition of the school refers to whether school buildings need repair, whether there are facilities such as toilets, running water, electricity and telephone and how many learners are there in the classroom. The second criterion is the relative poverty of the school community. How poor is the community that geographically surrounds the school and how poor is the community that is served by the school. All schools are grouped in ranks of five groupings known as quintiles. Based on their positions in the rank order list, schools are then allocated a per learner amount. The poorest quintile receives the most funding (35% of resources) and the least poor quintile receives only 5% of the available resources.

The question we ask is “how do we decide where each school appears on the list?” Since there are two criteria which make 100% of Resource Target List, i.e., physical condition of the school, facilities and

overcrowding (50%) and relative poverty of the school community (50%) which are equally important, then how accurate can we determine the poverty level of the community that surround the school? Certainly, there are schools in the middle-income areas attended by learners from very poor households. These families may live in shacks and have no running water or electricity; can we safely conclude that these learners are better off?

3. LABAREE'S THREE EDUCATIONAL GOAL THEORY

What does theory say about the role of education in our society? One of the main objectives of education is the capacity to deliver a democratic existence that guarantees basic political rights for all the citizens. In view of the foregoing discussion, we understand people's struggle to gain a scholarly education according to the three educational goals proposed by Labaree (1997), that is, democratic equality, social efficiency, and social mobility.

From the democratic equality approach to schooling, Labaree (1997) argues that: "democratic society cannot persist unless it prepares all its young with equal care to take full responsibility of citizenship in a complete manner. Schools must promote both effective citizenship and relative equality. Schools must prepare children to play constructive roles in a democratic society" (p.42). In contrast, Verwoerd's oppressive government of divide and rule had something totally different in mind for the education of black children in South Africa. Since the government was not founded under the ethos of democracy, it is not surprising that its education systems were neither created for equal citizenship nor for equal treatment. In fact, blacks in general were referred to as third class citizens in South Africa. And this belief is still reverberating in our contemporary existence.

At this point in our not so old democracy in South Africa, the most relevant question we should be asking is "How far have we moved from the ideology of third class citizens? If indeed we have, is it in principle or action? Better still, is it in theory or practices? Or is it in policy or implementation? Education's role is to "ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship" (Labaree, 1997, p.45). Labaree further argues that education should provide equal treatment for all people regardless of age, race, ethnicity and sex to reduce discriminatory practice in the classroom and that all students be held to the same high level of education, performance, and standards (p.45).

While the norms and standards' purpose are to effect redress and equity in school funding with a view of progressively improving the quality of school education, the question that we raise is "how far have we moved from Verwoerd's philosophy of divide and rule if we still find children taught under trees and in mud huts in the so called new South Africa especially in parts of Western Cape, Kwazulu-Natal and Limpopo Provinces? Is the new division moving away from race closer to class? Given that many of these "under the tree classrooms" are found in rural areas where the majority of Africans reside. Consequently, African students and educators are still subjected to racial and class segregation.

The second goal of education is social efficiency. Labaree (1997) says that education should prepare the young to carry out useful economic roles with competency for the economic well being of the country (p.46). Therefore, education is a public good designed to prepare workers to fill structurally necessary market roles. In the same light, schooling should provide people with skills that will enhance their productivity, to promote economic growth. As a result, "education is not just a moral matter or political correctness but a matter of good economic sense" (Labaree, 1997, p.47). In the South African context, while education was also a matter of good economic sense, in that it created subservient black citizens to meet the labor needs of the white government, education was mainly for political correctness more than for a moral issue. For instance, Verwoerd, from his famous statements, maintains "there is no place for him in the European community above the level of certain forms of labor" (Christie, 1986, p.12 & Molteno, 1986, p.92). Therefore, Bantu education was designed with a grand plan in mind, that is, to reflect the job market and to purposefully allocate participation in the unequal workforce.

According to Phendla (2009) new realities in the economic markets are that a few young African students are breaking the racial lines and starting to emerge as CEO's, Directors, but a huge number is still under skilled, jobless and unemployed (p. . In the mid-1990s whites owned and controlled 98% of the JSE, and now they own a little more than 50% (Financial Week Study, April 2005). While there is already visible progress regarding economic redress, it is no means an indication that blacks are approaching economic parity with

whites. The road towards economic equality is still a long and steep one. On a relative basis white males still hold greater power than other groups. They are still disproportionate in their share of the working and general population and in most decision-making positions. The latest training figures indicate that white men are still the biggest beneficiaries of training and skills development in both the private and the public sectors (Phendla, 2009).

The third educational goal is social mobility. Labaree (1997) and other scholars perceive social mobility as one of the objectives to be attained by education. Labaree maintains that, “education is a commodity, it provides individual students with competitive advantage in the struggle for desirable social positions. Education is seen as a private good designed to prepare individual for successful social competition for more desirable market roles” (p. 51). Seen from Labaree’s point of view, black schools failed to provide its students with educational credentials they needed in order to get ahead in the social structure and to compete with white students. The Bantu education system created inferior status and had a great impact on the political, social and economic survival of blacks in South Africa.

Labaree (1997) claims that social mobility means bottom up, to meet individual’s needs (unlike social efficiency which means top down and collective needs). Social mobility emphasizes individual status attainment. Benefits of education are for specific individuals and are selective and differential rather than collective and equal. Moreover, Labaree (1997) contends that while social mobility is a consumer’s commodity, it also treats education as a form of exchange value in contrast with the use value. The value of education is extrinsic, i.e. job, standards of living, financial security, social power and cultural prestige (p.55). In addition, Labaree (1997) asserts that educational value is not from knowledge symbolized but the kind of job that can be exchanged (p.55).

Expansion of Higher Education in our new democracy in South Africa has not necessarily translated into equity and access since it is not accompanied by proportional increase in numbers of Black graduates. Studies show that we have been successful in attracting students of diverse backgrounds; however, these gains do not translate into promotion of education and capacity development. Only a few small numbers of students finish their degrees on time. Furthermore, there are insufficient Black graduates with required skills in a number of strategic areas of development. Moreover, graduates attributes do not necessarily match employers’ needs (CHE, 2004).

These comments support the idea that education is not about knowledge students learn in school, but about the credentials they acquire there. Grades, credits, certificates, diplomas and degrees become the objects to be pursued. Higher qualifications meant increases in salary – economic advancement, higher social status, and recognition. Poverty should not breed poverty.

4. CONCLUSION

Given the foregoing realities, questions that sprung to our minds are: What significant role does education in our contemporary reality play to develop equal citizens? Closer to home, if students from the historical disadvantaged universities continue to study under adverse conditions with inferior quality of infrastructure, should we consider this provision of education equal, accessible, and does it yield equal benefits? If education is a fundamental democratic right in a democratic society, then how democratic is this democratic right in such a democratic society? This democratic right is enshrined in the Bill of Right, in terms of Section 29 of the Constitution of the Republic of South Africa.

Simply put, where do we place young African students in this democracy? Are they in the centre of the picture or on the periphery? How far can education under a tree provide equality for all citizens? While we do not provide definitive answers to the questions raised in this reflective conversation, nor, in truth would we be able to, our stance is that our role as educators, policy makers, politicians, academics and intellectuals is to provide access, equity, equality. In South Africa, the legacy of differences continues to characterize provision of our education. Given the persistent existence of whites in higher positions, it is easy to conclude that Africans are not there yet.

Finally, while one of the main objectives of education is the capacity to deliver a democratic existence that guarantees basic political rights for all the citizens, education reflects more instrumental features as a means to improving material living standards, i.e. alleviation of poverty, improved health, etc. As Labaree (1997) shows, “any healthy society needs an education system that helps to produce good citizens, good

workers, and good social opportunities. Preparing young people to enter into full involvement in a complex society is itself a complex task that necessarily requires educators to balance a variety of competing concerns, and the educational institutions that result from this effort necessarily are going to embody these tensions” (p.72).

REFERENCES

- CHE, 2004. *South African Higher Education in the First Decade of Democracy*. CHE, Pretoria
- Chisholm, L. 2005. The state of South Africa's schools. In: Daniel, J., Southall, R. & Lutchman, J. (eds) *State of the nation: South Africa 2004?*. Cape Town: HSRC Press.
- Chisholm, L. (ed.) 2004. *Changing class: Education and social change in post-apartheid South Africa*. Cape Town: HSRC Press.
- Christie, P. (1986). *The right to learn: The struggle for education in South Africa*. Johannesburg: Ravan Press.
- Financial Week Study, April 2005.
- Juta' *Education Law and Policy Handbook*. 2003. Cape Town. Juta and Co, LTD.
- Karlsson, J.; Mcpherson, G. & Pampallis, J. 2002. *A critical examination development of school governance policy and its implication for achieving equity*. (In Motala, E and Pampallis, J. eds. *Education and equity*). Sandown: Heinemann.
- Labaree, D.F (1997). Public goods, private goods: The American struggle over educational goals. *American Educational research Journal*, Vol 34, No. 1 (Spring, 1997, 39-81)
- Mabidi, N.F. Senior Manager: Expenditure Control in the Department of Education, Limpopo Province. Personal Communication, 24 April 2006, Polokwane.
- Molteno, F. (1986). The historical foundations of the schooling of Black South Africa. In P. Kallaway (Ed.). *Apartheid and Education: The education of Black South Africans*. Ravan Press: Johannesburg.
- Njobe, M.W. (1990). *Education for liberation*. Johannesburg: Skotaville Publishers.
- Patel, F. 2002. “Putting our money where our mouth lies”-Norms and standards for public school funding in South Africa-Empowered decentralization. (In *Education and decentralization*). Johannesburg: Gauteng Department of Education.
- Phendla, T (2008) “Women on the rise: Where are women in educational leadership positions in South Africa?” In *women leading education across the continents: Sharing the spirit, fanning the flame*. Edited by Helen C Sobehart. R & L Education.
- Smith, C. (1992). *Conflict in Southern Africa*. East Sussex: Wayland (Publishers) Ltd.

CHINESE INTERNATIONAL STUDENTS' IDENTITY NEGOTIATION: A COMMUNICATIVE PERSPECTIVE

Bin Ai

Wuhan University of Science and Technology - 430081 Hubei, China

ABSTRACT

As a consequence of globalization and the internationalization of higher education, Chinese students are now to be found throughout the world. They, as a cohort of people in another different culture, will experience a process of identity negotiation for obtaining a new identity in a new culture. However, identity negotiation is not an easy process in that culture, communication and many other factors are all involved. Moreover, other relevant factors like ideology, Chinese traditional cultures, language, and communication competence are also possible factors that could contribute to the construction of a new identity. In this essay the relationship between identity, culture and communication are explored in detail first. Then, some possible factors involved in the establishment of a new identity for Chinese international students are discussed. Hopefully, the paper will provide people with a greater insight regarding the difficulties experienced by Chinese international students. At the same time Chinese international students may be able to learn how to better integrate into a host culture, and build a new intercultural identity.

KEYWORDS

Chinese international students, identity negotiation, culture, communication

1. INTRODUCTION

Globalization 'involves the "phenomenology of contraction"—i.e. time and space appear to have been compressed in the quotidian experiences of our everyday lives' (Davis, 2008, p. 139), and it makes people feel their living space is smaller and smaller. The presence of globalization and the trend of higher education's internationalization make higher education institutes become more multicultural than at any other time in history. Meanwhile, the wide spread of English language as a lingua franca and the powerful influence of these English-speaking countries' economic, cultural and social development have greatly attracted international students. As such, these developed English-speaking countries have become the main destinations for Chinese international students. In fact, the past decades have witnessed China's ever-growing economy and thus many opportunities have been created by and for Chinese people. They now have a greater financial ability to support their children to study abroad. All these factors mentioned have given rise to the increasing total number of Chinese international students. As such, research into Chinese international students has become a heated issue for researchers, teachers and education administrators. Chinese international students' learning and living experiences in a host country have been considered from a lot of different perspectives, examples of which are identity and communication.

This paper aims to discuss Chinese international students' living and learning experiences from a perspective of the complicated negotiation of identity, which is based on culture and communication. Their identity negotiation difficulties in a host country, in fact, are a result of the conflicts of culture and communication impacting upon them. The analysis of Chinese international students' identity negotiation from the perspective of transcultural communication will help people better understand such a cohort's communication practice. Furthermore, as a large group of international students in a multicultural university, they cannot be ignored. Better understanding of Chinese international students' communication and identity negotiation will also help universities to achieve a better international education practice in the future.

2. IDENTITY, CULTURE AND COMMUNICATION

The conception of identity is widely explored. Simply, identity could be regarded as self but it is not always simply this. Examination of identity is a way to show the similarities and differences between self and others. As such personal identity is a reflection of self and it helps others to identify one from others. For human beings, one's identity construction is important in that 'all human behavior is ultimately motivated by the need to maintain one's identity' (Bracher, 2009, p. 24). The sense of obtaining one's identity will naturally become stronger when one leaves his/her familiar surroundings. Once the social and cultural contexts have changed, these changes will be subtly and gradually recognized, and then one's identity crisis will occur because he/she might feel uncomfortable and even feel rejection in a new cultural context. In other words, we could say that people are always seeking an identity in life in that identity is a project, and the construction of a new identity is also a process. However, the seeking of a new identity is usually not significant because people usually live in familiar surroundings and the sense of identity is often taken for granted. However, once an identity crisis occurs, people will find that the presence of self is not in a familiar surrounding and then the lack of the sense of identity will make people feel anxious and stressed and even lost. In this sense, 'maintaining this most fundamental (ego) identity, or sense of self, is our most basic need and the ultimate motivation behind all our actions, both individual and collective' (Bracher, 2009, p. 25). As such, identity negotiation, though it might be easily ignored by people when they are in a familiar context, is imbedded in everyone's life.

The construction of one's identity is closely related to one's culture. Culture is generally regarded as 'each group's or community's way of life and outlook on the world' (Alasuutari, 1995, p. 26). The concise concept implies that each group of people has their own particular culture and their tradition of looking at the objective world in a particular way. Clearly there are distinct differences in cultures for people from different groups. Bauman (1973, p. 17) points out that culture is deployed to 'account for the apparent differences between communities of people (temporarily, ecologically, or sociologically discriminated)'. The human universe consists of many different cultures and subcultures, and 'the culture of one group differentiates it from other groups, each of which has its "own" culture' (Inglis, 2005, p. 5). Thus, when one moves from one culture into another culture, he/she will experience cultural differences.

Moreover, culture is not just static and abstract cultural arts in that 'culture is ordinary' (Williams, 2002, p. 93). Culture is a kind of practice and it is 'a whole way of life' (Williams, 2002, p. 93) of a given group of people. The connection of culture to human's everyday life helps us reconfigure Chinese international students' learning and living experiences as a culture experience in a host country. In such a cultural practice, every Chinese international student's practice is a performance and a demonstration of their particular culture. Moreover, given the fact that they have changed the time and space of learning and living, their cultural practice will be influenced by many internal and external factors, and these factors will definitely bring about some influences upon their dynamic living practice.

The change of social space of Chinese international students' identity negotiation also will lead to the change of their habitus in a new cultural context. Habitus are 'generative principles of distinct and distinctive practices' and they are 'also classificatory schemes, principles of classification, principles of vision and division, different tastes' (Bourdieu, 1998, p. 8). Bourdieu regarded that 'all humans inherit dispositions to act in circumscribed ways' and they 'possess an inherited concept of society which they then modify, generating a new concept which is apt for their conditions and experiences' (Robbins, 2000, pp. 26-27). As a matter of fact, Chinese international students' learning and living experiences in a host country, or their everyday life in a host country, is both a cultural experience and a challenge of the change in their habitus. In identity negotiation they will encounter some events associated with an identity crisis. Their identity negotiation will also exist in the whole 'everyday life' of their stay in the host country because 'man must be everyday, or he will not be at all' (Lefebvre, 1991, p. 127). Clearly, Chinese international students' identity negotiation happens in their everyday communication practice when they are in a host culture.

It is well-known that culture and communication are closely related and mutually influenced. Communication is a way for human beings to send their messages as symbols so that they can interact with others. Rubin and Stewart (1998, p. 16) define human communication as 'the process through which individuals—in relationships, groups, organizations, and societies—respond to and create messages to adapt to the environment and one another'. Samovar and Porter (2004, pp. 17-19) also point out that 'communication is systemic' as each time the communication setting, location, occasion, time, number of

people and cultural setting are all different when communication occurs. Thus Chinese international student's communication in a host country is a process of message transmission in a different discourse given the fact that the environment and the people involved are different from the communication situation in their home country. Furthermore, culture itself is also influenced by communication. Regarding the relationship of culture and communication, Kress (1988a) points out that 'culture and communication are two sides of the same coin' and that 'they are different labels designed to name different aspects of the same complex set of structure and processes'. For him, culture is the label that refers to 'the set of practices that produce meanings and to the resultant objects of those practices' and 'human engagement in those practices, and to their effect on human beings acting together as a cultural group and a culture' and communication is the label that refers to 'those meanings, and their conscious or unconscious, deliberate or accidental exchange among members of a culture, or among members of closely connected cultural groupings—in society'. Another scholar Hall (1959, p. 186) even directly notes that 'culture is communication and communication is culture'. Therefore, Chinese international students' living and learning experiences are influenced by their home culture. Similarly, their living and learning experiences in a host country, in fact, are influenced by both the host culture and their home culture.

In addition, communication is also related to one's identity in that identity construction is conducted in the process of communication. Martin & Nakayama (2007, p. 205) point out that 'communication plays an important role in identity—identities are formed and expressed through communication'. Identity is not a static and fixed conception. Conversely, identity construction is a process. Barker (2008, p. 216) believes that 'identity is best understood not as a fixed entity but as an emotionally charged discursive description of ourselves that is subject to change'. Moreover, 'identity is subjective' (Abrams, O'Connor, & Giles, 2002). The construction of a new identity project is a process based on one's interaction and familiarity with a new social environment. In this process the quality and personality are internal motivations and contributors of identity project construction. Additionally, identity as a project is not so easy to build in that the construction of one's identity means that changes in the personality, culture and social elements of a person will occur in a host culture. To conclude, identity, culture and communication all are closely interwoven in one's everyday life. Chinese international students' identity negotiation as a process of transcultural communication with others is constructed in the process of acquiring both a new culture and language. Without an understanding of the culture and language of the host country, their new intercultural identity construction is impossible.

3. CHINESE INTERNATIONAL STUDENTS' IDENTITY CONSTRUCTION DIFFICULTIES

Though the process of a new identity construction is not easy, it is inevitable for Chinese international students when they are living in a host culture. In such a process, Chinese international students will encounter many tricky problems though people often regard 'identities as natural and take them for granted' (Barker, 2008, p. 255). In fact, whether a Chinese international student can successfully rebuild his/her new intercultural identity will be a key to determine whether he/she can successfully be accepted and integrated into a host culture. In other words, in such a process Chinese international students are attempting to acquire a new identity so that they can be integrated into the host country. However, it is not easy to be accepted into a new culture and obtain a new identity in a host country because of the influence of factors such as ideology, Chinese traditional cultures, language competence and communicative competence. These are all related to their intercultural identity negotiation in the host culture.

3.1 The Influence of Ideology on Identity Negotiation

Fairclough (1995, p. 14) notes that ideology is 'meaning in the service of power'. As such, ideology is a tool for the ruling class of a state. Althusser (2008, p. 17) argues that ideology exists in an apparatus and its associated practices and he also designates a series of institutions as 'ideological state apparatuses' (ISAs) such as the family, the education system, the church and communications, and so on. As such, ideology is a more effective method for the maintenance of ruling class power than physical force because by education each class is, practically provided with the ideology, required to fulfill its role in a class society. Furthermore, ideology plays an important role in the process of communication and identity negotiation because 'all

ideology hails or interpellates concrete individuals as concrete subjects, by the functioning of the category of the subject' (Althusser, 2008, p. 47). Chinese international students' performances and behaviors are influenced by ideology that has controlled them in the host universities. However, they have lived in Chinese ideology for a long time before they go abroad. In this sense, Chinese international students, ruled by their own education and the ideological state apparatuses of their home country for a long time, will encounter communicative hurdles when constructing their intercultural identity in a host university ruled by different education ideological state apparatuses. As such, when they are struggling to remove the previous ideological influence and enter another ideology for their new identity, the communicative process of identity negotiation is a complicated rebirth of their identity under the influence of two different ideologies because China's education ideological state apparatuses, once being accepted by Chinese students, will have a long-time impact on their performances, including their reconstruction of their new identity, even when they are in a host culture.

3.2 The Influence of Chinese Traditional Cultures on Identity Negotiation

Communication and culture are closely connected and one's communication is consciously or subconsciously influenced by one's cultural background. Chinese international students' identity negotiation as a process conducted through their communication in a host cultural context is also influenced by Chinese traditional cultures. Scholars such as Gao (2006), Lu (2002), Gao & Xiao (2002) and Hu & Grove (1999) have explored Chinese people's communicative cultures and their communicative characteristics. Generally three different Chinese traditional cultures Confucianism, Taoism and Buddhism influence Chinese people's communication, though the main power is often regarded as Confucianism. Lu (2002, p. 3) notes that the major Confucian moral philosophy includes *ren* (benevolent), *li* (rites), and *zhongyong* (the Middle Way), and he argues that 'the cultural force of Confucianism is so deeply rooted in Chinese collective consciousness that it continues to provide sense-making schemes and guiding principles for Chinese behaviors and socialization'. Chinese international students' long-time immersion in Chinese traditional cultures makes them feel their own communication conducted in a host culture is not highly appreciated. As a result, 'quality interaction with host nationals was difficult as some Chinese students felt upset and uncomfortable when they misunderstood and in turn were misunderstood by others and were unable to fully express their thoughts and feelings' (Zhang & Brunton, 2007). Some traditional Chinese culture has a negative influence upon Chinese international students' intercultural identity construction. For example, Chinese people's concern about their "face" will make Chinese international students fear 'losing their face' in an open place. To protect their "face" some Chinese international students choose to keep silent and even keep away from others. Clearly insufficient communication will make them feel less confident and encounter more difficulties in constructing their new identity.

3.3 English Language and Identity Negotiation

Chinese international students' language could be one of the biggest problems when they are learning and living in a host culture. In most tertiary educational contexts English language is naturally adopted as a teaching medium. For Chinese international students, an IELTS or TOEFL score is usually the only officially accepted means to test an international student's language proficiency. Thus, the test score of the examination usually is regarded as one's language competence and even communication competency. However, the accuracy of the test system, including the degree of how accurate such a test could match their academic English use in an authentic tertiary education context, is still an issue for Chinese international students. Also, in Chinese international students' daily life in a host culture the challenge of using English to communicate with host students is still pressing even though they have passed the IELTS or TOEFL test.

Another point we should never ignore is that language itself is a representation of culture. Thus learning English itself should be a natural process of learning a culture. Kress (1988b) regards 'language as social practice' and argues that language is 'more and other than words and sentences', and it is 'an event, a part of social event, and the outcome of that social event'. Language, as a representation of culture and a system of symbols, is deeply influenced by culture. As such, even if Chinese international students do have a good command of English language, they might still need to learn more about the English culture hidden under

language itself. Chinese international students' identity negotiation is hard because they might have not only language difficulties but also cultural difficulties involved in their communication practice.

3.4 Transcultural Communication Competence and Identity Negotiation

Given the fact that identity is constructed in a process of communication, Chinese international students' intercultural identity construction will partly depend on their transcultural communication competence. Ting-Toomey (1999, p. 261) uses transcultural communication competence to refer to 'a transformation process connecting intercultural knowledge with competent practice'. The competence is based on the knowledge of the host culture and communicative practice. Some people consider that Chinese international students' language ability is equal to their communication ability and thus they pay much attention to language itself but don't link English language to English culture and communication practice. For example, Shen (2007) points out that in China's English education arena more concern is attached to the English language internal structure; meanwhile, the ability to choose available communication skills to accomplish intercultural interpersonal communication is often neglected. Some Chinese students simply assume that 'using English primarily is a process of learning to correctly translate English sentences to Chinese and vice versa' (Shen, 2007). As such, some Chinese international students don't have a sense of transcultural communication awareness in that they are just concerned about whether they can translate the language itself but ignore the discourse of English language use in real life context. Without transcultural communication ability, they will also have difficulties in identity negotiation.

4. CONCLUSION

As members of one of the largest group of international students, Chinese international students' identity negotiation in a host country has a great influence upon their learning and living experiences. The identity crisis in a host country could make students feel uncomfortable, uneasy, and even lose their confidence in their learning, living and communication with others. Ironically, their intercultural identity is based on their interaction and communication with others. Being a party of 'others', the host universities also play a role in Chinese international students' identity negotiation which occurs under the identity of the universities. Marginson & Considine (2000, p. 244) assume that university identity has 'three related dimensions: local, provincial/national and global'. The dimension of 'being global' will be a challenge for any university's identity and it is also constructed in the process of interaction with international students. Hence, to help Chinese international students construct their new intercultural identity is also a process to help the host universities construct their own global identity.

To conclude, influenced by the factors mentioned before, it is not easy for Chinese international students to construct a completely new identity in a host country. However, if Chinese international students could have a better understanding of the host culture before they depart, it would be easier for them to become an 'insider' rather than remaining an 'outsider' even after they have lived in the host culture for several years. In today's global world, the compressed time and place results in people losing themselves. The frequent change of time and space make people feel hard to match their fluid identity. However, Chinese international students' identity negotiation as a process of interacting with others will be helpful for them to achieve a better perception of their host culture. Therefore, their successful identity negotiation will become a more fruitful learning experience in the host country.

REFERENCES

- ABRAMS, J., O'CONNOR, J. & GILES, H. 2002. Identity and intergroup communication. In: GUDYKUNST, W. B. (ed.) *Cross-cultural and intercultural communication*. Thousand Oaks, CA: Sage Publications, Inc.
- ALASUUTARI, P. 1995. *Researching culture: Qualitative method and cultural studies*, London, SAGE publications Ltd.
- ALTHUSSER, L. 2008. *On ideology*, London, Verso.
- BARKER, C. 2008. *Cultural studies: theory and practice*, London, SAGE Publications Ltd.

- BAUMAN, Z. 1973. *Culture as praxis*, London and Boston, Routledge & Kegan Paul.
- BOURDIEU, P. 1998. *Practical reason: On the theory of action*, Cambridge, Polity.
- BRACHER, M. 2009. *Social symptoms of identity needs: Why we have failed to solve our social problems and what to do about it*, London, Karnac Books.
- DAVIS, M. 2008. Bauman on Globalization - The Human Consequences of a Liquid World. In: JACOBSEN, M. H. & PODER, P. (eds.) *The Sociology of Zygmunt Bauman: Challenges and Critique*. Hampshire: Ashgate Publishing Limited.
- FAIRCLOUGH, N. 1995. *Critical discourse analysis: The critical study of language*, London, Longman.
- GAO, G. 2006. Core concepts and organizing principles of Chinese communication and identity. *China Media Research*, 2, 1-14.
- GAO, G. & XIAO, X. S. 2002. Intercultural/interpersonal communication research in China: A preliminary review In: JIA, W. S., LU, X. & HEISEY, D. R. (eds.) *Chinese communication theory and research: reflections, new frontiers, and new directions*. Westport, CT: Ablex Publishing Corporation.
- HALL, E. T. 1959. *The silent language*, New York, Anchor Books/Doubleday.
- HU, W. & GROVE, C. L. 1999. *Encountering the Chinese: A guide for Americans*, Yarmouth, Maine, Intercultural Press, Inc.
- INGLIS, D. 2005. *Culture and everyday life*, London, Routledge.
- KRESS, G. 1988a. Communication and culture In: KRESS, G. (ed.) *Communication and culture: An introduction*. NSW: New South Wales University Press.
- KRESS, G. 1988b. Language as a social practice. In: KRESS, G. (ed.) *Communication and culture: An introduction*. NSW: New South Wales University Press.
- LEFEBVRE, H. 1991. *Critique of everyday life*, London, Verso.
- LU, X. 2002. Chinese Culture and Communication: Diverse Contexts and Comparison with the West. In: LU, X., JIA, W., S. & HEISEY, D. R. (eds.) *Chinese communication studies: Contexts and comparisons*. Westport, CT: Ablex Publishing
- MARGINSON, S. & CONSIDINE, M. 2000. *The enterprise university: Power, governance, and reinvention in Australia*, Cambridge, Cambridge University Press.
- MARTIN, J. N. & NAKAYAMA, T. K. 2007. *Intercultural communication in contexts*, New York, McGraw-Hill.
- ROBBINS, D. 2000. *Bourdieu and culture*, London, Sage Publications Ltd.
- RUBIN, D. & STEWART, L. P. 1998. *Communication and human behavior*, Boston, Allyn & Bacon.
- SAMOVAR, L. A. & PORTER, R. E. 2004. *Communication between cultures*, Belmont, CA, Wadsworth
- SHEN, Z. H. 2007. Teaching intercultural communication in a Chinese perspective. In: SHI-XU (ed.) *Discourse as cultural struggle*. Hongkong: Hong Kong University Press.
- TING-TOOMEY, S. 1999. *Communicating across cultures*, New York, The Guilford Press.
- WILLIAMS, R. 2002. Culture is ordinary [1958]. In: HIGHMORE, B. (ed.) *The everyday life reader*. London: Routledge.
- ZHANG, Z. & BRUNTON, M. 2007. Differences in living and learning: Chinese international students in New Zealand. *Journal of Studies in International Education*, 11, 124-140.

STRATEGIC DECISION MAKING PROCESSES IN UNIVERSITIES

Emilio Rodríguez-Ponce*, Liliana Pedraja-Rejas* and María Elena González Plitt**

**Universidad de Tarapacá - General Velásquez, 1775. Arica - Chile*

***Universidad de La Frontera - Francisco Salazar 01145. Temuco - Chile*

ABSTRACT

Pressure across universities to succeed in an atmosphere of constant, systematic and uninterrupted change has brought to the fore the increasing importance of strategic decision-making as a crucial element for competitive advantage. However, empirical evidence shows that around 50% of decisions end in failure (Nutt, 1999). An empirical study was carried out among a multiple cases study in Chilean's universities to test the relationship between the quality of decisions and a set of variables that define how top management teams adopt strategic decisions. The findings are worthy of note since, on the whole, the explanatory capability of variables such as rationality, politicization, conflict, flexibility, and procedural justice among top management are determinants of the quality of strategic decisions.

KEYWORDS

Strategic decision-making, rationality, politicization, conflict, flexibility and procedural justice.

1. INTRODUCTION

Strategic decisions are a crucial issue in universities given that they manifestly express long-term choices that involve significant portions of a organization's resources, the efforts of a large number of people and functions, and because their effects can have a major impact on the survival and growth of universities.

Better decisions improve effectiveness into universities. Certainly, there is empirical proof of a significant correlation between the quality of strategic decisions, at the corporate level, and the effectiveness of organizations (Hiller and Hambrick, 2005; Arendt et al., 2005). Consequently, the quality of the strategic decisions adopted is crucial for the success of organizations. However, around 50 percent of decisions fail in different types of organizations (Nutt, 1999). Decision-making is no easy task; moreover, empirical evidence shows that the average quality of the decisions adopted, in samples from tens and hundreds of organizations, only attain average scores that –in statistical terms– are far from optimum or desirable levels (Rodríguez-Ponce and Pedraja-Rejas, 2007).

The traditional view on decision-making has centered on studying full rationality in contrast to limited rationality; politicization and power in decision-making; and the structuring or non-structuring of the decision-making process (Eisenhardt and Zbaracki, 1992). However, in recent decades, a series of empirical research studies have been developed which prove the importance of a series of variables in the decision-making process, in addition to rationality and politicization. This research study advances in the state-of-the-art because it undertakes a joint consideration of the impact of rationality, politicization, conflict, flexibility, and procedural justice on the quality of strategic decisions. In this same sense, the study attempts to identify imperatives to be considered by top management teams in adopting strategic decisions.

In this context, the purpose of this research study can be summarized as follows: to verify whether rationality, politicization, conflict, flexibility, and procedural justice in decision-making at top management level are variables that have a significant effect on the quality of the strategic decisions adopted in universities and to create a series of practical implications regarding strategic decision-making, providing guidance for top management behavior in the process of selecting strategies in universities.

2. STRATEGIC DECISION MAKING

In the knowledge society, decisions are the major source of competitive advantage (Cool, 1998). Strategic decision-making provides an opportunity to create and share knowledge, because it makes it possible to identify the roads that lead to corporate success. However, the theoretical development of this subject is still in its initial stages, since there are no generally accepted premises for conducting decision-making in such a way as to guarantee quality and success once decisions are implemented. Moreover, empirical evidence shows that around 50% of decisions end in failure (Nutt, 1999).

In this context, Pedraja-Rejas et al. (2006) point out the importance of behavior variables among top management teams in the decision-making process. The authors conducted a theoretical study which showed that factors such as rationality, politicization, conflict, flexibility and procedural justice employed by top management teams, determine the way that the decision-making process develops and, consequently, how these variables affect the quality of the decisions adopted.

However, pre-existing research on decision making has considered partial sets of variables and dimensions instead of undertaking a comprehensive analysis of the diversity of factors that underlie the development of organizational strategies.

2.1 Rationality

The rationality that underlies decisions can be defined as the measure which reflects the intention to choose the best option for achieving specific objectives in a given situation. Rationality is a determining factor—although not the only one—in terms of the quality and success of the chosen alternative.

The first studies on the rationality of decision-making made it clear that: organizations are affected by conflicts of interest; rationality is limited instead of complete, and more local than comprehensive; and that satisfaction is a criterion that often prevails over optimization in the decisions adopted (e.g. Cyert and March, 1963; Allison, 1971). Thus a new series of models have attempted to link rationality in the decision-making process to corporate performance (e.g., Fredrickson and Mitchell, 1984; Fredrickson and Iaquinto, 1989). These two studies showed that rationality is desirable in stable environments but that it has a negative effect in unstable environments.

However, Eisenhardt and Bourgeois (1988), and Bourgeois and Eisenhardt (1988) arrived at results that are inconsistent with the above because they discovered that rationality is desirable in high-velocity environments, i.e. in unstable environments.

Papadakis (1998) and Miller, Burke and Glick (1998), hold that rationality has a positive influence on the organization's performance. Miller, Burke and Glick, suggest that there is a negative relationship between cognitive diversity and the degree of rationality, although the degree of rationality positively affects the organization's profitability.

Elbanna and Child (2007) developed an integrated model of strategic decision-making rationality involving three factors: decision, environmental and organization characteristics that could explain—to varying degrees—the rationality involved in a strategic decision process.

Therefore, based on empirical evidence, there are no models capable of predicting the impact of rationality on corporate results for every case. Thus, it seems more feasible to assess the effects of rationality on the quality of strategic decisions, (Rodríguez-Ponce, 2007a).

2.2 Politicization

Politicization, indicates the degree to which decision-making responds to political reasons or to the influence exerted by interest groups or coalitions according to specific preferences (Papadakis et al., 1998).

This is a major variable in the decision-making process (Eisenhardt and Zbaracki, 1992; Dean and Sharfman, 1993). It is manifested through a series of tactics such as *lobbying*, withholding information, or agenda manipulation. Precisely, Eisenhardt and Bourgeois (1988) and Pfeffer (1992) argue that political behavior leads to negative results for the organization.

2.3 Conflict

Conflict is another widely —albeit partially— behavior variable studied among top management. Conflict is the degree to which clashing cognitive or affective positions exist among those responsible for adopting decisions (Amason, 1996).

Studies show that the conflict of ideas is an important variable in the decision-making process and that there is evidence of its stronger impact compared to consensus approaches (e.g. Schweiger and Sandberg, 1989). Thus, several studies have emphasized the positive effects of cognitive conflict for making and implementing decisions. They have also shown the negative impact of affective conflict on results in the decision-making process (Chatman et al., 1998; Jehn, 1995; and Amason, 1996).

2.4 Flexibility

An additional behavior variable is the cognitive flexibility with which top management executives adopt decisions. Flexibility is the degree to which decision-makers explore new ideas or assumptions in this process, (Dean and Sharfman, 1997).

Cognitive flexibility in decision-making is linked to the strategic flexibility of an organization (Combe and Greenly, 2004). Flexible organizations are capable of identifying significant changes in the environment and, consequently, they can allocate resources to new courses of action in response to such changes (Shimizu and Hitt, 2004). Indeed, the cognitive style employed by leaders and their ability to propose better quality decisions based on new information is a decisive factor for the success of organizations. Flexibility makes it possible to open up to new options in the decision-making process.

2.5 Procedural Justice

Lastly, justice in strategic decision-making processes is a management behavior variable. It started being taken into account in the 1990s as a crucial aspect to assess the success of the options adopted. Procedural justice is linked to the degree to which dynamic decision-making processes are perceived as appropriate by the parties involved (Kim and Maugborne, 1993).

In this sense, procedural justice is an integrative variable that simultaneously takes into account participation and the participants' views before and after adopting a decision (Kim and Mauborgne, 1993; Cool, 1998). Perceptions on the degree of procedural justice have a bearing on commitment, trust, social harmony and satisfaction with results (Kim and Maugborne, 1993; Korsgaard et al., 1995; Sapienza and Korsgaard, 1996).

2.6 Decision Quality

Finally, the quality of decisions can be measured from different perspectives. However, a high number of research studies emphasize the rigorosity of the decision, the number of alternatives generated, the quality of the decisions adopted, the achievement of objectives and the development of strategic value as basic elements for evaluating the quality of the decision adopted (Hollenbeck et al., 1998; Dean and Sharfman, 1996; Amason, 1996; Rodríguez-Ponce, 2007a; 2007b; Pedraja-Rejas et al., 2008a, 2008b) and, consequently, this is the analytical approach that shall be used in this research study.

3. METHODS

The case study research strategy is most appropriate to meet article objectives. Specifically, to identify the requirements to be met by senior management team to carry out successful strategic management processes in institutions of higher education is essential: (Yin, 1994)

- Analyze a significant set of highly complex causal relationships which also involve a significant number of participants.

- Analyze the strategic decision process in its own context, ie the place in which it occurs or develops.
- Explore events, situations, and perceptions of the participants, not likely to be reduced to a survey or questionnaire.
- Integrate a set of complex relationships between variables which can be causal ambiguity.
- Avoid the omission of relevant and latent variables are not identifiable from the theoretical study. In this context, four case studies in depth were analyzed, looking for institutions that they had high and low relative performance in the process of institutional accreditation, carried out from 2007. Thus, it was guaranteed the possibility of theoretical and literal replication. In each case, select a strategic decision recently implemented, its success or failure could be measured by the principals involved in the case.

4. FINDINGS

The universities were ranked by the quality of the decisions adopted, ordered from best to worst quality of the decision, according to the evaluation of top managers themselves. Subsequently, was evaluated the decision-making process, considering variables such as: rationality, politicization, cognitive conflict, affective conflict, flexibility, and justice procedural. Thus, for each of these variables were evaluated the degree or extent that was present in the process. Table 1 shows these aspects.

Table 1. Relationship between quality decision and strategic decision process (Source: Field research)

Decision / Quality	Very high quality of decision	High quality of decision	Moderate quality of decision	Low high of decision
Rationality	<i>Very High</i>	<i>High</i>	<i>High</i>	<i>Low</i>
Politicization	<i>Very Low</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>
Cognitive conflict	<i>Moderate</i>	<i>High</i>	<i>Low</i>	<i>Low</i>
Affective conflict	<i>Very Low</i>	<i>Moderate</i>	<i>Moderate</i>	<i>High</i>
Flexibility	<i>Very High</i>	<i>Very High</i>	<i>High</i>	<i>Moderate</i>
Justice procedural	<i>Very High</i>	<i>High</i>	<i>Moderate</i>	<i>Low</i>

Note that to achieve high quality in the decision will require very high levels of rationality. Even, high levels of rationality, does not guarantee high quality of decisions. For example, these cases studies, it shows you can have high level of rationality and only a moderate quality of the decision. Moreover, require low or very low levels of politicization in achieving high quality decisions in universities.

Cognitive conflict is seen as very positive for the decision-making, but this study suggests that moderate levels of cognitive conflict are sufficient to achieve high quality in decisions. The point is that the affective conflict is essentially dysfunctional and must be reduced to a minimum in the strategic decision process into universities. Only very high levels of flexibility are associated with high levels of quality in decisions. However, procedural justice can be high or very high to achieve high quality decision

5. CONCLUSION

This research study has a series of practical implications for top management teams in terms of improving the quality of decisions in universities:

High levels of rationality are essential for the quality of the decision. This means obtaining thorough information prior to generating, analyzing and evaluating possible alternatives; conducting an analysis and a rigorous evaluation of potential alternative decisions; and employing analytical criteria rather than intuition.

Politicization in decision-making should be kept to a minimum. This means avoiding the existence of interest groups or coalitions in the process and reducing negotiations among the former. Furthermore, it is advisable to minimize the use of tactics intended to favor one group to the detriment of another.

Cognitive conflict should be encouraged in a moderate level. Discussions should be broadened to include many different ideas, including a review of issues from different approaches and perspectives, and the expression of different opinions.

Affective conflict must be kept to a minimum, by reducing friction among participants in the decision-making process, avoiding personality clashes among members of the top management team, and preventing high levels of tension among decision-makers.

Flexibility in decision-making should be encouraged. This includes the possibility of regularly including new information in the decision-making process, accepting original ideas, generating creative participation among members of the management team and reconsidering initial ideas and points of view.

Decision-making should take place in a context of procedural justice which means that participants should be allowed to reject ideas proposed by others, opinions expressed by participants should be given due consideration by the leader, participants should understand the reasons why some ideas prevail over others in the final decision adopted, and participants should be aware of what is expected of them and their rights before, during and after the decision is made.

The research study shows that, in order to advance in the state of the art, an integrative approach needs to be generated, to allow for significant explanations of the variables included in the study. In this regard, a series of research opportunities open up as a result of this study.

Indeed, the research study shows the joint impact of the decision-making process on the quality of decisions; nevertheless, the study does not analyze the possible causal relations and interactions that may exist within the variables that form the decision-making process.

Future research should not only consider a joint analysis of strategic decision-making processes but also that it is necessary to study the potential relationship among the different variables that are part of strategic decision-making processes. Finally, the nature and magnitude of the impact produced by the design and implementation of strategic decisions on the effectiveness of organizations needs to be understood.

ACKNOWLEDGEMENT

The authors would like to thank to the National Commission of Sciences and Technology CONICYT Chile for their support through the project FONDECYT 1090116.

REFERENCES

- Allison, G (1971). The essence of decision: Explaining the Cuban missile crisis. Boston: Little, Brown and Company.
- Amason AC, Thompson KR, Hochwarter WA and Harrison AW (1995) Conflict: An important dimension in successful management teams. *Organizational Dynamics*, 24(2), 20-35.
- Amason, A (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams, *Academy of Management Journal*, 39 (1), 123-148.
- Arendt L, Priem R and Achidi Ndofo H (2005). A CEO-Adviser model of strategic decision making, *Journal of Management*, 31 (5), 680-699.
- Bourgeois L and Eisenhardt, K (1988). Strategic decision processes in high velocity environments: Four cases in the microcomputer industry, *Management Science*, 34, (7), 816-835.
- Chatman J, Polzer J, Barsade S and Neale M (1998) Being different yet feeling similar: The influence of demographic composition and organizational culture on work processes and outcomes, *Administrative Science Quarterly*, 43: 749-780.
- Cool K (1998). Commentary on procedural justice, strategic decision making, and the knowledge economy, *Strategy Management Journal*, 19 (4), 339-341.
- Cyert R M and March J G (1963). A behavioral theory of the firm, Prentice-Hall, Englewood Cliffs, NJ.
- Dean J and Sharfman M (1993). The relationship between procedural rationality and political behavior in strategic decision making, *Decision Science*, 24 (6), 1069-1083.
- Dean JW and Sharfman MP (1996). Does decision process matter? A study of strategic decision-making effectiveness, *Academy of Management Journal* 39(2): 368-396.

- Dowlatshahi S (2005). Strategic success factors in enterprise resource-planning design and implementation: a case-study approach, *International Journal of Production Research*, 43 (18), 3745-3771.
- Eisenhardt K (1999). Strategy as strategic decision making, *Sloan Management Review*, 40 (3), 65-73.
- Eisenhardt K and Bourgeois L (1988). Politics of strategic decision making in high velocity environments: Toward a midrange theory, *Academy of Management Journal*, 32(3), 543-576.
- Eisenhardt K and Zbaracki M (1992). Strategic decision-making, *Strategic Management Journal*, Winter special issue, 13, 17-37.
- Elbanna S and Child J (2007). The influence of decision, environmental and firm characteristics on the rationality of strategic decision-making, *Journal of Management Studies* 44(4), 561-591.
- Fredrickson J and Iaquinto A (1989). Inertia and creeping rationality in strategic decision processes, *Academy of Management Journal*, 32 (4), 516-542.
- Fredrickson J and Mitchell T (1984). Strategic decision processes: Comprehensiveness and performance in an industry with an unstable environment, *Administrative Science Quarterly*, 27, pp. 399-423.
- Hiller N and Hambrick D (2005) Conceptualizing executive hubris: the role of (hyper-)core self-evaluations in strategic decision-making, *Strategic Management Journal*, 26 (4), 297-319.
- Hollenbeck J, Ilgen D, LePine J, Colquitt J, (1998) Extending the Multilevel Theory of Team Decision Making: Effects of Feedback and Experience in hierarchical teams. *Academy of Management Journal*, 41 (3), 269-282.
- Jehn K, Chadwick C and Thatcher S (1997). To agree or not to agree. The effects of value congruence, individual demographic dissimilarity, and conflict on workgroup outcomes *Journal of Conflict Management* 8 (4): 287-306.
- Jehn, K (1995). A multimethod examination of the benefits and detriments of intragroup conflict, *Administrative Science Quarterly*, 40 (2): 256-282.
- Kim WC and Mauborgne R (1993). Procedural justice attitudes and subsidiary top management compliance with multinational's corporate strategic decisions, *Academy of Management Journal*, 36 (3): 502-526.
- Korsgaard M, Schweiger D and Sapienza H (1995). Building Commitment, Attachment, and Trust in Strategic Decision-Making Teams: The Role of Procedural Justice. *The Academy of Management Journal*, 38 (1): 60-84
- Miller CC, Burke LM and Glick WH (1998). Cognitive diversity among upper-echelon executives: Implications for strategic decision processes, *Strategic Management Journal*, 19(1): 39-58.
- Nutt P (1999). Surprising but true: Half the decisions in organizations fail, *Academy of Management Executive*, 13 (4): 75-90.
- Papadakis V (1998). Strategic investment decision processes and organizational performance: an empirical examination, *British Journal of Management* 9 (2): 115-132.
- Papadakis V, Lioukas S and Chambers D (1998). Strategic decision making processes: The role of management and context, *Strategic Management Journal*, 19: 115-147.
- Pedraja-Rejas L; Rodríguez-Ponce E (2008a). Estudio comparativo de la influencia del estilo de liderazgo y la congruencia de valores en la eficacia de empresas privadas e instituciones públicas. *Interciencia*. 33(1), 8-13.
- Pedraja-Rejas L; Rodríguez-Ponce E (2008b). Estilos de liderazgo, gestión del conocimiento y diseño de la estrategia: un estudio empírico en pequeñas y medianas empresas *Interciencia*, 33(9), 651-657.
- Pedraja-Rejas L, Rodríguez-Ponce E and Rodríguez-Ponce J (2006). Liderazgo y decisiones estratégicas: una perspectiva integradora. *Interciencia* 31 (8): 577-582.
- Pfeffer J (1992). Understanding power in organizations, *California Management Review* 34(1): 29-50.
- Rodríguez-Ponce E (2007a). Estilos de liderazgo, toma de decisiones estratégicas y eficacia: un estudio empírico en pequeñas y medianas empresas, *Interciencia*. 32 (8), 522-528.
- Rodríguez-Ponce E (2007b). Gestión del conocimiento y eficacia de las organizaciones: un estudio empírico en instituciones públicas. *Interciencia*. 32 (12), 820-826.
- Rodríguez-Ponce E, Pedraja-Rejas L (2007). Efectos e implicaciones de las decisiones estratégicas en las instituciones universitarias. *Interciencia* 32: 593-600.
- Sapienza H and Korsgaard M (1996). Procedural justice in entrepreneur-investor relations, *Academy of Management Journal*, 39 (3): 544-574.
- Schweiger D and Sandberg W (1989). The utilization of individual capabilities in group approaches to strategic decision making, *Strategic Management Journal*, 10: 31-43.
- Shimizu K and Hitt M (2004). Strategic flexibility: organizational preparedness to reverse ineffective strategic decisions. *Academy of Management Executive*, 18 (4): 45-59.

AN INTERNATIONAL PHOTOGRAPHIC EXCHANGE, UNIVERSITY FOR THE CREATIVE ARTS UK, WITH NATIONAL INSTITUTE OF DESIGN, INDIA

Professor Anna Fox & Natasha Caruana, MA (RCA)
University of the Creative Arts, Farnham, UK.

ABSTRACT

A progress review of a new Dual Award: Post Graduate Diploma/MFA Photography, a full-time, two-year programme delivered collaboratively by The University for the Creative Arts, UK and the National Institute of Art and Design, India. A primary objective of the partnership was to enable students to investigate and gain insight into cultural difference. In 2008/09 two cohorts of learners participated in a month-long exchange in the partner institution. A number of the students from both countries became interested in cultural identity and independent interaction within their new learning environment; new shared knowledge and understanding between their beliefs, attitudes, personalities and life experiences were explored and expanded on. The next phase of the project is to ensure that the outcomes of the exchange are critically analysed in a framework that will test and evaluate the outcomes of the programme through a research methodology addressing how the consequences and contrasts of the exchange transformed their learning.

KEYWORDS

Photography, transformation, independent, cultural, Ahmedabad, Farnham

1. COLLABORATIVE PARTNERSHIP

'If university courses do not prepare students to use the benefits of difference, we are not discharging our wider responsibilities. In these circumstances we are acting to reinforce patterns of oppression.' (Cohen & Sampson, 2001:62)

This paper presents a progress review of a creative collaborative partnership between UK and India; it outlines how University for the Creative Arts (UCA), and National Institute of Design (NID) have built a partnership concentrating on international exchange as a focus for students shared experience and learning within the context of art and design and the specialist subject of photography. The objectives of the project have been to create an exchange that has enabled students to develop new approaches to practice derived from new cultural understanding and to develop life-long learning for staff and students within a global context. The project is valuable in terms of the creation of expanded networks and new knowledge for both staff and students in each host country.

In 2008, after a two-year consultation period between UCA and NID, Professor Anna Fox (UCA) and Dr Deepak John Mathews (NID) applied for a major UKIERI (UK India Education and Research Initiative) award with the support of senior staff in both institutions. The UKIERI award was won later that year, on the understanding that the two institutions would collaboratively develop a Postgraduate (PG) dual award in photography that reflected a mutual understanding of the different contexts in which it would be delivered. Over the next twelve months the course was written and validated by an international panel.

Between 2009 and 2010 Professor Anna Fox also applied for and was awarded two PMI2 (Prime Ministers Initiative) awards to facilitate UK student exchange and travel to India, (a total of forty selected students travelled over a two year period) and Dr Deepak John Mathews (with support from UCA and NID) co-ordinated two one month long study visits for two different NID cohorts, (a total of twenty seven students travelled over two years). The exchange study visits were important because they formalised learning within a validated programme, as opposed to the more informal nature of a field trip or gap year.

My role in the project, as a lecturer of photography at UCA, was to support a part of the study time and the return of the first cohort of UCA students back to the UK. During my visit to NID I became a course facilitator: delivering an artist talk, offering individual tutorials and sitting on the interview panel to advise on the intake of the first cohort of Indian students onto the new PG Dual Award.

2. STUDENT EXPERIENCE

The Dual Award: PG Diploma/MFA Photography is a full-time, two-year programme that comprises a series of minor practice projects (each building upon the experience of the preceding project), workshops, theoretical units, work placement and a final major project with evaluation and contextualising documents. Students from within either programme are able to undertake one semester exchange in the partner institution.

Andy Armitage suggests that adults do not learn effectively in an environment in which they feel psychologically or physically uncomfortable (Armitage et al 2007:88). This was evidenced when the exchange started in 2009 and it was clear that both Indian and UK students faced disorientating dilemmas, with only three of the twenty UK students having visited India before and none of the Indian students having visited the UK before.

The students were faced with a degree of uncertainty which was moderated to a certain extent by the planning procedure (pre-departure information meetings and research) and the fact that UCA and NID as institutions had a significant level of compatibility in terms of type of institution and courses run.

The Indian students encountered the wealthy and quiet Surrey town of Farnham. This new environment was not very multicultural in comparison to their home country, but was relatively safe for foreign visitors. They were immediately struck by the silence/lack of people, the green lushness of May and the extended twilight.

Many of the students from both countries became interested in cultural identity and began to explore this in relation to the exchange group members, as well as independent interaction within their new learning environment. New shared knowledge and understanding between their beliefs, attitudes, personalities and life experiences were explored through a number of workshops that were both practice based and concept driven. These raised questions about identity, and at the same time students made their own photographic projects based around the simple theme, *Spaces and Places*.

When students from the UK travelled to Ahmedabad they were struck by the volume of people, chaotic environment and the unfamiliar smells. A psychological threat to the UK learners was the knowledge that a series of bombs had gone off in Ahmedabad in 2008.

Post visit interviews exposed that students experienced varying degrees of anxiety and shock, during the exchange for a range of reasons; different teaching methods and approaches to learning, pace of learning, availability of materials, weather conditions, animals and human relationships to animals and families on each side were anxious about the threat of danger

Students prepared well for travel with either mosquito nets or purchased adequate clothing to cope with UK weather. When reaching either India or the UK, social activities between learners were enthusiastically encouraged with a view to acclimatising students within their new environments.

John Biggs states, 'all students should work collaboratively in dialogue with others, both peers and teachers. Good dialogue elicits those activities that shape, elaborate, and deepen understanding' (Biggs & Tang, 2007:21). Modelled on this theory of collaboration, the arriving UK students at NID were paired up by the two lead instructors from India and the UK (Dr Deepak John Mathews and Professor Anna Fox), enabling the students to get to know each other over a two-hour lunchtime.

After the break they were asked to swap identity and be photographed while acting as their partner (see Figure 1). Some went outside the campus and engaged with the street; this pushed the workshop idea into the public domain where some very particular responses were elicited. At the end of the workshop, Professor Anna Fox documented their identity exchange by shooting each couple with a 5x4 camera whilst the students assisted her and learnt new skills in relation to large format cameras.

The workshop encouraged students to work collaboratively, exploring personal themes, beliefs and opinions. Group work actively encouraged the culture of students to 'get to know each other' with the aim of working and learning together. Huddleston and Unwin identify that,

'Students value the opportunity of learning with others working cooperatively, and that learning within a community can challenge prejudices and limited horizons of learners that can easily remain unchallenged when learning becomes an entirely individual affair.' (Huddleston & Unwin, 2009:49)

Debate and discussion around issues of difference was encouraged, supported and facilitated through group critiques, allowing the students to explore their new environments beyond derogatory or stereotypical points of view. One way this potential was facilitated was by 'team teaching'. Huddleston and Unwin explain that such 'teaching can be used to counter prejudice along gender and racial lines and overcome the difficulties in mixed abilities' (Huddleston & Unwin, 2009:157). Lecturers from both countries taught together from the beginning of the exchanges and students were encouraged to run workshops for their peers. This continued throughout the exchanges: some of the UK students (post graduation) returned to India, invited by Dr Deepak John Mathews as artists in residence to run workshops for undergraduates.

3. PHOTOGRAPHIC OUTCOMES

The project was accompanied by a series of trips to museums, galleries and archives, exposing the students to new ways of thinking. When the Indian students travelled to the UK, the learner's views were broadened as they deepened their knowledge about fine art photography in particular.

"Initially I was so ignorant that I was searching for the definition of 'Art', but then I realized 'Art' cannot be defined. The visit to TATE gallery was a marvellous experience. My understanding and perspective towards art and photography completely changed". Sharan Gaol, NID Student.

UK students visited the Alkazi Foundation, Delhi gaining an understanding of a new history: traditional Indian photographic techniques such as, the painted photograph and Homai Vyarawalla, India's first woman press photographer. These experiences exposed them to new discoveries and ways of thinking, little known in the West.

Group critiques were vital as part of the learning experience. This entailed both peer debate as well as staff review and feedback; the critiques provided a formative learning space. Campbell and Norton claim that engaging the students in critical review and reflection of each other's experiences establishes a community of enquiry (Campbell & Norton 2007:22). Group enquiry was enabled within the shared working space. UK students exhibited their work at the NID campus providing a practical opportunity to gain professional confidence and wider discussion within the institution.

"Whilst in India we organised a show, I had a large part in curating this. On returning to Britain I have taken an active interest in curating such events. The trip to India really opened my eyes to the World its cultures and the possibilities in it including employment." Andrew Fergusson, UCA student.

Units in the MFA course have been designed to enhance students 'wider' lifelong learning, promoting learner independence (Armitage et al 2007:97). A final year unit includes work experience to help prepare students for the professional world. Work experience expanded their understanding of employability giving them a global perspective. During professional practice students sign up to the employment forum, FOTOFOLIOS, designed and hosted by UCA, an environment to extend students' opportunity to engage with a wider community on an equal platform not disadvantaged by cultural difference or location. Via this means of public display both student groups have seen their photographic works win prestigious awards.

4. EVALUATION

The next stage of the project is to critically analyse the outcomes from the perspective of both students and staff in terms of their cross-cultural exploration. A primary objective of the partnership was to enable students to investigate cultural differences, expanding their ideas and networks through new knowledge. The analytical phase of the project will examine the cultural disparities and similarities, testing and critically evaluating the outcomes of the programme through an applied research methodology. The qualitative and quantitative data collection will include student questionnaires and a focus group for each cohort, addressing the consequences and contrasts of their learning experience, in order to create a set of propositions for maintaining an effective dialogue that will aim to enhance future work in student learning.

The future of photography in India is particularly interesting, whereas film and animation already have world prominence, photography as a subject of study is in its infancy. The knowledge gained has empowered the Indian students to begin to document the photographic history of India through their own eyes. Lectures in both institutions have encouraged the students to reflect on the possibility of what could actually be started within a photography marketplace in India.

The photographic material produced by both parties during the exchange visually charts their learning journey. This material, when exhibited offers another means of data collection: when in the public domain responses to the students work can be collated through visitor feedback on comment boards in the gallery. This public display sees the project continue to break down cultural barriers in the wider community.

The preliminary feedback reports, completed by students in both countries after their exchange, offer initial insight into how the experience has impacted upon their learning. Informal observation by myself and other members of staff suggest the students were transformed by the opportunity to experience each other's countries. They returned home with different career objectives and goals, fostered new professional and personal networks and organised their own independent return trips.

This initial evidence suggests the students developed their creativity and cultural understanding from their experience of living and working in their exchange country. This can be observed through a growth in knowledge and confidence at all levels – this still needs to be effectively recorded and investigated to obtain data for analysis with the aim to sustain and support good practices for cultural exchange.

FIGURES



Figure 1. *Getting To Know You* by UCA Professor Anna Fox

REFERENCES

- Armitage, Andy et al. (2007). Teaching and the Management of Learning in Teaching and Training in Post-Compulsory Education chapter 4 pp91-116 Maidenhead, Open UP.
- Biggs, J and Tang, C (2007). Teaching for Quality Learning at University, third Edition. Maidenhead: Open University Press.
- Boud, D., Cohen, R and Sampson, J. (2001). Peer Learning in Higher Education. London: Kogan Page
- Campbell, A and Norton, L. (2007). Learning, Teaching and Assessing in Higher Education chapter 3 pp21- 29 Wiltshire: Learning Matter Ltd.
- Huddleston, P. and Unwin, L. (2008). Teaching and Learning in Further Education: Diversity & Change. 3rd ed. Oxon: Routledge.

PREDICTING IN-SERVICE TEACHERS' USE OF TECHNOLOGY: APPLYING MULTIPLE INDICATORS, MULTIPLE CAUSES (MIMIC) MODELLING

Timothy Teo and Chwee Beng Lee

Nanyang Technological University - National Institute of Education - 1 Nanyang Walk, Singapore 637616

ABSTRACT

This study investigated the factors that impact on in-service teachers' intention to use technology (n=383), using multiple-indicator, multiple cause (MIMIC) modeling. In this study, in-service teachers' intention to use technology was hypothesized to be impact by four factors: (1) age, (2) years of teaching service, (3) years of computer use, and (4) hours of daily computer use. Using the structural equation modeling approach, the MIMIC model was found to have a good fit for both the measurement and structural models. Results showed that only years of computer use and daily computer use were significant predictors of in-service teachers' intention to use technology. However, all four indicators (perceived usefulness, perceived ease of use, subjective norm, and facilitating conditions) were significant measures of the intention to use technology.

KEYWORDS

Multi case modeling; structural equation modeling; in-service teachers

1. INTRODUCTION

The success of any initiatives to integrate technology in teaching and learning depends largely on teachers' support. In many instances, this support refers to teachers' intention to use technology. Among the factors that significantly influence users' intention to use technology are perceived usefulness, perceived ease of use, subjective norm, and facilitating conditions (Teo, 2009; Teo & van Schaik, 2009). Perceived usefulness (PU) is extent to which a potential user's believes that using a technology or system will increase or improve job performance while perceived ease of use (PEU) is degree to which a person believes that using a particular technology would be free of effort (Davis, Bagozzi, & Warshaw, 1989). Subjective norm (SN) is defined as a person's perception that most people who are important to him or her think he or she should or should not perform the behaviour in question (Fishbein & Ajzen, 1975) and Facilitating conditions (FC) are factors that exist in the environment which exert an influence over a person's desire to perform a task.

1.1 MIMIC Modelling

In this study, a MIMIC model was hypothesized for teacher' intention to use of technology. First proposed by Joreskog and Goldberger (1975), MIMIC is one type of structural equation model and it stands for a multiple indicators and multiple causes model. It is used to explain an event under investigation when the observed variables are manifestations of an underlying unobserved latent that is affected by other exogenous variables that "cause" and influence the latent factor(s). In MIMIC modelling, two parts are computed: the measurement part that displays the causal link among the latent variables and the observed causes, and the structural part which shows how the latent variables are estimated through the observed variables (the indicators). The measurement part is compared to a confirmatory factor model in which one latent variable is measured and the prediction part can be seen as a multiple regression model in which the latent variable serves as the outcome. In Figure 1, the latent variable Intention to Use (ITU) is measured by four indicator variables: PU, PEU, SN, and FC.

This aim of this study is to examine the relationship between user domain variables and teachers' intention to use technology using MIMIC modelling.

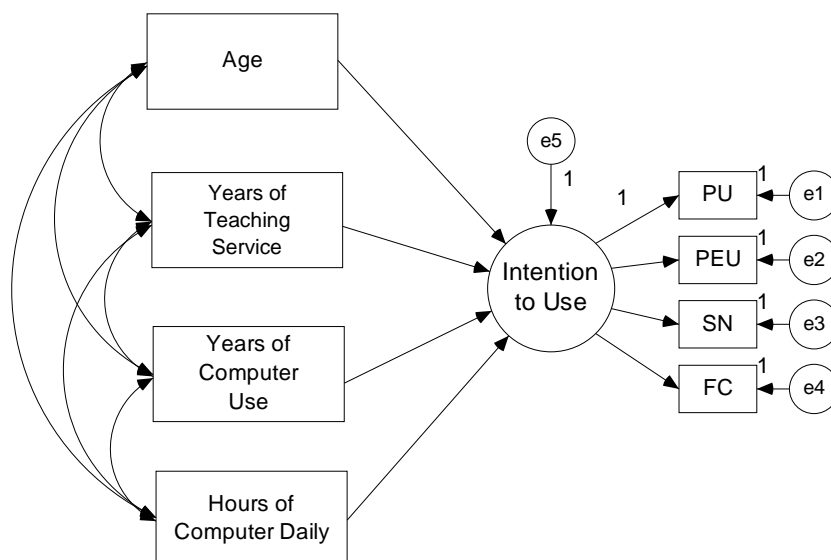


Figure 1. MIMIC model

2. METHODOLOGY

2.1 Participants and Procedure

Participants were 383 teachers from 16 primary schools in a South-East Asian country. Among the participants, 83.0% (n=318) were females and the mean age was 34.93 (SD= 8.83) years. Teachers from the 16 participating school were given an url to access an online survey questionnaire developed for this study. On average, participants took no more than 20 minutes to complete the questionnaire.

2.2 Materials

A questionnaire requesting demographic information such as gender, age, years of teaching service, years and hours of daily of computer use was used. Additionally, participants responded to a 12-item scale comprising items adapted from various sources such as Teo (2010). The 12-item scale measured four constructs: perceived usefulness (four items), perceived ease of use (three items), subjective norm (two items), and facilitating conditions (three items). All items were Likert-type statements and measured on seven points, ranging from 'strongly disagree' (1) to 'strongly agree' (7). In this study, the mean score for each of the four constructs was computed to become an observed indicator score to measure the latent construct, intention to use.

3. RESULTS

3.1 Statistical Analyses

Structural equation modelling was used to test the MIMIC model in Figure 1. The fit of the model was estimated using the maximum likelihood (MLE) procedure and assessed using a number of goodness of fit indices representing absolute, comparative, and parsimonious aspects of fit. They were: χ^2 , χ^2/df , Tucker-Lewis index (TLI), Comparative Fit Index (CFI), Root Mean Squared Error of Approximation (RMSEA), and Standardized Root Mean Residual (SRMR). A χ^2/df ratio of less than 3.0 indicated good overall model fit. To achieve acceptable model fit, the TLI and CFI should be greater than .95, and the RMSEA and SRMR should be equal or smaller than .06 and .08 respectively (Hu & Bentler, 1999).

The fit of this model is very good ($\chi^2 = 36.72$, $\text{df} = 14$, $p = .001$, $\chi^2/\text{df} = 2.623$, TLI = .958, CFI = .979, RMSEA = .06, SRMR = .037). The parameter estimates revealed that all four indicators (PU, PEU, SN, FC) were significant in explaining Intention to Use. PU (loading equals .82) was the strongest indicator whereas SN (loading equals .29) was the weakest. The proportion of explained variance of the four indicator variables was .68 for PU, .62 for PEU, .08 for SN, and .33 for FC. The regression part of the model showed that only years of computer use ($p = .004$) and hours of daily computer ($p = .001$) were significant predictors of Intention to Use. The other two user domain variables did not have significant influences (Age, $p = .102$ and Length of Teaching Service, $p = .245$). Together the user domain variables explain 14.1% of the variance of Intention to Use.

4. DISCUSSION

This study illustrates the application of the multiple indicators, multiple causes (MIMIC) modelling to predict teachers' intention to use technology. Results revealed that age and years in the teaching service are not significant predictors while the years and hours of daily computer use are. In practical terms, when teachers spent more time on using computers, there is a higher chance that teachers will use them again (intention), irrespective of how young or old or how experienced a teacher is. The evidence from this study is contrary to existing research which suggests that younger digital natives possess stronger motivation to engage in technology. Future research may include additional user domain variables and comparing the intention to use technology between teachers and other users.

REFERENCES

- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R., 1989. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, Vol. 35, pp.982-1003.
- Fishbein, M., & Ajzen, I., 1975. *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Hu, L., & Bentler, P. M., 1999. Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling*, Vol. 6, pp. 1-55.
- Joreskog, K., Goldberger, S., 1975. Estimation of a Model with Multiple Indicators and Multiple Causes of a Single Latent Variable, *Journal of American Statistical Association*, Vol. 70, pp. 631-639.
- Teo, T., 2009. Modelling Technology Acceptance in Education: A Study of Pre-service Teachers. *Computers & Education*, Vol. 52, pp. 302-312.
- Teo, T., 2010. A Path Analysis of Pre-service teachers' Attitudes to Computer Use: Applying and Extending the Technology Acceptance Model in an Educational Context. *Interactive Learning Environments*, Vol.18, pp.65-79.
- Teo, T., & Schaik, P. van, 2009. Understanding Technology Acceptance among Pre-service Teachers: A Structural-Equation Modeling Approach. *The Asia-Pacific Education Researcher*, Vol. 18, pp. 47-66.

Reflection Papers

THE ROLE OF ICT IN TEACHING FOR ENHANCING QUALITY EDUCATION IN HIGHER EDUCATION: A CASE STUDY OF INDIA

M.L. Ranga¹, Dinesh K. Gupta² and Roshan Lal³

¹Vice Chancellor; Corresponding Author's; Guru Jambheshwar University of Science & Technology, Hisar-125001, India

²Associate Professor, Department of Library & Information Science, Kurukshetra University, Kurukshetra-136119, India

³Professor of Business Management, M.M. University, Mullana (Ambala)-133203, India

ABSTRACT

The objective of this paper is to examine the role of ICT (Information Communication Technology) in enhancing the quality of teaching at higher education level. Although the concept of higher education has been progressing well in India and ICT is being used in all spheres of education, this article aspires to study the current status of ICT implementation and its role in improving the quality of higher education.

KEYWORDS

Quality Education, Information Communication Technology, Digital Communication, Higher Education.

1. INTRODUCTION

India keenly aspires for international recognition as a “knowledge superpower,” and globe trotting Indian executives and policymakers are always eager to tout the country's much-vaunted IT companies, and a fast-growing pharmaceutical industry, not to mention its pools of engineering, legal, and research talent.

The scenario considered most promising in the future envisages the country to become the global leader in IT innovation by the end of the next decade. India can well become the 'software superpower' of the world by 2020, but all depends on investments in workforce development and country-level infrastructure, a report by IT research firm Gartner said. India is most likely to become the software superpower of the world by 2020, provided the country's infrastructure and software skill development is completed as per plans and India continues to maintain its competitive advantage," Gartner's Distinguished Analyst Regional Research Director (India) Partha Iyengar told PTI [4].

Indian education system is one of the largest and oldest education systems in the world consisting of more than 431 universities and 20,677 affiliated colleges. The universities and colleges put together accounts for 116.12 lakhs students enrolled in these institutions with 5.05 lakh teachers.

Keeping in mind these factors The National Knowledge Commission, a high-level advisory body to the Prime Minister of India, was constituted with the objective of transforming India into a knowledge society.

2. QUALITY EDUCATION

Quality education means that the majority of the students, if not all, are able to meet the expectation of the "Minimum Level of Learning". It means stimulating creative thinking, developing problem-solving skills and life skills and laying emphasis on application of knowledge.

2.1 Quality Education Includes

– Learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities;

- Environments that are healthy, safe, protective and gender-sensitive, and provide adequate resources and facilities;
- Content that is reflected in relevant curricula and materials for the acquisition of basic skills, especially in the areas of literacy, numeracy and skills for life, and knowledge in such areas as gender, health, nutrition, HIV/AIDS prevention and peace.
- Processes through which trained teachers use child-centred teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities.
- Outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society [2].

Minister of State for Human Resource Development D. Purandeswari had sought to reveal some statistics in the Rajya Sabha, the upper house, ascribing impressive numbers to Indians who are contributors to the US' knowledge economy. 38 percent of doctors in the US are Indians, as are 36 percent of the scientists at the National Aeronautics and Space Administration (NASA) and 34 percent of Microsoft employees [3].

In almost all the world class ICT companies the Indians presence is quite identifiable. The Indian IT sector, which gets 60 per cent of its export revenue from the US, has come out strongly against US moves to ban outsourcing [8]. In the context of education policy of his country, US President Barack Obama while addressing an election rally at Boston in October 2010 has warned of an "Education Arms Race" with India and China and said any cut in the education budget as recommended by the Republicans would be detrimental to America's national interest.

These are apparent evidences of the global recognition of Indian quality education.

3. HOW CAN ICTS HELP EXPAND ACCESS TO EDUCATION?

ICT is a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

- **Anytime, anywhere.** One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24x7. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location.

- **Access to remote learning resources.** Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials on almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. ICTs also facilitate library resources and access to resource persons—mentors, experts, researchers, professionals, business leaders, and peers—all over the world [1].

4. USE OF ICT IN INDIAN HIGHER EDUCATION INSTITUTIONS

The trend towards a knowledge-based economy has emphasized the importance by accelerating high-technology and information technology economies, requires sustained human resource development and training. Globalization and pressures to teach and train knowledgeable, skilled and competitive professionals, universities face a huge challenge to increase access to higher education and improve the quality of higher education against the stark reality of decreasing resources.

Fundamental to the creation of qualified human resources is an accessible, effective and efficient higher education system, particularly when governments are counting on university graduates to be competitive in creating wealth for their respective countries. Universities are compelled to be innovative and lead by example in using cutting edge technology to meet these expectations.

Global competition in education system is forcing the academic institutions to change their curricula frequently and introduce new disciplines, which, in turn, imposes greater demand on educational institutions to have good communication and network infrastructure so that faculty, researchers and students can access the most up-to-date information especially in emerging disciplines. It is important for a large country like India to build proper communication and network infrastructure so as to connect all academic institutions with each other as well as with global academic community and enable them to access, disseminate and share scholarly resources in electronic format [10].

Proper and reliable communication is a pre-requisite to effective and efficient use of electronic resources available free in the web space or for a fee. Digital communication and networking technologies are key drivers of economic growth and social well-being in the 21st century and helps to upgrade their communication and network infrastructure to tap the maximum benefits from web-based electronic information resources.

4.1 Inflibnet

To bring qualitative change in the academic infrastructure and modernization of university campuses with state-of-the-art campus wide network, the UGC has set up its own nationwide network named INFLIBNET in 1991. The INFLIBNET, as an IUC (Inter-University Centre) of the UGC (it became an independent Inter-University Centre in 1996), acts as a coordinating agency for monitoring the network and Internet bandwidth provided to all the universities and liaisons between ISP and universities. Some of its functions include: Promote and implement computerization of operations and services in the libraries and information centres of the country, following a uniform standard. INFLIBNET has funded almost 200 libraries for computerization of libraries and designed and developed SOUL (Software for University Libraries) state-of-the-art user-friendly library automation software. SOUL has total 2016 Installations in various types of libraries [6].

4.2 UGC-INFONET Digital Library Consortium

INFLIBNET started UGC-INFONET Digital Library Consortium to foster the knowledge needs of the academicians in higher education institutions. It is based on open IP platform, deploying state-of-the-art technologies like IP multicast, TCP spoofing and other Internet tools that provide interactive education on PC or TV, enabling on-line response to queries. It has been renamed as **UGC INFONET 2.0** w.e.f. 1st April 2010. The scheme has now been extended to 200 Universities and 6 Inter-University Centres of the UGC.

Salient features of UGC-INFONET Connectivity Programme are as follows:

- Serves as a vehicle for distance learning and facilitates quality education all over the country.
- Facilitates delivery of education material including electronic journals and bibliographic databases to the remotest areas of the nation;
- Serves as a resource for researchers and scholars for tapping the most up-to-date information.
- Act as a medium for collaboration among teachers and students within India and all over the world.
- Facilitates Intranet infrastructure for beneficiary universities.
- Serves as a channel for globalization of education and facilitates the universities in marketing their courses and project their R & D activities. The scope to meet objectives of ISP as per the MoU is as follows:
 - Designing network infrastructure for the UGC-INFONET Connectivity Programme;
 - Providing space to the universities / UGC for hosting their web sites.
 - Installing equipment and establishing Internet connectivity at the universities.
 - Training of personnel from universities to manage and maintain their networks and connectivity.
 - Providing mailing and other services to the universities and the UGC offices [7].

4.3 INDEST-AICTE Consortium

Ministry of Human Resource Development (MHRD) has set up INDEST-AICTE Consortium (Indian National Digital Library in Engineering Sciences and Technology) to serve the information needs of engineering and technological institutions. The Consortium subscribes to over 6500 electronic journals from a number of publishers and aggregators. At present the consortium has enrolled 1207 members [5].

5. SOME MORE ICT INITIATIVES IN INDIA

- The UGC has set up National Assessment and Accreditation Council (NAAC) to assess the quality of higher education institutions, which uses criteria of quality for universities and colleges in the country [9].
- Indira Gandhi National Open University (IGNOU) uses radio, television, and Internet technologies for imparting education.
- National Programme on Technology Enhanced Learning India, 2007: a concept similar to the open courseware initiative of MIT. It uses Internet and television technologies.
- Eklavya initiative: Uses Internet and television to promote distance learning (EKLAVYA Technology Channel, India, 2007).
- IIT-Kanpur has developed Brihaspati, an open source E-learning platform.
- Premier institutions like IIM-Calcutta have entered into a strategic alliance with NIIT for providing programmes through virtual classrooms.
- Jadavpur University is using a mobile-learning centre.
- IIT-Bombay has started the program of CDEEP (Centre for Distance Engineering Education Program) as emulated classroom interaction through the use of real time interactive satellite technology.
- One Laptop per Child (OLPC) in Maharashtra.

6. CONCLUSION

Thus there has been several fold increase in the educational institutions and number of teachers. With this progress in the educational infrastructure in terms of institutions and faculty, we expect improvement in the level of higher education in terms of aggregate access, access to disadvantage groups and the quality of higher education.

For developing countries ICTs have the potential for increasing access to and improving the relevance and quality of education. It thus represents a potentially equalizing strategy for developing countries. However, the reality of the Digital Divide—the gap between those who have access to; and control of technology and those who do not—means that the introduction and integration of ICTs at different levels and in various disciplines of education will be a most challenging undertaking. Failure to meet the challenge would mean a further widening of the knowledge gap and the deepening of existing economic and social inequalities.

REFERENCES

1. Banerjee, Abhijit et al. (2003). Improving the Quality of Education in India: Evidence from Three Randomized Experiments. <http://www.cepr.org/meets/wkcn/3/3515/papers/duflo.pdf>
2. Chabungbam, Deepak. Parents, teachers and quality education. Available at: http://www.epao.net/epPageExtractor.asp?src=education.Parents_Teachers_and_Quality_Education.html
3. Chopra, Parveen. (2008). Indians are a force in US but beware of statistics. http://www.thaindian.com/newsportal/uncategorized/indians-are-a-force-in-us-but-beware-statistics_10027868.html
4. Gartner. India may become global software superpower by 2020. The Economic Times. 14 Mar, 2010. <http://economictimes.indiatimes.com/infotech/software/India-may-become-global-software-superpower-by-2020->
5. INDEST-AICTE Consortium. <http://www.paniit.iitd.ac.in/indest/>
6. INFLIBNET. <http://www.inflibnet.ac.in/>
7. INFONET. <http://www.inflibnet.ac.in/infonet/>
8. Jha, Lalit K. 2010. Obama opposes tax breaks for firms outsourcing jobs. Outlook India. 10 September, 2010.
9. Tinio, Victoria L. ICT in Education. United Nations Development Programme Bureau for Development Policy. New York. Available at: <http://www.apdip.net/publications/iespprimers/epimer-edu.pdf>
10. UNICEF. Defining Quality in Education. A paper presented by UNICEF in The International Working Group on Education Florence, Italy. June 2000. Available at: <http://www.unicef.org/education/files/QualityEducation.PDF>

INCORPORATING GRADUATE QUALITIES BY ADDRESSING THE DIVERSITY OF THE STUDENTS IN A FIRST SESSION PRE-UNIVERSITY COURSE

Pranit Anand

Wollongong College Australia - Wollongong, Australia

ABSTRACT

Higher education in Australia and around the world is increasingly becoming international, with high numbers of international students. Institutes benefit from the rich diversity that these international students bring, however recognising this diversity and incorporating it into curricular is a significant challenge. A number of institutions have identified their own Graduate Qualities to differentiate them from their competitors. These are the qualities that their graduates are expected to be able to demonstrate towards the end of their studies. This paper aims to report on an ongoing exercise at the Wollongong College Australia to try to incorporate its Graduate Qualities into its curriculum while addressing the needs of a very diverse student cohort.

KEYWORDS

Graduate Qualities, Internationalisation, Cultural awareness, Diversity

1. INTRODUCTION

The Wollongong College Australia (WCA) offers a number of university pathway and English language study programs. Students enrol in these programs based on their high school academic results. Most of the students at WCA are international students, although due to the proximity of Wollongong to Sydney and WCA's association with the University of Wollongong, it also attracts an increasingly large number of domestic students.

The Foundation Studies program is a general university preparatory course without any specialisation; therefore all the students are required to do all the subjects in that program. This then poses interesting challenges for teachers at WCA to encourage engagement with the learning activities and facilitate the acquisition of the WCA graduate qualities, as the students from different backgrounds bring with them their own cultural beliefs and values about teaching and learning. Further, students who wish to specialise in different areas at university have their own expectations of university pathway study programs.

In the spring session 2010, the new Foundations Studies cohort had over 70 students. These students were made up of over 13 different nationalities; collectively they spoke over 10 different languages and the students identified over 7 different majors/streams that they intend to pursue at university.

The WCA graduate qualities were identified to reflect the unique mix of WCA students, the pathways of these students after studying at WCA and WCA's association with the University of Wollongong. The WCA graduate qualities are stated as follows:

- **Informed:** have a sound knowledge of an area of study or profession and understand its issues locally and internationally.
- **Independent Learners:** engage with new ideas and ways of thinking and critically analyse issues. Acknowledge the work and ideas of others.
- **Problem Solvers:** take on challenges and opportunities. Apply creative, logical and critical thinking skills to respond effectively.
- **Effective Communicators:** articulate ideas and convey them effectively using a range of media. Work collaboratively and engage with people in different settings. Recognise how culture can shape communication.

- **Responsible:** understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.

This paper aims to outline how ‘Diversity Pedagogy’ (Sheets 2005) was used to inform the facilitation of these graduate qualities to frame the learning activities and assessment tasks for a first session Foundation Studies Computing subject.

2. TEACHING AND LEARNING THROUGH DIVERSITY PEDAGOGY

Given the diversity of this student cohort, here then was an opportunity to recognise the diversity of the learners, and use that to enhance the engagement of the students while facilitating the acquisition of the WCA graduate qualities. “Diversity Pedagogy is a developmental approach to the teaching-learning process that can help you advance cultural competency in your classroom” (Sheets 2005, p1). These principles were used to shape the learning activities of this Computing subject.

Diversity pedagogy is related to cultural inclusivity which is mentioned by a number of other authors (Biggs 1994; Tang and Williams 2000; Wu and Singh 2004) as one of the central foundations of student-centred learning environments. Chen et al state that in order to promote cultural inclusivity, the learning resources should be made accessible to the students in a “manner that is congruent with their values, beliefs and styles of learning”(Chen, Mashadi, Ang and Harkrider 1999).

Existing research have identified significant differences that exist between the Australian education cultures and other “Confucian Cultures”, which includes countries like Hong Kong, China, Vietnam, Japan, Taiwan, Singapore, Malaysia, etc. From these existing research and observations from classroom practice, it is fair to note that there is a significant difference in approaches to learning and teaching between the ‘Asian learners’ and the ‘Australian learners’(Hui 2005). Although little research has been done about the learning approaches by students from non-Confucian backgrounds, it would be safe to assume that there are significant differences in learning approaches.

A number of approaches were used to facilitate the acquisition of the WCA Graduate Qualities through ‘Diversity Pedagogy’.

- Encouraging students to share their country, cultural and language backgrounds. Time was dedicated during the initial introductory class time for discussion about students’ backgrounds. The class was divided based on the different countries and students were asked to come up with three interesting things that they would like everyone else in the class to know about their countries. This ensued some interesting discussions where, once started, students were happy to share interesting facts about their countries. A number of students in class had not heard of some of the countries and it was interesting to see students asking and answering questions, even in a large lecture.

- Numerous small group activities based on the students’ majors. That is, students who identified Engineering as a possible pathway would be grouped together to work on small activities. Often these small groups would be made up of students from different countries, and because they had already identified topical conversation starters through the first exercise students did not have much difficulty working collaboratively on assigned topics. This was made even more comfortable and relevant for the students as they were now discussing the topics with someone they know also wishes to pursue the same course at university. Once again these ideas were shared with the rest of the class, this time through online discussions.

- The major group project was created so that students from different majors were able to choose their topics. Each stream of student had a different question. The student found this more realistic as they were doing a project that reflected their area of interest. The students were able to select their group partners based on their stream/majors, which by now was not a difficult exercise as they had already been working on small group activities amongst them for a while in the lectures.

- Use of international examples in lectures and tutorials. Students were encouraged to provide examples of situations from their home countries as discussion during the lectures and tutorials. “It was interesting to note the use of robots in Japanese restaurants.”

- Individual research and application problems to enable students to work independently. Students were able to ‘showcase’ their individual work in the tutorials eliciting critique by other students. Once again

students were comfortable doing this as they were already comfortable working with most of the students in the class due to the small group activities.

- Facilitating an online discussion where the lecture topics were discussed in more detail. A number of international students were able to grasp some of the computer industry jargon online due to the asynchronous nature of the online discussions.

A subject evaluation was also carried out to get a feel for how the students felt about the subject.

3. RESULTS

Initial feedback from the students indicates positive results. Figure 1 shows that the majority of the students report that because of the learning activities of this subject they became more familiar with other cultures.

Figure 2 shows that the students further report that through the activities of this subject they were a lot more comfortable attending and participating in the learning activities. They also reported that they appreciated discussing the assigned topics with someone from their own stream, not necessarily with someone from their own country.

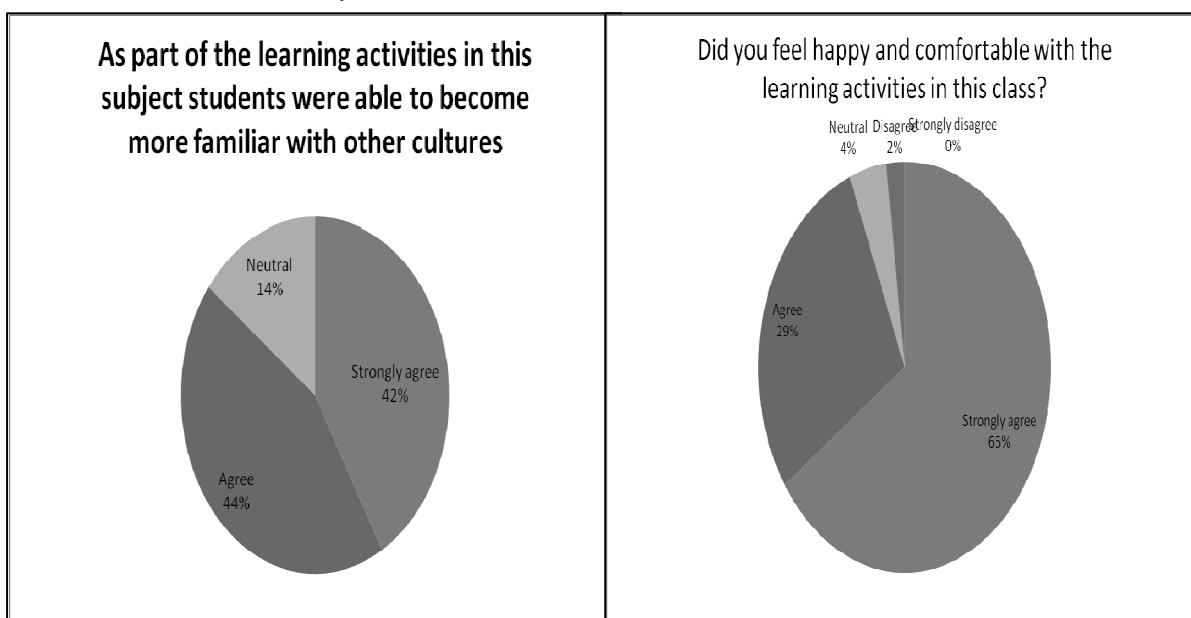


Figure 1. Did the students become more familiar with other cultures?

Figure 2. Did the students feel comfortable with the learning activities?

4. CONCLUSION

Higher education institutions must do all it can to engage students with diverse backgrounds and pathways. Recognising and incorporating this diversity is an important step towards delivering the graduate qualities that the students expect to gain when they enrol at these institutions. This exercise of incorporating the graduate qualities into the curriculum at WCA is still ongoing and although initial student feedback has been positive, a lot more work needs to be done to ensure a truly internationalised curriculum that effectively supports its graduate qualities.

REFERENCES

- Biggs, J. (1994). "Asian Learners Through Western Eyes: An Astigmatic Paradox." *Australian and New Zealand Journal of Vocational Education Research* 2(2): 40-63.
- Chen, A., et al. (1999). "Cultural issues in the design of technology enhanced learning systems." *British Journal of Educational Technology* 30(3): 231-245.
- Hui, L. (2005). "Chinese cultural schema of education: Implications for communication between Chinese students and Australian educators." *Issues In Educational Research* 15(1): 17-36.
- Sheets, R. H. (2005). *Diversity Pedagogy: Examining the Role of Culture in the Teaching-Learning Process*. Boston, Pearson Education Inc.
- Tang, T. and J. Williams (2000). Misalignment of Learning Contexts - an explanation of the Chinese Learner Paradox, School of Economics and Finance, Queensland University of Technology.
- Wu, J. and M. Singh (2004). "Wishing for Dragon Children: Ironies and Contradictions in China's Education Reform and the Chinese Diaspora's Disappointments with Australian Education." *The Australian Education Researcher* 31(2): 29-44.

Poster

CHINESE UNDERGRADUATE STUDENT INDUCTION PROGRAM: AN AUSTRALIAN UNIVERSITY APPROACH

Grace Ang*, Michele Doray**, Rosemary Kerr*, Glennda Scully* and Werner Soontiens*

*Curtin University - Curtin Business School, Bentley, Perth, Western Australia

**Curtin University - Curtin English Language Centre, Bentley, Perth, Western Australia

ABSTRACT

This poster reports on an induction program developed for mainland Chinese undergraduate students at a major Australian university business school. The program developers have used questionnaires and focus groups to inform continuous improvement of the induction experience. Results indicate that students find the induction useful for understanding the Australian university approach to teaching and learning. Feedback from the first program indicated students wanted more information about Australian culture. In addition to this, key themes that shaped the second program included scheduling, more interactive learning experiences, and the desire for contact with local student mentors, and tips for living in Western Australia. Feedback indicates that students consider many aspects of the program relevant and useful but there are also challenges to further improve the program and facilitate students prior to their departure from China.

KEYWORDS

Chinese undergraduate students, academic preparation, study abroad, Australian higher education.

1. INTRODUCTION

Australian tertiary education over the last decade has increasingly embraced the recruitment of international students as a result of various drivers (Lu *et al*, 2009; Pimpa 2003; Wang, 2007; Yao, 2004). In the geographical and socio-economic context of the Southeast Asian region, it was predictable that China would have a prominent place in this situation. At the institutional level, the recruitment of students has also translated into the establishment of close links between institutions whereby Australian Universities forged close relationships with Chinese counterparts, partly to overcome uncertainties around the complexity of tertiary education in China and partly to ensure direct access to students. For the Chinese universities in these relationships, this has translated into the opportunity to market and offer pathway programs into an Australian degree and most importantly, an English language based qualification (Shanka *et al* 2005; Yang, 2007). Australian universities traditionally do not differentiate when these cohorts of students articulate to the Australian campus and provide induction and introductions to campus as they would to any other international onshore student. In some instances, clusters within the articulation student cohort have reported difficulty with academic progression and associated academic and educational assimilation.

The School of Accounting at the Curtin Business School has had a number of articulation arrangements with leading Chinese universities in place for over 8 years. These programs have grown over this time from an initial cohort of 50 students to an annual intake of 200 students. All articulation students are senior students in that they have completed at least 2 years of academic study at their Chinese university prior to their one year of study at the Curtin Bentley campus in Perth, Western Australia. All students originate from a Chinese language and Chinese education background and are thus reasonably homogeneous in the sense of the education skill set, capabilities and expectations. Each cohort of students studying in Australia is supported by a staff exchange program whereby a faculty member from their school also spends time in Australia aligned with the student study period at Bentley campus. Feedback from students, teaching staff, Curtin support facilities and the partner institutions identified the need for a more tailored approach to introduce these cohorts of students to the Australian campus life, and the education expectations and realities of studying in an English language environment. Studies on acculturation and academic adjustment indicate

that early support is vital for student success (Zhang, 2002; Zheng *et al*, 2004) As a result of the identified student needs, various sectors of the university forged a partnership in order to provide these articulation students with a comprehensive induction program covering both academic expectations as well as social aspects of living in Australia.

2. THE INDUCTION PROGRAM

The intensive induction program for articulation students aims to address the unique characteristics of this student group. While the program acknowledges and appreciates the relative seniority, experience and exposure to university education of students it focuses on two aspects deemed crucial to academic success at Curtin University. The first aspect is the integration in the Australian environment and campus life and the second one is preparation for study at an Australian education provider. The induction program draws significantly on the content of the university induction for all international onshore students but contextualizes the content to suit the particular student group. For example, the program is opened and attended by a representative of the Chinese consulate to develop an awareness of specific support mechanisms. The program also includes various sessions relating to academic expectations in the course to address the fact that students join the senior student cohort on campus and thus are expected to instantly function at a high skill level in these respects. Support is sought from the articulation partners to encourage the students to attend the program. Records of attendance indicate a high level of attendance from these students.

The program sessions, conducted over four days, provide students with the opportunity to conduct seminar presentations, improve their academic writing and critical thinking skills and increasing their knowledge on referencing. The social and cultural elements of the program aim to inform students about facilities on campus and give an overview of Australian history, colloquial language and popular culture. There have been two iterations of the program in successive years. On completion of the first program, students completed an evaluation instrument consisting of both quantitative and qualitative items about their perceptions of the relevance and usefulness of the topics covered. Student focus groups from the first program were conducted at the conclusion of their course at Curtin in order to obtain information on the success or otherwise of the first version of the course. Feedback from these mechanisms informed the development of the second iteration. Key themes that shaped the second program included scheduling, more interactive learning experiences, and the desire for contact with local student mentors, and tips for living in Western Australia.

From the second program iteration qualitative student feedback, gained from surveys and focus groups, themes emerged that highlighted strengths and areas for improvement. These themes relate to the level of academic preparedness provided by the program as well as providing information on resources available at the university for students to access should they encounter problems while studying at the university. Student feedback pointed to academic preparedness occurring repeatedly during the course, particularly in the 'Referencing and Plagiarism', Seminar Skills and Presentation and Listening and Note taking sessions. A context for the discussions was created by adopting a running theme of "Culture Shock" for all the sessions. Both the theme and the aforementioned sessions were considered by students as being especially useful as they had little prior knowledge on such issues. Many Chinese undergraduate students have not been exposed to learning experiences where academic integrity is an issue. Consequently, providing students with strategies on recognizing the importance and necessity of referencing, how best to avoid plagiarism and methods by which they can exemplify their argument so that it maintains high standards of academic integrity and support is of utmost importance. Given the program was run over only four days, the level of coverage was fairly superficial and feedback indicates it is an area which could be expanded on for future cohorts. In addition, students considered the sessions on seminar presentations and strategies to deal with presenting in the English language very helpful.

The most popular session in the program is the overview of Australian history, colloquial language and popular culture. Students have indicated that this session gave them insights into their new social environment and requested more information on popular culture to help them create social relationships with Australians. Providing opportunities to make contacts with students studying at Curtin Business School

through the introduction of CBSplus student members was appreciated and some Chinese students chose to join this program which focuses on professional development in a business context.

Student feedback highlighted areas that could be further improved. These included suggestions on including a comparative session on the differences and similarities between Western and Eastern education systems, more practical reading and writing opportunities and the provision of more feedback and evaluation to students. While aspects of the differences between Western and Eastern education methodologies were covered implicitly, there is certainly scope for providing more explicit coverage. One of the biggest limitations was working with large groups and while there is recognition of the advantage of breaking students into smaller groups for the purposes of providing more individual attention and practice, the logistics of doing so are difficult but might be addressed with greater funding. There are also challenges to further improve the program and facilitate students prior to their departure from China. Focus group feedback from two cohorts has highlighted the need to improve information for parents and students to facilitate their decision making about international study. The increasing preparedness of Chinese students and parents to use the web to source information provides opportunities for Curtin to create accessible, wide-ranging information to assist student preparation prior to their arrival in Australia.

3. CONCLUSION

Overall feedback indicates that students consider many aspects of the program relevant and useful. It appears that the primary aim of the program was to provide students with a 'taster' of what they could reasonably expect to encounter while studying in an Australian institution, mainly in terms of academic preparedness and opportunities to improve English language skills, was met. Further development work in the pre-arrival in Australia information and resources will assist students in their preparation for study in an English language based university.

REFERENCES

- Lu, Y., Mavondo, F.T., Qui, L.L., 2009. Factors Influencing the Choice of Overseas Study by Undergraduate and Post-Graduate Chinese Students. Downloaded from <http://www.duplication.net.au/ANZMAC09/papers/ANZMAC2009-740.pdf>
- Pimpa, N., 2003. The Influence of Family on Thai Students' Choices of International Education. *The International Journal of Education Management*, 17 (5), 211-219.
- Shanka, T., Quintal, V., & Taylor, R., 2005. Factors Influencing International Students' Choice of an Education Destination- A Correspondence Analysis. *Journal of Marketing for Higher Education*, 15 (2), 31-46.
- Wang, Z., 2007. Key Factors that Influence Recruiting Young Chinese Students. *International Education Journal*, 8(2), 37-48.
- Yang, M. 2007. What Attracts Mainland Chinese Students to Australian Higher Education? *Studies in Learning, Evaluation, Innovation and Development*, 4 (2), 1-12.
- Yao, L.Q., 2004, The Chinese Overseas Students: An Overview of the Flows Change. *12th Biennial Conference of Australian Population Association*. Downloaded from http://www.apa.org.au/upload/2004-6C_Yao.pdf September 29, 2010.
- Zhang, C.M., 2002. Valuing Cultural Diversity: The Academic Adjustment Experiences of Undergraduate Chinese International Business Students at Victoria University. Unpublished Master of Education thesis, Victoria University. Downloaded from <http://eprints.vu.edu.au/229/1/02whole.pdf>
- Zheng, X., Sang, D., Wang, L., 2004. Acculturation and Subjective Well-being of Chinese Students in Australia. *Journal of Happiness Studies*, (5), 57-72.

AUTHOR INDEX

Abbass, H.	80	Tshivhase-Phendla, T.	118
Abouammoh, A.	108	Verezub, E.....	34
Ahmedmia, O.	41	Walt, J.	103
Ai, B.	123	Wang, X.	34
Alhazmi, A.	3	Wood, L.	72
Anand, P.	149	Yan, Z.	41
Ang, G.	155	Zaibon, S.	97
Briguglio, C.	65	Zhao, W.	41
Burnapp, D.	41		
Caruana, N.....	135		
Crichton, S.	57		
Dell, P.....	65		
Doray, M.	155		
Fenster, M.	49		
Fox, A.	135		
González, M.	129		
Gupta, D.	145		
He, S.	41		
Heath, I.	49		
Issa, T.	20,		
Issa, T.	87		
Judd, D.	49		
Kerdchoochuen, J.	12		
Kerr, R.	155		
Kinash, S.	57		
King, C.	27		
Lal, R.	145		
Lavhengwa, T.	103		
Lee, C.	113, 139		
Manford, C.	27		
Mashau, T.	118		
Mazi, A.	108		
McAvoy, M.	57		
Nyland, B.	3		
Pedraja-Rejas, L.	129		
Petraki, E.	80		
Pick, D.	87		
Ping, C.	20		
Ranga, M.	145		
Reefke, H.....	72		
Rodríguez-Ponce, E.....	129		
Scully, G.....	155		
Shiratuddin, N.	97		
Soontiens, W.	155		
Teo, T.	113, 139		