E-Learning Preferences Of International Students: The Shandong University Of Technology Study (SDUT)

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ABSTRACT

This study was prompted by one institution's decision to make flexible delivery and internationalization a strategic priority. Through an existing relationship with an education institute in China, it has been possible to gauge their students' online learning experiences, preferences and intentions to study mixed mode delivery programmes overseas. However, on quick review of the literature, it became apparent that there is a dearth of research on overseas students' online learning preferences. The researcher set out to redress this imbalance and from the insights gained put forward suggestions to strengthen online programme development, staff training and IT investment. These recommendations provide practical strategies for institutes that want to provide relevant programmes to international students and to grow in the international market place.

Keywords: E-learning, distance learning, international student, internet, New Zealand, China, Economics

INTRODUCTION

New Zealand Tertiary Education Export Situation

International students have been providing both monetary and other benefits to the New Zealand education sector. In 2003 more than 120,000 foreign students studied in New Zealand, earning the country \$2.2 billion and making education one of New Zealand's biggest export earners (Education New Zealand, 2004).

Currently there is a drop in international student numbers due to increased competition and negative publicity related to some incidents (Boag, 2006). Since the domestic student number is stagnant, the only way for New Zealand educational institutes to grow and be financially sustainable is to become more internationally focused.

E-Learning Development – General

Many people think that e-learning is training over the Internet. Although this is often true, e-learning can be much more than that. It can include training through the internet or through a local or corporate intranet; information saved onto a CD or DVD and viewed off-line through a web browser or it can include a combination of the above. The simplest definition is "any form of training that uses a computer network for course delivery, interaction, or facilitation and a browser for learner interaction" (Chronos Communication, 2002).

The advances in and decreasing costs of computer software and hardware in the 1980s resulted in increased use of, and confidence in, computer technologies by teachers and learners. By the mid 1990s a number of

educational institutions were fully exploiting the power of the Internet and the World Wide Web. Search engines, to locate and retrieve information, had been developed and a small publication-boom of web sites occurred (Griffiths, 2001).

During the last 30 years remarkable progress has been made in conceptualizing, assessing and investigating the determinants of the social and psychological aspects of the learning environments of classroom and schools (Fraser, 1998). A more significant feature of learning environment research is that the most productive learning outcomes are most likely to occur when learners perceive that their actual learning environment matches their preferred learning environment (Yarrow, 1997). In the last decade there has been a concentrated focus on developing instruments that measure the learning environments associated with computers and the web.

Educators are suggesting that 'Internet' learning that combines face-to-face teaching with online resources and communication, provides a richer learning context and enables differences in learning styles and preferences to be better accommodated (Aldred & Reid, 2003; Bates, 2000; Dalziel, 2003; Mann, 2000).

E-Learning Development – China

E-learning, a relatively new phenomenon in Chinese education, is developing at an unimaginable pace, with more than 7.8 million people engaged in online learning in 2006 (ClickZnetwork, 2006). In 2002 the Ministry of Education of China authorized 67 prestigious universities to trial distance-education projects, including Beijing University and Tsinghua University (Beijing University, 2003). Most of these universities have established their own internet online schools. According to Levy (2003), "Even better, government policy encourages the development of online learning solutions for China's millions of industrial enterprises, opening the door to the West for both content and good ideas. The government recognizes needs in IT training, management training, and human resources - all of which have become even more important now that China is a member of the World Trade Organization."

E-learning allows higher education to be more accessible to people who are not able to go to regular classrooms. The unique situation in China is that the development of e-learning is a collaborative effort made by various universities. At the same time, they are also making a joint effort with big businesses to form a real educational "web" in the country. According to Liang Wie, director of the Beijing Research Centre for Elementary Education, 500,000 of Beijing's 1.7 million elementary and grammar school pupils have access to online learning, with teachers answering questions on 13 subjects. The deadly lung disease SARS has also had an unexpected side effect in China: online learning is booming among pupils and students in Beijing. Tele-courses and online classes have widely replaced regular teaching in China's capital (Newsfox, 2003).

Given its size, need, technological capacity, and track record of success with improbable scenarios, China could become the global e-learning giant. In China, the development of e-learning may have far greater importance and urgency than in western countries. The recent marriage of technologies enabling online performance support may be an important accelerator for China's overall economic development (Levy, 2003).

Overseas Study Cost Considerations

When students go overseas to further their studies they face many issues and concerns including safety, adaptation, family worries and finance (Keele University, 2005). "The first thing students consider when deciding where to study abroad is the cost," claims Mia Ando from Green Road agency in Japan. "It's natural because that's the easiest part they can compare by themselves" (Education Travel Magazine, 2003).

In the 1990's New Zealand's cost of living was the lowest among competitors like the US, the UK, Canada, and Australia. "If you are shopping around for an overseas education, New Zealand is the cheapest study destination" (Green, 2002). This advantage no longer exists because of the recent increase in the value of the New Zealand dollar. In order to encourage students to study abroad, institutes must try their best to keep the expenses of overseas study down. One of the options is to offer programmes that can be studied partly in their home country instead of spending three or four years abroad.

Wintec's Strategic Directions

Waikato Institute of Technology (Wintec), is the second largest institute of technology/polytechnic in New Zealand. Founded in 1924 as the Hamilton Technical College, the institution has evolved over time from its original mandate to deliver largely technical and trades training in the Waikato region, to become a more comprehensive institution offering courses and programmes at certificate, diploma, baccalaureate and postgraduate levels that now serve local, regional, national and international markets.

In order to remain financially sustainable and to grow Wintec has set a number of strategic directions. The strategic directions relevant to this study are Academic Delivery and Internationalisation.

In order to deliver programmes that are relevant and meet the needs of students, Wintec will increase flexibility of academic delivery in the Waikato region, and offer niche programmes nationally and off-shore. Wintec believes that a combination of online and face-to-face delivery improves access and enhances students' educational experience and learning outcomes.

Internationalisation and collaboration with international partners is a cornerstone of Wintec's development plans. As more countries want their students to remain at home for tertiary study, the development of Wintec programmes delivered overseas is seen as important strategy.

One of the recent projects in China is the agreement between Wintec and Shandong University of Technology (SDUT) to offer the 2+2 and 3+1 Bachelor of Business programmes. Students at the School of Economics at SDUT have the opportunity to either spend two years at SDUT and another two years at Wintec, or they can spend three years with SDUT then one year at Wintec to gain a Wintec qualification. As a result, five students came in 2005 for the 2+2 programmes and 15 students have come in 2006. A further 63 students will come in 2007 on the 3+1 programme.

Purpose And Objectives Of The Study

Based on China's e-learning commitment identified previously and the existing relationship between Wintec and SDUT, the researcher wants to understand international students' e-learning preferences (in this case SDUT) so as to make recommendations to Wintec management for future Internationalisation and Flexible Delivery strategies formulation.

Specific objectives of the research are:

1. to ascertain existing Shandong University of Technology students' e-learning experience;
2. to explore Shandong University of Technology students' intention to enrol in Wintec's online programmes;
3. to determine Shandong University of Technology students' e-learning preferences.

METHODOLOGY

Respondents

Students at the School of Economics at Shandong University of Technology (SDUT) in China were invited to fill in a questionnaire (in Chinese). These students were either on existing 3 + 1 or 2 + 2 programmes or students who might come to study at Wintec in the future.

Questionnaire

The survey instrument was a self-administered print questionnaire consisting of eleven close-ended (fixed-alternative) questions. Respondents were given specific, limited-alternative responses and asked to choose the one closest to their individual view.

The covering page of the questionnaire explained the purpose, objectives, confidentiality and ownership of information to respondents.

The first part of the questionnaire (Questions 1 to 4) was made up of easy questions as a warm-up for respondents and to build their confidence.

Question One:

Which programme are you studying at the moment?

Question Two:

Which department do you belong to?

Question Three:

Your gender?

Question Four:

Your age?

The middle part of the questionnaire (Questions 5 to 9) asked the respondents to indicate their computer and internet experiences.

Question Five

How often do you use the internet for your studies?

Question Six

How often do you use a computer (excluding the internet) for your studies?

Question Seven

Please indicate how many online course(s) you have done when you were i) living in Shandong, ii) living in other part of China, iii) outside China.

Question Eight

Please indicate the level(s) of the online course(s) that you have done.

Question Nine

Was the language of your online course in Chinese, in English, in other language?

The end of the questionnaire (Questions 10 and 11), asked about their e-learning preferences.

Question Ten

Please indicate your e- learning preference.

Question Eleven

If Wintec online programmes are made available what will be your preferred mode of study.

Procedure

In February 2006, the questionnaire was drafted in English and reviewed by the staff of School of Communication and Research Office to confirm the validity of questions. The questionnaire was later translated into Chinese by staff at Wintec and proof-read by a local Chinese journalist in Hamilton. The Chinese version was emailed to Professor Lily Wang of Shandong University of Technology, China in April 2006 for checking.

In mid April 2006, six hundred questionnaires were posted to Professor Lily Wang, Economics Department of School of Economics, SDUT. Prof. Wang and her colleagues invited 600 students from their school to complete the questionnaires in early May 2006. Five hundred and sixty eight completed questionnaires were returned to the researcher in late May 2006 for analysis.

Data Entry and Analysis

Data from returned questionnaires were entered into the computer using Microsoft Excel software which could generate graphs for viewing and presentation.

Graphs generated by Microsoft Excel were transferred to Microsoft Word for report writing purposes.

Compliance with Protocols for Research

The process and procedure used in this research followed the Protocols/Principles for Conducting Research in a Maori Context developed by The Waikato Institute of Technology (Wintec, 2006), and also abided by the Human Ethics in Research protocols.

RESULTS

Of the 600 surveys distributed to students at the School of Economics at SDUT in China, 568 were completed, giving a response rate of 94.7%. All returned questionnaires were valid because of the willingness of students and careful supervision of the staff at SDUT.

The present study sets out to ascertain existing Shandong University of Technology students' e-learning experience, their intention to enrol onto Wintec's online programmes or courses and their online learning preferences. It is hoped that the insights gained will contribute to a better understanding of student e-learning behaviour and preferences and that these findings will act as a catalyst for strengthening a strategic commitment that has been made to advancing the cause of flexible delivery and of internationalisation.

- *Programmes of Study* - Most students involved in the research (68.5%) were studying degree programmes, followed by diplomas (31.3%) and sub-degree programmes (2%).
- *Departments* - A high number of students (53.3%) studied in the International Economics and Trade Department, followed by the Economics Department (23.8%). Five point one percents of the respondents studied in the Finance Department. The rest of the students (17.8%) were from other departments including Foreign Language, Business Administration, Mathematics and Computing, and International Business.
- *Gender* - Nearly 58.6% of respondents were females.
- *Age* - The largest segment of the total number surveyed fell in the 21-25 age bracket (71.3%), followed by 28.7% between 26-30 years.
- *Frequency of using the internet for studies* - A high proportion of respondents (58.2%) had never used the internet for study and around one third of them (33.5%) had used it between one to three days a week. Only a small number (4.8% and 3.5%) had used the internet for study more than three days a week.
- *Frequency of using a computer for study (excluding the internet)* - More than half (55.42%) of the students had used a computer for study, and similar proportions (11.55% and 11.19%) had used it between one to three days and four to six days for study. Of those surveyed, 21.85% of them had never used a computer for study.
- *Number of online course(s) completed* - A vast majority of the surveyed students (94%) had not done an online course before. A few of them (4%) had done one online course, and the same number of students (1%) stated they had done either two online courses or three or more online courses.
- *Location of online course(s) completed* – For the respondents who had done three and more online courses, a high proportion (47.1%) did so outside China. The difference was not significant between those who lived in Shandong (29.4%) or other parts of China (23.5%).

Of students who attempted two online courses half were in Shandong, 30% in other parts of China and 20% outside China.

For those who had completed just one online course, 40% were in Shandong, 26.2% were in other parts of China and 6.2% were outside China.

An almost equal number of students in the three areas had never done an online course before.

- *Level(s) of online course(s) completed* – Results show that 122 students had done one online course before. Of those 23.8%, 22% and 23% did a course in diploma, degree and other level courses respectively. More than average (31.1%) did a certificate online course. 22 students had done two online courses and more than half of them (54.5%) did certificate courses; 27.2%, 15.6% and 4.5% did diploma, degree and other level courses respectively. Only 9 students had done three or more online courses before and most of them (55.6%) were involved in degree programmes. The rest of them had done diploma and other level courses.
- *Language of online course(s) completed* – Chinese is the most commonly used language in online courses done by respondents. Of the 92 students who had done one online course, 53.3% did it in Chinese followed by 30.4% in English and 16.3% in other languages. Sixteen respondents had done two online courses, of whom 62.5% did the courses in Chinese and 37.5% did them in English. Of the 16 students who had done three and more online courses, the majority of them (93.7%) did them in Chinese and only one respondent did all three online courses in English.
- *General online learning preferences* - A significant majority (70.9%) indicated they preferred to have some courses online and only a small fraction (19.3) preferred having most courses online. Very few (5.1% and 4.7%) opted for having all courses and no courses online, respectively.

Possible Wintec Online Programmes Options

The following percentages are based on replies from the total number of respondents, since not all respondents chose all the options provided; the total percentages may not add up to one hundred.

- For the option '*Study all courses at Wintec with some online components*', only a small fraction (13.7% and 9.9%) indicated this was their *most preferred* and *preferred* choice. A relatively high number (24.6% and 29.4%) reported this option was *not preferred* and *least preferred*. 18.1% of the respondents had no particular preference.
- A large number (38.9%) of those surveyed stated '*Study all Wintec courses online in China*' as the *least preferred* option with a further 1.6% identifying *not prefer*. An equal number (10.6%) said this was either their preferred or most preferred choice. A small fraction (11.1%) did not show any preference.
- The '*First study some courses online in China then complete programme at Wintec*' option generated a high number (29.9%) of *no preference* responses. Eighteen point three percents and 20.6% rated this as their *most preferred* and *preferred* option. Twenty one point seven percents of the respondents chose *not prefer* for this option and only 5.6% said this was their *least preferred* one.
- Option '*First study some courses at Wintec then complete programme online in China*' was *preferred* by a significant number (38.6%) of surveyed students and a further 13.6 % indicated this was their *most preferred* option. Twelve point five percents respondents reported this choice was *not preferred* and very few (4.6%) put it down as *least preferred*. Twenty six point eight percents showed no preference at all.
- A high number of respondents (41.9%) indicated '*Start programmes at Wintec then study some courses online in China and finish programme at Wintec*' was their *most preferred* option and a further 19.0% stated they *preferred* it. Only a small number of those surveyed (9.9% and 12.0%) stated *not preferred* and *least preferred*. 13.4% had no particular preference.

In conclusion the option '*Start programmes at Wintec then study some courses online in China and finish programme at Wintec*' is the *most preferred* one supported by 60.91% (*most preferred and preferred*) respondents followed by '*First study some courses at Wintec then complete programme online in China*' option with more than half (52.12%) of the students supporting it.

The most unpopular option was ‘Study all courses at Wintec with some online components’ with 54.05% rated it as *least preferred* and *not preferred*. ‘Study all Wintec courses online in China’ was the next most unpopular option with a 40.49% negative response.

CONCLUSIONS AND RECOMMENDATIONS

The findings of this study provide useful insights into online course delivery and indicate the need for the development of a range of delivery packages that offer international students the flexibility they desire.

To be more competitive in the world market, it is important to be computer and internet literate, so the Chinese government and education authority institutes are putting more resources in online development in education and training. The SDUT study shows that computers and the internet are being used more and more often by students in their studies and a number of students used Chinese, English or other languages for their online courses.

To deliver online courses to overseas students, institutes have to understand the potential differences in cultural, social, legal, technological and economic aspects. Also, international students will have a range of learning or studying styles and preferences.

The SDUT students preferred to have some courses in their programmes face to face; they may believe it is important to maintain a certain level of interaction between teaching staff and fellow students. Also, this study shows that the most preferred online delivery option is to begin a programme at Wintec, which gives them the opportunity to experience overseas teaching and learning methods, as well as social and cultural differences. Students would then go home and continue the programme online but still keep in contact with staff and fellow students. During this period they could save up money and catch up with their friends and family. Towards the end of the programme they would come back to Wintec to complete major assignments and examinations and possibly attend the graduation ceremony. Some may wish to seek employment in New Zealand.

Given the existing and future development of computing and internet technology plus the high costs of studying overseas, students are ready to choose those institutes who can provide flexible, mixed mode delivery and cost-effective courses for them.

Educational institutes that want to offer online courses to overseas students need to investigate potential students’ online learning preferences, as different countries have different cultural, social, legal, technological and economic backgrounds.

For programmes which take more than one year to complete, institutes need to identify when it is best for students to go overseas and when to study online at home. Also, different packages should be designed for students in different countries.

At the individual course level, institutes have to analyse the types of courses that are suitable to be offered online. For example, fact based and number based courses like biology or statistics will be easier for students to learn online but courses with interpersonal components like Business Communication and Buyer Behaviour may require face-to-face staff input to be effective.

Another issue that needs to be addressed by institutes is the external recipient system’s compatibility with the delivered online materials. As an example, a focus group of students who were conducting formative evaluation of the development materials (Laurillard, 1994) had a lot of difficulty with remote access to the course. These difficulties were mostly due to incompatible hardware configurations, slow modems or instability of the software.

Greater investment in computer and internet resources, including staff training, is another area institutes cannot ignore. Teaching staff should be competent and confident to work with international students and overseas staff in the online environment.

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