The Benefits and Impacts of E-learning and Barriers to its Diffusion in Higher Education in Hong Kong: Through the eyes of Teachers and Researchers

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Abstract

Hong Kong, a populated city, meets all the necessary technological and economic conditions for e-learning to be thriving in higher education. However, online survey results of students and teachers of a major tertiary educational institution over a period of three years showed that e-learning is not nearly as popular as anticipated and traditional face-to-face learning remains the preferred mode of study. Are the benefits and impact experienced in other countries equally applicable to Hong Kong? What are the barriers to e-learning diffusion in Hong Kong? Answers to these questions were sought from the teachers and researchers of e-learning in Hong Kong higher education.

The research was based on a grounded theory methodology and used a three stage mixed-method design for data collection and analysis. The key informants were the teacher-researchers in higher educational institutions in Hong Kong. Several potential issues arising from three rounds of large scale online surveys were explored with them through in-depth interviews, which generated a framework for analysis, and based upon which a follow-up questionnaire survey was formulated and conducted. Inferences were drawn from the combined results of the online survey, the interviews, and the follow-up survey.

The results from the study showed that the benefits, impact and barriers identified were broadly similar to those experienced in other countries. Whilst some personal and social conditions such as age, gender and, family and home conditions are not perceived to be important factors in hindering diffusion, certain unique social conditions in Hong Kong — such as the two official languages, the popular mixed-code phenomenon, the teacher-centred and assessment-centric culture, — are perceived to contribute to some extent to the hindrance of e-learning diffusion. However, the teachers and researchers see more serious barriers in the unfavourable perception and negative attitudes of students and teachers towards e-learning and the lack of self-motivation and self-discipline. Based on these findings, certain areas of further study were suggested for future research.

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Glossary of Acronyms

CE = Continuing Education

CHC = Confucian heritage Culture

CLL = College of Lifelong Learning

CMBP = Capacity Mileage Building Programme

CMS = Course Management System

FT = Full-time

HK = Hong Kong

HKCAAVQ = Hong Kong Council for Accreditation of Academic and Vocational Qualifications

HKSAR = Hong Kong Special Administrative Region

HTML = HyperText Markup Language

IDB = International Database

IMF = International Monetary Fund

ICT = Information and Communications Technology

ICQ = a homophone for "I seek you" (an instant messaging system)

JQRC = Joint Quality Review Committee

LMS = Learning Management System

OFTA = Office of the Telecommunication Authority

PC = Personal Computers

PPP = Purchasing Power Parity

QAA = Quality Assurance Agency for Higher Education

SLMS = School Learning Management System

UGC = University Grants Committee

UN = United Nation

Chapter One

Introduction – The Purpose of the Research

Background of Research

With Hong Kong's drive towards a knowledge-based society[1], the pressure to learn has become greater than ever even for those well past the normal age for schooling. Lifelong learning is not just a buzzword but also a way of life in Hong Kong. Under a headline of "Managing an Ageing Problem", the *South China Morning Post* reported that:

> "Hong Kong has the lowest fertility rate in the world and, coupled with a longer life expectancy, the population demographic is expected to remain on an ageing trend for a while. According to the Census and Statistics Department, the percentage of the population 65 and over will rise to 27 per cent in 2033 from 11.7 per cent in 2003. " (Turner, 2005)

That same author also suggested that to manage the problems brought about by an ageing population, both workers and employers have to "think outside the box" (e.g. workers staying on their jobs longer, and flexible work patterns or days) and to "adopt a lifelong learning mindset". Such suggestions clearly reflect a trend in the developed countries in Europe and North America where manual labour jobs have been gradually replaced by service industry jobs, in particular, those in the knowledge industry (e.g. finance, education, high tech industries). Such jobs typically require continuous updating of knowledge and skills. No wonder a

[1] HK Government Policy Objectives 2000, Ch. 11: 5.

lifelong learning mindset or a commitment to lifelong learning is becoming essential to those in professional and managerial jobs.

Indeed, Hong Kong is no exception to this world trend. The Honourable Dr. Leung Che Hung, Chairman of the Elderly Commission of Hong Kong Government, recently outlined in his speech at the Public Service Conference 2010 entitled "Enriching the lives of the elderly" [2] that the life expectancy in Hong Kong has extended significantly since 1971 (from 67.8 to 79.8 for males; from 76.3 to 85.9 for females) and is projected to reach 82.8 and 89.2 by 2029 for males and females respectively. He pointed out that since the elderly of today and the future are better educated, in better health with better spending power, Hong Kong should consider better educational services for them as well as other essential services such as health, transport, housing, and leisure.

Apart from the elderly, the Government is also supporting lifelong learning for new migrants through its high power Women's Commission which is tasked "to take a strategic overview over women's issues, develop a long-term vision and strategy for the development and advancement of women, and to advise the Government on policies and initiatives which are of concern to women"[3]

Among the Commission's many initiatives, the most important and well-known one would be its Capacity Mileage Building Programme (CMBP), which is designed to

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[2] "*Enriching the Lives of the Elderly*", Speech by Dr. Leung Che Hung, Chairman, Elderly Commission, at the Public Sector Conference 2010, "Public Service 2020", 10 November 2010. (downloaded on 29 Dec 2010. www.ps2020.gov.hk/.../images/.../CH%20**Leung**%20-%20Enriching%20the%20lives%20of%20the%20elderly.ppt)

[3] (extracted from the official website for Women's Commission, downloaded on 05 January 2011, http://www.women.gov.hk/colour/en/empowerment/CBMP.htm).

encourage women of different backgrounds and educational levels to pursue lifelong learning and self-development. CMBP aims "to equip women with a positive mindset and enhance their inner strength so that they can cope with different life challenges". Courses are mainly through distance learning (radio broadcast) plus some face-to-face classes. To encourage enrolment further, materials with public interest are broadcast on all electronic media as well as print media.

All these initiatives and efforts of encouraging lifelong learning are obviously supported by the Government at the policy level. A casual scan of past annual Hong Kong Chief Executives' Policy Addresses will find repeated occurrences of policy agenda items such as transforming Hong Kong's economy into a knowledge-based economy, and the ambitious expansion of the tertiary education participation rate from 30% to 60% by 2010[4]; that is, over a period of 10 years. Remarkably, this latter ambitious goal was achieved in 2009 thanks to the rapid growth of the highly competitive self-financed tertiary education sector, mainly through additional sub-degree level full-time programmes.

ICT in Education

It might be relevant to point out that Hong Kong Government education polices for the primary and secondary sectors have also been quite ambitious in recent years. As recounted by Yuen et al. (2010), following the implementation of three successive "ICT in education" policies between 1998 and 2007, the mean student-computer ratio in Hong Kong schools decreased from 23:1 in 1998 to 6:1 in 2006, together with substantial improvements in pedagogical and technical support for ICT use in schools (p.8). There was also a remarkable increase in the presence of lifelong

[4] Chief Executive Policy Address, November 2000.

learning pedagogy in schools as perceived by the school principals in Hong Kong. The school principal's vision for lifelong learning pedagogy as found by Yuen et al. (p. 88) in their surveys of the principals is fivefold.

- To individualize student learning experience in order to address different learning needs.
- To increase learning motivation and make learning more interesting
- To foster students' ability and readiness to set their own learning goals and to plan, monitor and evaluate their own progress
- To foster collaborative and organizational skills when working in teams
- To provide activities which incorporate real-world examples/ settings/ applications for student learning

Definition of an "older person"

Although age is only one of the many issues related to this study of e-learning, it may be helpful to adopt a working definition of "older person" for the purpose of this research study. Most developed countries have accepted that someone aged 65 or more is considered an older person. This definition may be somewhat arbitrary as it is largely associated with the age at which one can begin to receive pension benefits in those countries (there has been a world trend in raising this threshold for full pension, e.g. France). At the moment, there is no international standard numerical criterion, but the UN generally uses 60+ years in its literature as the cutoff for reference to an older population.

Although the concept of old age has been intuitively understood, there is no general agreement on the exact age at which a person is considered "old". The common use of a calendar age is simple but assumes a consistent equivalence with biological age related to certain physical ability or mental capacity. That assumption is clearly not necessarily correct. In some countries (e.g. African countries) a definition of old age as being "any age after 50" has been loosely adopted in their culture. [5]

As this research is about a certain form of technology-based learning, it would be too limiting to adopt a definition of 65 and above as there would be very few, if any, learners in my sample aged 65 or above who are still engaging in organized educational programmes. Therefore, I have adopted a working definition of "50 and above" for an "older person" instead, following the convention of a "Third-age learner". A third-age learner is someone who, on one hand, has clearly passed the stage for formal basic school learning, but on the other hand is still relatively healthy and capable of active learning in an organized programme of study. I prefer the term "older person" in this research project instead of "elderly" or "old person" as the aim of enquiry is to find out whether the relatively older learners are disadvantaged in e-learning in comparison with their younger counterparts. Therefore, adopting the definition of a third-age learner (age 50+) as the dividing line for delineating the two groups does not seem unreasonable. As it turns out, even with this working definition of "50 and above", only a very small number of older students responded to the online surveys in this study. More details will be reported in ***Chapter Five, Presentation of Findings and Discussion – Web surveys.***

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[5] (See *Proposed Working Definition of an Older Person in Africa for the MDS Project,* http://www.who.int/healthinfo/survey/ageingdefnolder/en/index.html, downloaded on 4 Jan 2011)

Continuing education and adult education in the Hong Kong context

The sub-degree education sector in Hong Kong is currently dominated by the continuing education arms of the eight government funded universities. A case in point is: the institution under observation in this study has an annual enrolment of over 100,000 of which nearly 9500 are full-time students. According to Rogers (2002), "continuing education was seen as opening formal education to wider groups and extending its range and validity into later life rather than cutting it off in the first two or three decades of life." (2002, p. 4) However, these continuing education arms of local universities offer a wider range of programmes catering for an even wider audience than the parent universities do. Not only do they offer conventional programmes of continuing education for personal or professional development of working adults, they also offer full-time university transfer (bridging) programmes at the sub-degree level (such as higher diplomas and associate degrees) to typical school leavers. Some of these continuing education units offer, mostly in conjunction with an overseas university, degree and post-graduate degree programmes. With such a comprehensive range of programmes on offer, these continuing education units are indeed offering lifelong learning opportunities to all walks of life.

The concept of continuing education is often confused with the concept of adult education in Hong Kong. It would be useful to clarify what adult education means for the purpose of this study.

Indeed, what do we mean by "adults"? Generally, an adult is understood to be a fully-grown person who is considered legally responsible for his or her actions, e.g. marriage or voting in a civic election. As the age threshold for recognition of

adulthood differs from country to country, it becomes necessary to understand the concept of adult education from different perspectives instead of by defining adult education simply as the education of those over a certain age. Jarvis (1995) argued that "adult education", because of its historical background (especially in the United Kingdom context), is not quite the same as the "education of the adults". The former is linked to a "middle-class, leisure time pursuit... a conception of a front-end model of education" (1995, p. 20), whereas the latter requires a clear definition of what an "adult" is.

What makes the education of adults different from other forms of education; for example, the education of children? As Jarvis analyzed, various suggestions by authors such as Knowles (1980, 1984, 1990 & 1995) seem to converge on the idea that adult education implies an educational process conducted in an adult manner while recognizing the process of transition from childhood to adulthood is continuing and gradual.

Adult education is often used interchangeably with the term "continuing education", giving emphasis to the "post-initial education" nature of such educational provision. Rogers (2002) argued that the term "lifelong learning" is more appropriate than "adult education" as "Lifelong learning sought to change the focus away from the competitive to the situated, away from institutionalized education to 'lifeworld learning'." (2002: 4)

In this study, Jarvis (1995) referred both adult education and the education of adults to the educational process adults participate in with "adulthood refers [referring] to

the fact that both individuals' own awareness of themselves and other people's perceptions of them accord them with the status of adulthood within their own society." (1995, p. 22)

However, it should be stressed that although this study is based on personal observations, expert opinion, and data collected from teachers and students of one of the major continuing education organizations in Hong Kong, the implications and conclusions drawn from the study are by no means limited to adult students in conventional continuing education programmes. The target continuing education institution (described in greater detail in ***Chapter 2, Context of the Enquiry***) offers a comprehensive range of full- and part-time programmes to both school leavers (full-time sub-degrees) and working adults (personal or professional development programmes). The focus of this study—namely, the benefits, impact, and barriers of e-learning in Hong Kong—is aimed at students in general rather than only at working adults.

What is e-learning?

It is necessary to define what e-learning is for the purpose of this study. E-learning (or eLearning) is commonly used to describe any learning or training that relies on computer technology and the Internet for its delivery to the learners. E-learning is not the only commonly-adopted term in the popular media to describe this mode of technology-based learning. It is also referred to, even in scholarly publications, as Web-based Training, Computer-based Training, Online Learning, and Technology Assisted Learning, among others. Older, more descriptive terms such as Networked Learning and Distributed

Learning are also used in the literature. In short, e-learning is mainly associated with multimedia technology, and depends on Internet and Web technology for its delivery.

An older but more descriptive term is Networked Learning (or Learning Networks). Harasim et al. (1995) defined learning networks as "groups of people who use CMC (computer mediated communication) networks to learn together, at the time, place, and pace that best suits them and is appropriate to the task" (p. 4). At the heart of a typical learning network is a Learning Management System (LMS) (e.g. WebCT) and a course web site. The basic contents of the course and additional learning materials with audio or video components are accessed through the course web site. Relying on the Internet and web technologies is considered the best in meeting the learning needs of working adults who are unable to adhere to a fixed tutorial schedule to meet synchronously with their teachers and classmates. The asynchronous nature of these technologies gives the important advantage of time independence; thus, the term Networked Learning, which emphasizes a network of learners as well as the physical Network (the Internet) that provides the technological support to the human network, is actually a more preferred term to me.

However, based on the frequencies of hits in a recent Google search, "e-learning" has become the most frequently used name among the many similar terms used in cyber space. This is also true in the more restrictive space of academic writings according to Google Scholar search. For this reason, the

term "e-learning" has been chosen for the purpose of this study. The top five more popular names according to Google search and Google Scholar search are:

	By Google Scholar search (hits)	By Google regular search (hits)
e-Learning	206,000	23,300,000
Online Learning	108,000	3,330,000
Network Learning	37,300	177,000
Web-based Learning	34,400	318,000
eLearning	33,100	19,800,000

Table 1.1: The Top Five More Popular Names on e-Learning according to Google Search and Google Scholar Search (searched on 4 January 2011)

Also, the above statistics show that the form 'e-learning' is clearly preferred over the form 'eLearning' in academic writings, although the general use of the two terms in Web pages is fairly close.

Some working definitions of e-Learning for this study

Wikipedia (http://en.wikipedia.org/wiki/E-learning)

1.

"E-learning comprises all forms of electronically supported learning and teaching. The Information and communication systems, whether networked or not, serve as specific media to implement the learning process. E-learning is essentially the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, virtual classroom opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be

self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio."

2. Derek Stockley (http://derekstockley.com.au/elearning-definition.html)

".. .. the delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material."

3. WEBOPEDIA (http://www.webopedia.com/TERM/E/e_learning.html)

"..... education via the Internet, network, or standalone computer.

E-learning is essentially the network-enabled transfer of skills and knowledge. E-learning refers to using electronic applications and processes to learn. E-learning applications and processes include Web-based learning, computer-based learning, virtual classrooms and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM."

Assumptions about e-learning for the purpose of this study

1. Online discussion, either asynchronously or synchronously, is considered an essential part of e-learning compared with traditional face-to-face or classroom learning.

2. Many teachers/ professors blend e-learning technologies such as online

discussions into their regular face-to-face (f2f) classroom teaching but may not label their courses as e-learning. Such blended learning practice, if substantial and well-designed pedagogically, should be regarded as **Blended Learning** or **Integrated Learning** approaches. Blended Learning or Integrated Learning refers to a hybrid form of learning that combines e-learning and traditional face-to-face learning. It describes the practice of blending or integrating e-learning into traditional face-to-face learning processes.

It should also be noted that because of Hong Kong learners' strong preference for face-to-face learning, blended learning is now clearly the preferred choice of teachers and institutions although the learning mode is not necessarily labeled as such with the label "blended learning", the label has not been widely used except by researchers of e-learning. Therefore, while the practice in Hong Kong is often blended learning, the label generally remains "e-learning".

For the purpose of this study, Blended Learning or Integrated Learning is treated as a special case of e-learning rather than a different mode of learning. However, often in such cases, the teachers or the students regarded e-learning as only add-ons to the existing face-to-face mode of learning and sometimes even as optional components to the course.

The research puzzle

As the landscape of education is shifting gradually towards a greater variety of

programme choices, modes of study, and providers, so is the delivery of instruction gradually incorporating greater use of technology. Such changes are induced by the changes of life-styles of learners who are, on the one hand, under greater pressure to learn, and on the other find it more and more difficult to engage in the traditional mode of classroom face-to-face learning. The rise of e-learning, which promises to offer a more flexible learning mode to meet the learning needs and life-styles of busy working adults of the so-called modern day knowledge-based society, has attracted much attention, not only in academia but with the public at large. Every now and then, articles about the success (or expected success) of e-learning appear in the popular local media. However, has e-learning been successful as reported or is it more hype than reality? How well is e-learning actually accepted in HK by the students and teachers, particularly in tertiary education?

The major continuing education providers in Hong Kong regularly conduct surveys to gauge demand for CE programmes. In its Continuing Education Demand Surveys for 2007/08 and 2009/10 reports, the School of Professional and Continuing Education of the University of Hong Kong estimated about 1.23 and 1.39 million learners in Hong Kong engaged in continuing education programmes annually, spending around HK$ 14.1 and 14.4 billion respectively for the two years[6]. In other words, over the period of 2007-2010, the overall demand for continuing education for all modes of study, including e-learning, has remained basically steady.

[6] Survey on the Demand for Continuing Education in Hong Kong 2009/2010: Comparison and Analysis, HKU SPACE Centre for Research in Continuing Education & Lifelong Learning, 2010. &
Survey on the Demand for Continuing Education in Hong Kong 2007/2009: Comparison and Analysis, HKU SPACE Centre for Research in Continuing Education & Lifelong Learning, 2008.

The more interesting statistics reported that are relevant to the present study are the negative attitudes of learners towards e-learning. Despite Hong Kong's apparent readiness to embrace e-learning — Hong Kong has an excellent Internet technology infrastructure with high availability of broadband networks and widespread ownership of laptops—only 40.4 % of respondents showed positive attitudes toward e-learning in 2007/08. Remarkably, in the 2009/10 survey the percentage of respondents showing positive attitudes remained basically unchanged at 40.5%. In other words, the popularity of e-learning in Hong Kong, at least with respect to current and prospective continuing education students, has not grown at all over a span of three years. Furthermore, of the 51.9 % of respondents in the 2009/10 survey (50.7 % in 2007/08) who showed negative attitudes towards e-learning, 50.1 % (60.3 % in 2007/08) said that their preference for face-to-face teaching was the reason that they did not opt for e-learning. These survey results directly contradict all the expectations and predictions of HK government officials, educators, and the media of rapid growth of e-learning in Hong Kong.

Even for those respondents who showed positive attitudes towards e-learning in 2007/08, 73.6 % of them want 50% or less of the course component in their programme of study to be delivered online. In other words, learners are saying that "a little e-learning may be a good thing but not too much". This attitude towards e-learning of Hong Kong learners obviously is disappointing to advocates of e-learning and seems to be significantly different from that of other similarly technology-ready countries. For comparison with one of the nearby developed countries, Australia, according to the 2008 *Australian Flexible Learning Framework* e-learning Benchmarking Survey (2008a), 33% of students would like "a lot" of e-learning and

47% of the students said that e-learning was a positive factor in their choice of training providers. There seems to be a clear trend of growing acceptance and expectation of e-learning as a continuing education delivery mode by both teachers and students in Australia but not in Hong Kong. Granted, Australia is much more dispersed geographically and therefore, at least for its citizens living away from the urban areas, the advantages for e-learning seem obvious. However, it appears e-learning is equally popular with urban Australian learners. Why is it that e-learning, despite its many promises, has not flourished in Hong Kong? What are the reasons against or barriers to greater adoption of e-learning in Hong Kong?

The popular media often assume e-learning suits the life-styles and learning habits of the young so-called "Net" generation better because of the belief that the young generation is more in tune with the Internet and the Web — and how information is disseminated and acquired. It has been argued that younger learners are more comfortable with searching for information on the net than the traditional way of using the library and other sources of printed materials. In comparison, it is often believed that the older generation is much less comfortable in general with using the Internet to pursue their learning. Is this true or is it merely a myth or even prejudice? Could the older learners (defined to be those of age 50 or more for the purpose of this study) be just as comfortable and effective with e-learning? Would the perceived benefits of e-learning be equally applicable to older learners as to younger learners?

Another puzzling question relating to e-learning development in Hong Kong concerns the two official languages policy in Hong Kong — Chinese and English. Although

English is the chosen medium of instruction in almost all tertiary educational institutions in Hong Kong, English remains the second language for the public at large. Even among the better educated university students, the preferred language in the classrooms and on campus in general is more likely a mixture of Chinese and English (called code-mixing or code-switching in linguistics). To what extent does this cultural dilemma of two languages facilitate or handicap the development of e-learning in Hong Kong? Moreover, are there any social conditions of Hong Kong such as housing conditions, family conditions, or gender differences that might impede greater adoption of e-learning?

The Research Focus and importance of study

The proposed research project aims to explore the benefits and impact of e-learning through the eyes of the teachers and researchers of e-learning in tertiary education in Hong Kong. More importantly, the study also aims to examine their views on the barriers to greater adoption of e-learning in Hong Kong.

As the research perspective adopted is interpretive (or Constructivist), answers sought for the research puzzle rely largely on subjective value judgements of the informants to the study; namely, learners, teachers, and researchers in the field of e-learning in Hong Kong. The research methodology is based on a phenomenological approach because one of the objects of study is to look for any observable human behaviour that might give evidence of benefits to, or impact on, the learners whilst the learners are actively making meaning of their world and are, at the same time, being affected by their learning experience in their understanding of the world around them. However, in designing this research, the researcher has to rely largely upon the learners

themselves and teacher-researchers to make the observations rather than to make the observations directly himself.

The research also aims to enquire into the following related smaller questions:

1. Are there differences between older and younger learners in Hong Kong in terms of their perceived benefits to be derived from e-learning? Are the older Chinese learners in Hong Kong less receptive to e-learning because of the technological barrier?
2. To what extent or whether the predominant language of the Internet, English, has been a barrier (or help) to Hong Kong learners through e-learning?
3. Are there any personal or social conditions that likely facilitate or hinder learning in e-learning?
4. Are interactions among students and between students and their teachers any different in e-learning?
5. Is the lack of socialization in e-learning a major barrier to e-learning in Hong Kong?

Answers sought for the above questions will hopefully help identify the key issues in e-learning diffusion in Hong Kong within its educational and cultural context.

The study also aims to discover insights into more effectively planning e-learning implementation for tertiary educational institutions as well as policy formulation for the Government and its agencies concerned with education and human resource capacity building. Given Hong Kong's heavy reliance on its only resource—human resources—the demand for training and re-training (sometimes referred to as 're-

skilling' and 'up-skilling') is both massive and continuous. Studies that can lead to unlocking the potential of e-learning for human resource development are not only important for enhancing practice in education but also for shaping the directions in education for years to come (Rosenberg, 2001).

Structure of the thesis

The context of enquiry — Hong Kong as a region, its social and cultural characteristics, higher education landscape, technological infrastructure, two official languages, and Government policies on education — are set out in Chapter Two. Chapter Three reviews literature relevant to this study and to the foundation for the enquiry. Chapter Four outlines the theoretical framework and methodology employed that guided the study. Data collected from the online surveys and the in-depth interviews are presented and analyzed in Chapter Five and Six respectively. Finally, Chapter Seven then draws together findings of the study and, in light of the findings, identifies certain areas of weakness in the study and also certain areas for further investigation. A list of references and a set of appendices conclude the thesis.

Chapter Two

Context of the Enquiry

This research aims to examine the benefits and impact of e-learning and the perceived barriers to its greater adoption in higher education in Hong Kong. There are three main aspects of the context of Hong Kong as a society that are highly relevant to this research.

- social-cultural context
- technological-economic context
- Hong Kong higher education context

The following sections set out the more salient features of these three aspects of the context of this enquiry.

Social-cultural

Hong Kong is a small region of about 1,104 sq. km situated at the southern end of Guangdong province in China. It has a population of 7 million made up of largely ethnic Cantonese-speaking Chinese. Hong Kong was a former British colony until its return to China in 1997 when it became a Special Administrative Region of China. Although Hong Kong is now part of China, the fabric of its social structure has remained largely intact under the "One Country, Two System" principle adopted by the central government in Beijing. The people of Hong Kong enjoy a high degree of freedom, including the freedom of movement and speech.

Of particular relevance to the study of e-learning in Hong Kong is that, unlike the mainland, there is practically no censorship of any form of online medium. Information, including that with politically charged content, can be freely obtained online. This gives ample freedom to local or overseas education providers to offer e-learning programmes to Hong Kong learners. As e-learning can take place without the constraints of time, place, and space, such freedom suits the lifestyle of Hong Kong people who are known to be fast paced and busy all the time., The favourable technology infrastructure in Hong Kong should mean that there is high availability of

e-learning . Whether there will be sufficient demand for e-learning is, of course, another matter and is one of the issues this research aims to explore.

However, unlike a large region with scattered population such as mainland China, Canada, Australia or New Zealand, Hong Kong, being a very compact city with excellent public transport, appears to be less in need of e-learning as people can move fairly quickly from one place to another to attend traditional face-to-face classes.

Population profile

According to the government published census statistics in May 2010, about 12%, 28%, 47%, and 13% of the 7M population are under the age of 15, 15-34, 34-64, and 65 and over respectively. In comparison with the world average (International Database, U.S. Census Bureau) and with its frequent comparators—China, Singapore, and Taiwan—Hong Kong clearly has an ageing population,

Age Group	World Average	**Hong Kong**	China	Singapore	Taiwan
Under 15	26.5%	**12.5%**	17.9%	14.1%	16.2%
15-34	32.8%	**28.1%**	31.8%	27.0%	30.7%
35-64	32.9%	**46.6%**	41.7%	49.9%	42.3%
65 and over	7.8%	**12.8%**	8.6%	9.0%	10.8%
Total	100.0%	**100.0%**	100.0%	100.0%	100.0%

Table 2.1: Population Profile of Hong Kong compared with World Average and some selected Asian countries

Source 1: HK census statistics, HK Census and Statistics Department, (http://www.bycensus2006.gov.hk/FileManager/EN/Content_941/06bc_hhinc_slides.pdf, captured on 10 Aug 2010.)

Source 2: International Database (IDB), U.S. Census Bureau, (http://sasweb.ssd.census.gov/idb/worldpopinfo.html, captured on 10 August 2010)

With a continued decline in birth rate for the past decade, the adverse impact on the education system, particularly at the primary school level, has been painful. Many

schools which failed to attract sufficient students were forced to close down and teachers lost their jobs. The statistics published by Government's Census and Statistics Department showed the devastating decline of the primary school sector by 2009/10 in comparison with 2004/05:

	2004/05	2009/10	Decrease (%)
No. of primary schools	759	582	23.3%
Primary school enrolment	447,137	344,748	22.9%
No. of primary school teachers	23,805	22,219	6.7%

Table 2.2: Statistics on the change in Primary School Sector Between 2004/05 and 2009/10 in Hong Kong

Source: HK Census Statistics, HK Census and Statistics Department, (http://www.censtatd.gov.hk/hong_kong_statistics/statistics_by_subject/index.jsp?subjectID=13&charsetID=1&displayMode=T, captured on 1 Sep 2010.)

The job loss of 6.7% may seem mild in comparison with the 22.9% drop in student enrolment. The full impact may have been greatly reduced by Government's provision of additional staff to the schools to introduce small class teaching and thereby enhance teaching quality. However, there is naturally a price to pay in terms of public spending and, more importantly, Government action to remedy the adverse impact of a declining student population may be limited. As the decline in student population is beginning to hit the secondary schools, further and perhaps even greater pain will be felt.

This adverse impact will no doubt eventually ripple through the tertiary sector with devastating effect upon a tertiary sector that has been expanding over the past decade, partly due to the change to a 4-year degree system. To remedy this imminent decline in student numbers, the Government has been trying to develop Hong Kong into a regional education hub; in other words, to import students from outside to fill the spare capacity in the government funded institutions.

Labour force

Hong Kong people have been used to a fairly high standard of living. Again according to Hong Kong census statistics, the size of the labour force was about 3.7M in 2009 with an unemployment rate of about 5.4% (up from 3.6% in 2008) with a median monthly employment income of USD 1,346 ($1,282 in 2005). The poor condition of the economy in 2008/2009 resulted in a rising unemployment rate and an overall salary freeze, yet Hong Kong is still classified as one of the advanced economies in the world (e.g. International Database (IDB), U.S. Census Bureau).

Gross income is often not a good indicator of purchasing power or standard of living, however. Some economists have advocated the use of Purchasing Power Parity (PPP) exchange rates through adjustments made to nominal bank exchange rates of currencies in relation to purchasing power of the concerned economies. Worldsalaries.org calculated that Hong Kong's median monthly income after such adjustment based on IMF PPP exchange rates and taking into account compulsory deductions such as tax, social security, and the like, is about $1,173. That puts Hong Kong (ranked 17) below comparable neighbouring economies of Taiwan, Singapore, Korea and Japan but still significantly higher than China.

For comparison, selected Asian economies and those with closer ties to Hong Kong and of higher average monthly employment income than Hong Kong (in net constant 2005 International dollars, adjusted with compulsory deductions.) published by Worldsalaries.org (http://www.worldsalaries.org) are listed below:

Country	Net Monthly Income constant 2005 US$		Compulsory Deductions	Weekly Hours
	[A]	[B]		
1. **UK** average income	PPP $ 2,643	$ 2,677	27%	*39.6*
2. **Korea** average income	PPP $ 2,616	$ 2,074	12%	45.7
4. **Australia** average income	PPP $ 2,380	$ 2,336	20%	34.7
5. **U.S.** median income	PPP $ 2,313	$ 2,313	18%	
7. **Taiwan** average income	PPP $ 2,259	$ 1,224	10%	42.0
9. **Japan** average income	PPP $ 2,126	$ 2,500	18%	41.3
13. **Canada** average income	PPP $ 1,878	$ 1,876	28%	*31.7*
14. **New Zealand** avg income	PPP $ 1,858	$ 1,776	22%	34.8
16. **Singapore** average income	PPP $ 1,731	$ 1,615	22%	*46.5*
18. **Hong Kong** median income	PPP $ 1,562	$ 1,173	5%	47.0
China average income	PPP $ 669	$ 153	8%	

Table 2.3: Monthly Employment Income of Selected Countries as Published by Worldsalaries.org in 2005

Source:

[A] Interbank nominal exchange rate, Oanda.com; historical currency converter

[B] World Economic Outlook Database, September 2006, International Monetary Fund

(http://www.worldsalaries.org/allsectors.shtml captured on 10 Aug 2010

Despite the recent economic slow-down, Hong Kong is still more fortunate than most other countries in the world. A good education, although not cheap, is still generally affordable for most working adults and pursued by many of them. A survey conducted in 2008 by the School of Professional and Continuing Education, University of Hong Kong (HKU SPACE, 2008) found that the participation rate of working adults (aged 18 and above) for continuing education in Hong Kong was about 25.1%. That translates into an estimated population of over 1.23 million adult learners pursuing continuing education annually. Those who responded to the survey spent on average Hong Kong $11,426 (about US$ 1,465) in 2007 for their study which translates into about 7.8% of the median annual income based on the above mentioned median income. Although it is not an insignificant portion of their income, many

working adults are clearly willing to pay for a good education for self-improvement.

In terms of educational attainment, however, as shown in the Barro-Lee Education Attainment Dataset (Barro and Lee, 2010), Hong Kong's workforce is behind its major competitors such as Japan, Korea, Taiwan, and Singapore.

Countries	Tertiary education attainment (% of population of aged 15 and above)		
	Yr. 2000	Yr. 2005	Yr. 2010
Korea	30.2	35.2	40.1
Taiwan	23.5	32.1	38.2
Japan	29.6	33.5	37.3
USA	48.5	31.3	31.3
Singapore	13.5	17.2	18.3
Hong Kong	13.4	14.6	15.9

Table 2.4: Tertiary Education Attainment of Selected Countries in Years 2000, 2005 and 2010 shown in the Barro-Lee Education Attainment Dataset

The HK Government's published statistics (Census Statistics, 2011), however, showed that the percentage of all persons aged 15 and over having attained post-secondary education is 25.0% in 2010. This higher percentage figure of the HK Government likely results from including all forms of educational attainment at different types of diploma / certificate courses, associate degree courses, or equivalent courses, some of which may be of short duration and studied part-time.

Nevertheless, even at 25%, HK's tertiary education attainment rate is still below most industrialized countries. This is a major concern of the Hong Kong Government as it has been eagerly attempting to prepare Hong Kong's labour force to compete in the highly competitive knowledge economy of the 21st century. However, gradual improvements are expected. Over the past years, government measures including the granting of land to providers to offer more self-financed sub-degree programmes, student financial aids for attending approved self-financed programmes, and seed money support for private universities have been introduced to boost higher education participation rates.

Above all, the introduction of the new 3-3-4 academic structure will eliminate one public examination of the old system at the 5th year, allowing all students to proceed to the 6th year and thus have a chance to sit for the public examination that leads to university entrance. The number of school leavers achieving the minimum university entrance requirements is expected to increase. Although the government-funded degree places will remain largely unchanged, the demand for self-funded degree places will definitely increase with more school leavers 'qualified' for university entrance. As private universities have greater freedom to increase their capacities and adjust their recruitment targets, it would be logical to anticipate the number of university graduates will increase at an accelerated pace to meet the rising demand. Although Hong Kong has been a firm believer of the free market and the power of the invisible hand, it is not inconceivable to see an oversupply of degree places in Hong Kong in a few years' time, as experienced in Taiwan currently.

It may be of interest to note from the above table that the biggest economy in the world, the U.S., which had the highest attainment of tertiary education among this group of economies in 2000, has been declining in terms of tertiary education attainment over the past decade while the others have been improving. Over time, this may further weaken the US's competitive position in world trade.

Housing condition

A somewhat unique feature of the social conditions of Hong Kong is its housing situation. Being one of the most congested cities in the world, housing cost is extremely high relative to the average family income. As a result, most families live in rather crammed quarters with little private space for individual family members. Government's statistics show that about 47.9% of households live in either public rental housing or subsidized sale flats which are typically small apartments with little community space. Even for those 51.3% households who live in private permanent housing, the majority of them cannot afford large spacious quarters. This clearly implies that private space for individuals at home is rare. Individual activities that require a quiet environment such as studying are therefore greatly hampered.

Official language

Being a former British colony and a major commercial centre, Hong Kong is a highly internationalized city with Chinese and English as the two official languages. However, as the Government only extended funding for compulsory education up to the 9th year in 1978 [equivalent to 6 years of primary school education and 3 years of secondary school education], the society is predominantly Chinese speaking only except for the 'upper-class' of elites. There is therefore a rather noticeable dichotomy of usage of the two official languages. Whilst English is the dominant language for business and for law and order, Chinese remains the dominant social language. Even for the younger generation, which has enjoyed better educational opportunities than the older generation, the preferred social language tends to be a mixed language of the Cantonese dialect and English.

This is an important aspect of social life in Hong Kong that also affects teaching and learning. Although schools are required to meet certain standards before they can choose English as the medium of instruction most schools, apart from the best schools, find it hard to maintain teaching using only English as the medium of instruction. The majority of students cannot carry a reasonable dialogue in English. However, they love to communicate in Chinese with some English words mixed into their sentences.

This peculiar phenomenon is even carried over into higher educational institutions. Whilst English proficiency is one of the entrance requirements of universities—and therefore there is no doubt that students in higher educational institutions must be reasonably proficient in English—the extensive use of Chinese inter-mixed with English as the main medium of communication on campus is not only evident in social situations but also in the classroom. It seems proper English is only used for more formal academic activities such as lecturing by the professors and students doing assignments and examinations. This unusual social trait has a profound impact on the practice of e-learning as online interaction between the students and teachers is mainly text-based. Mixing the two languages in written text tends to make communication cumbersome and to create barriers for those students who are not proficient in both languages (e.g. students who are not ethnic Chinese). The issue of mixing Chinese and English and its impact on e-learning is one of the intriguing aspects of the research puzzle that this enquiry aims to explore.

Technological-economic

The second important social-economic characteristic of Hong Kong relevant to this research is its technological readiness for e-learning. Hong Kong enjoys comparatively high availability of personal computers and high penetration of broadband Internet access. In developing its 2008 Digital 21 Strategy, the Hong Kong Government published a number of indicators (Office of Chief Information Officer, 2007) to measure HK's readiness for long-term ICT development. Those indicators relevant to technological readiness for e-learning are tabulated below:

Indicators	Reference date	rate
Mobile phone penetration rate	Jan 2010	177.7%
Household broadband penetration rates	Feb 2010	81.4%
Personal computer penetration rate for businesses of all sizes	May-Sep 2009	63.6%
Number of wireless hotspots installed	30 June 2010	9,061

Table 2.5: Indicators Relevant to Technological Readiness for e-Learning
Source: Hong Kong Digital 21 Strategy web site (captured on 13 July 2010) (http://www.info.gov.hk/digital21/eng/statistics/stat.html)

The mobile phone penetration rate (ratio of mobile phone numbers to population) at 177.7% appears unreasonably high. However, related statistics on mobile phone subscription plus pre-paid SIM cards (1737 per 1000 in 2009) supports the notion that on average more than one mobile phone number is available per person in Hong Kong. Such high availability is a direct result of how the local telecom authority regulates and how the local telecom service providers manage the issuing of mobile phone numbers. For example, when the local telecom authority, Office of the Telecommunication Authority (OFTA), changed the regulations to force telecom service providers to accept switching of subscriptions from one provider to another, thereby allowing subscribers to keep their existing mobile phone numbers, the growth of new phone numbers dropped considerably. Although the mobile penetration rate of 177.7% does not imply exactly that there are, on average, 1.7 active mobile phones per person, it does suggest that Hong Kong has a very high availability of mobile

phones relative to other countries. With the fast growth of smart phones in recent years (e.g. iPhone, Blackberry), such high availability provides the ideal environment for implementing e-learning on such hand-held devices. This is popularly referred to as Mobile Learning or M-learning. For comparison, some sample high penetration rates in the world are listed below:

Country	**Mobile phone penetration rate in 2009**
Greece	194.39%
Montenegro	183.29%
Malaysia	166.2%
Hong Kong	***164.4% (177.7% in 2010)***
Macau	180.0%
Singapore	137.4%

Table 2.6: Mobile Phone Penetration Rate in some Selected Countries in 2009

(Wikipedia http://en.wikipedia.org/wiki/Mobile_phone_penetration_rate captured on 9 August 2010)

In terms of Internet user base, the Internet World Stats (2010) observed, "Hong Kong has built one of the most sophisticated telecommunications markets in the world". It estimated in December 2009 that Hong Kong has 1.9M broadband connections and 4.8M Internet users, which for a population of 7M translates into an Internet user penetration rate of 69.3%. This figure compares favourably with penetration rates of 50.3% and 76.2% for Europe and North America respectively. Again, based on this indicator, Hong Kong is well prepared for e-learning, technologically speaking.

In addition, the Census and Statistics Department conducts annual surveys to gauge the penetration and usage of IT in the households and the business sector. In the 2009 edition of *Hong Kong as an Information Society (Census & Statistics Department, 2009),* these IT penetration measures were reported as follows:

1.	Percentage of households with PC	75.8%
2.	Percentage of households with PC connected to Internet	73.3%
3.	Percentage of persons aged 10 and over who had used PCs in the 12 months before the survey	70.2%
	Percentage of persons aged 10 and over who had used Internet in the 12 months before the survey	69.4%
3.1	Breakdown by place of using Internet	
	At home	87.6%
	At work	42.7%
	At place of study	14.7%
3.2	Breakdown by age	
	10-14	98.8%
	15-24	99.1%
	25-34	95.2%
	35-44	85.6%
	45-54	67.5%
	55-64	37.9%
	65 and above	8.8%

Table 2.7: IT Penetration Measures in Hong Kong in 2009

These figures showed whilst Internet usage for those aged 45 and over may not be overly impressive, Internet usage amongst the younger generation of age 10-24 is extremely high at 98.8 - 99.1%. Even those aged 25-44, who are people at the prime of their working life and are more likely to engage in continuing education, have a fairly high Internet usage of 85.6% - 95.2%. Additionally, with the high availability of PC and Internet access at home, using Internet at home (87.6%) is far more common than using Internet at work or at school. All these figures examined together perhaps suggest that Hong Kong must have the necessary technological infrastructure for e-learning to thrive and to benefit many who may not be able to enjoy conventional classroom-based higher education because of the limited opportunity for higher education.

In comparison with the world, Hong Kong ranked 23 among the top 30 highly Internet penetrated countries according to Internet World Statistics. The following table shows a comparison with Asian countries and countries of close ties.

Rank	Country	Penetration rate
7	Australia	80.6 %
8	New Zealand	80.5 %
12	Korea, South	76.1 %
16	Japan	73.8 %
17	United States	73.2 %
18	Canada	72.3 %
19	United Kingdom	71.8 %
23	**Hong Kong,** (China)	69.5 %
26	Singapore	67.4 %

Table 2.8: Internet Penetration Rate in some Selected Countries (http://www.internetworldstats.com/list4.htm#high, captured on 11 Aug 2010)

In summary, from a technological-readiness perspective, Hong Kong clearly has the necessary infrastructure (high availability of broadband Internet and computers) for e-learning to thrive. Yet the reality is e-learning has been only mildly popular in Hong Kong despite its technological readiness, as observed in the surveys conducted over the period of 2005-2009 of students and teachers of one of the largest tertiary institutions. [Data collected in those surveys will be presented and discussed in ***Chapter 5, Presentation of Findings and Discussion – Web Surveys***]

This problem is not limited only to locally designed and delivered e-learning programmes. Even e-learning programmes of renowned overseas universities seem to have only limited success in Hong Kong. A case in point is: the College of Lifelong Learning collaborated with a world-class university in Canada to launch a master's level e-learning programme in Hong Kong in 2006 and in 2007. Although that master's programme was a smashing success in Canada and internationally, its launching in Hong Kong could not attract even a viable number of students for a class in two separate attempts[7]. This phenomenon is very puzzling. This research will explore the possible reasons, despite the technological readiness of HK, why Hong Kong learners do not seem to embrace e-learning as learners from other countries do

[7] This is an undocumented case of CLL based on the author's personal involvement in the negotiation and formulation of the collaboration with that Canadian University. Detailed information about the collaboration is confidential and internal to relevant CLL staff only.

as revealed in the demand for continuing education surveys of HKU SPACE of the University of Hong Kong (HKU SPACE 2008, 2010a & 2010b) and verified in the web surveys conducted in this research study (see ***Chapter Five, Presentation of Findings and Discussion – Web Surveys***).

Higher Education Landscape and the Government's agenda

Major providers in the system

The higher education system is largely funded by the Hong Kong Government through a funding body called the University Grants Committee. Currently, there are 12 higher education institutions with degree-granting status. Namely:

I. Eight institutions funded by the public through the University Grants Committee

City University of Hong Kong
Hong Kong Baptist University
Lingnan University
The Chinese University of Hong Kong
The Hong Kong Institute of Education
The Hong Kong Polytechnic University
The Hong Kong University of Science and Technology
The University of Hong Kong

II. Four self-financing institutions

The Open University of Hong Kong
Hong Kong Shue Yan University
Chu Hai College of Higher Education
Hang Seng Management College

A large number of non-degree awarding institutions also exist, which can offer sub-degree programmes such as higher diplomas and associate degrees. These institutions can collaborate with overseas universities to offer programmes leading to degree awards of the partnering universities. The major players, however, are the not-for-profit extension arms of the public universities.

Quality Assurance

The quality assurance system for the tertiary education sector in Hong Kong is basically divided into two sub-systems, catering for two sectors; the university sector and the non-university sector. As all universities are self-accredited, their programmes, including those offered by their extension arms, are internally-accredited; that is, degree programmes by each university itself and sub-degrees by a Joint Quality Review Committee of the eight universities. The University Grants Committee (UGC) also has a role in conducting regular reviews of work quality of the universities on a holistic level.

In parallel to the university sector is the non-university sector. All programmes offered by the other institutions are subject to external accreditation by the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ). That means all post-secondary programmes of level 4 and above (equivalent to associate degree and higher diplomas) within the qualification framework of Hong Kong, including e-learning programmes, offered by all other non-university institutions, including those offered in Hong Kong by overseas universities, are subject to accreditation by HKCAAVQ

The Government's vision of Hong Kong as an Education Hub – an agenda for change

As mentioned previously, statistics published in the Barro-Lee Education Attainment Dataset (Barro and Lee, 2010) showed that Hong Kong's workforce is behind its North American counterparts and its neighbouring competitors such as Japan, Korea, Taiwan, and Singapore in terms of tertiary education attainment. Eager to improve the education level and thus competitiveness of its workforce for a knowledge-based economy, the HK Government has introduced an extensive agenda for change. This agenda always seems directly or indirectly linked to 'globalization' or 'knowledge-based economy'. These buzzwords have been mentioned frequently by government including in the Chief Executive's annual policy addresses on government policy agenda items. The realization of these policy agenda items, such as transforming Hong Kong's economy into a 'knowledge-based economy', produced the ambitious expansion of the tertiary education participation rate from 30% to 60% in 2010, whereas, 'Globalization' and 'Education Hub' have evolved into policies or initiatives

of exportation of educational and medical services, closer economic partnership with the Greater Pearl River Delta Region, and other initiatives.

Higher educational institutions in Hong Kong are naturally at the forefront of such changes as any attempts by a society to transform itself into a knowledge-based economy with rapidly growing demand for 're-skilling' or 'up-skilling' will create ample opportunities as well as challenges for the higher education sector. However, a common worry of local educators facing all these government hypes about globalization and knowledge economy is: the Hong Kong Government's agenda for educational reforms seems to be rooted in a human capital development perspective only in the interests of economic growth. Being one of the world's most open economies, Hong Kong also adopted a very open educational policy, and at the same time has placed great pressure on the education system to reform. The perception of the inevitability of globalization and the knowledge economy has been used to push such a government-directed education reform agenda.

As Mok and Currie (2002) remarked:

> "Globalization discourse is used to facilitate the accomplishment of domestic purposes by creating a proper rationale or a legitimate claim for launching institutional reforms or to sustain a new discourse about the environment confronting institutions" (2002: 274).

In addition, 'education hub' has become the new buzzword, and the commoditization of education for export purposes and import of students (as consumers) quietly crept into the favorite discussion subjects for the government. Naturally, e-learning would seem to be a perfect vehicle for delivering such commoditized educational products.

As outlined by Wong (2007), over the past decade or so, the Hong Kong Government has made the following major policy or strategic decisions relating to education:

1. Enactment of a Non-Local Higher Education and Professional Education (Regulation) Ordinance from June 1997.

   The objective of the Ordinance is to protect Hong Kong consumers by

guarding against the marketing of substandard non-local higher and professional education courses conducted in Hong Kong. It also enhances Hong Kong's reputation as a community which values reliable and internationally recognized academic and professional standards.

Essentially, the Ordinance requires registration of all overseas programmes offered in Hong Kong; however, programmes offered in collaboration with a local tertiary institution are exempted from registration. Registration requirements are not onerous, which actually legitimizes and facilitates legitimate overseas institutions in their exportation or globalization of programmes in Hong Kong. Additionally, it is perhaps important to note that all purely distance learning courses (including e-learning courses) are also exempted from registration.

2. Chief Executive Tung Chee Hwa announced in "The 2000 Policy Address" (Hong Kong Government, 2000) that, among the various policy objectives for Education and Manpower, Hong Kong should actively work "to develop Hong Kong into a regional center of excellence for higher education" (p. 5).

3. Chief Executive Tung Chee Hwa pointed out in his 2001 policy address (Hong Kong Government, 2001) that Hong Kong's economy was facing a major restructuring and transformation because of the global economic downturn and globalization of markets. Such a transformation was leading Hong Kong from an industrial economy to a knowledge-based economy.

4. Severe funding cuts to the public tertiary institutions resulted in almost all taught post-graduate programmes becoming self-funded in 2003. On the one hand, having to charge market rates for these programmes has made overseas programmes much more competitive and attractive to local learners. On the other hand, the financial squeeze has forced local institutions to look for ways to expand their income base, including more aggressive exportation of their programmes, mainly to mainland China.

5. Chief Executive Tung Chee Hwa announced in his 2004 policy speech that

Hong Kong should further develop its educational (and medical) services to serve people in the mainland and elsewhere in Asia.

6. The Chief Executive, in the Executive Council meeting of 7 December 2004, ordered a relaxation of immigration control in respect of institutions and programmes admitting non-local students. As outlined in the Education and Manpower Bureau paper (2005), the implementation of this new policy would take effect in the following areas:

- Increased quota for publicly-funded full-time programmes at sub-degree, degree and taught post-graduate levels, plus the admission of students from the mainland, Macau, and Taiwan.

- HK institutions could now admit students from the mainland, Macau, and Taiwan to the self-financing full-time programmes below post-graduate level, subject to a quota. There would be no quota at post-graduate level.

- For publicly-funded part-time programmes, students from the mainland would be allowed to enter HK for locally accredited taught post-graduate programmes provided by the eight publicly-funded institutions up to 10% of the student number targets. There would be no quota for self-financing part-time programmes.

7. In July 2005, a Memorandum of Understanding was signed by representatives of the China Central Government's Education Ministry and Hong Kong that outlined the mutual recognition of higher educational awards. The Minister of Education also discussed with HK representatives a range of topics of mutual concern, such as taxation and expansion of the list of provinces that allow direct recruitment of students by HK institutions, and recognition of Associate Degree qualifications for the purpose of articulation into universities in the mainland.

8. On 21 June 2006, the Secretary of Education and Manpower, Arthur Li (Legislative Council, 2006) shed some light on the Hong Kong Government's

intention in developing HK into a regional education hub. In his speech to the Legislative Council during the debate on the same subject, he argued for the need and readiness of HK to become an educational hub. He also outlined various measures that the Government had been studying to support and facilitate such a development. The Government subsequently established a high-level steering committee, chaired by the Chief Secretary of the Hong Kong Government, to provide policy guidance in this development.

9. On 2 May 2007, the Accreditation of Academic and Vocational Qualifications Bill was enacted. The Qualification Framework (QF) and the associated Quality Assurance mechanism would be established.

10. On 29 Oct 2007, the Executive Council agreed to the relaxation of admission quota for non-local students from 10% to 20% and approved a total of HK$1.43 billion grants for universities to apply for building additional hostels (6,500) for non-local student.

The above listed government policies or new initiatives announcements seem to be loosely related, but putting all the pieces of the puzzle together, a picture clearly emerges: that is, there is a definite shift of direction and strategy in educational policy making – Hong Kong is gradually moving from the position of being a net importer of education to one of, hopefully, an exporter of education. In other words, in the world marketplace of education, Hong Kong wishes to become a 'globalisor' in the field of education, albeit initially limited to the neighbouring regions of mainland China. In fact, the Government has identified education as being one of the six "pillar industries" for Hong Kong for the next decade.

With all the advantages promised by e-learning (borderless, anyplace, anytime) e-learning developments to facilitate exportation of education would seem certain to gain popularity among the local higher educational institutions and have strong support of the HK government. However, the response to the government's call in this regard has been lukewarm at best. E-Learning in higher educational institutions tends to be treated as add-ons to supplement the traditional face-to-face mode of delivery and not as a stand-alone mode of delivery of instructions. Why is such the

case?

The threat and promises of e-learning in Hong Kong's vision of becoming an education hub

Whilst Hong Kong is striving to become a regional education hub, this may not be good news for weaker institutions in Hong Kong, as education is becoming more of a global marketplace without any barriers, especially if such education is delivered through e-learning. As competition will no longer be limited to between local institutions within the boundaries of one territory, or even one country as in the not-so-distant past, higher educational institutions must face fierce competition for students, teachers, and even resources — globally, not just locally. World-class universities can easily extend their reach internationally and break the barrier of space, especially those from English-speaking countries (USA, UK, Australia, and Canada).

Another reason that should also increase the growth of e-learning programmes offered by overseas institutions is the advantage that 'purely distance learning courses' are exempted from registration under the Non-local Higher and Professional Education (Regulation) Ordinance. In practical terms, even if the Hong Kong Government were interested in regulating e-learning programmes, it would find it almost impossible as the overseas providers need not have a physical presence in Hong Kong. They conduct all their business online, including teaching, administration, and fee collections.

Wong (2007), in his review of cross-cultural delivery of e-learning programmes, raised the important question of relevance of e-learning programmes to a local market. He asked, "Although these global universities offer technology-based education not yet widely available locally, understandably there is a fear that the Hong Kong public, which traditionally worships technology and reveres education, may regard taking up e-learning with an overseas institution as a trend worth embracing as Hong Kong progresses toward modernity. But is this assumption valid?" (p. 9)

Indeed, regular scans by this researcher of the local media, including newspapers and

popular web sites advertising programmes offered in Hong Kong by overseas institutions, showed only a small number of such programmes were labeled as e-learning. Therefore it seems such flooding of e-learning programmes of overseas universities in HK is not or at least not yet happening.

A quick survey of the prospectuses of local higher educational institutions revealed that, at least from the limited published information, only a small percentage of their programmes make significant use of e-learning despite the many advantages offered by e-learning. Why is it that the vision of 'borderless' education through e-learning has not taken place in a big way even though personal computers and broadband communication are becoming more and more affordable in Hong Kong?

Summary

To sum up, a review of the relevant social, economic, and technological characteristics of Hong Kong seems to show that as a compact region with a population of 7 million, Hong Kong has a reasonably advanced economy, a workforce that is willing to pursue continuing education for self-improvement, a government that wants to turn Hong Kong into an education-hub through export of education, and one of the best technological infrastructures in the world for e-learning. Why is it then, with all these favourable conditions, e-learning has not been embraced by the local institutions as in other advanced economies? This is the key question that this research aims to explore.

The following chapter will present relevant literature and the related conceptual framework for this enquiry.

Chapter Three

Review of Literature and Conceptual Framework

The nature of the research puzzle in this study requires some understanding of foundational work of authors in several subject areas including:

1. Wider benefits of learning and learning in later life,
2. Learning in a cross-cultural environment,
3. Learning in a second language,
4. E-learning pedagogy and expected benefits,
5. Barriers to diffusion of e-learning, and
6. E-learning under Web 2.0.

Journal articles and book chapters relevant to these areas are considered in relation to the research question of this study. Briefly, what are the benefits and impact of e-learning as perceived and expected by the teachers and actually experienced by learners in tertiary education in Hong Kong, and what are the barriers to diffusion of e-learning in Hong Kong?

1. Wider benefits of learning and learning in later life

Tom Schuller et al. (2004) in their book, "The Benefits of Learning" argued that the impact of education on learners could be much wider than merely for economic or social purposes. It can affect learners in health, family life, and even personal identity. They proposed a triangular model of benefits to learners, which consists of three poles namely: conventional Human Capital (socio-economic dimension), Social Capital (socio-political dimension), and Identity Capital (socio-psychological dimension). Learners and their employers often focus only on the economic benefits of learning and would therefore view learning as an investment in human capital. The benefits

thus derived are mainly for the good of individual learners and their employers but also for the good of society in general. For this reason, when governments and policy makers extol the merits of learning, they are likely motivated in the main by the benefits of learning in terms of human capital.

The Social Capital concept is closely linked to Dewey's concept of good citizenry. From this perspective, education is seen as providing the essential fabric of a harmonious society producing benefits such as civic participation, family, and friendship. Therefore the benefits thus generated are more for the common good of society than for individual learners. Identity Capital can be understood as the currency of self-identity, such as self-confidence and self-esteem. Education plays a strong role in the formation and maintenance of this currency.

The demarcations among these three capitals are not always clear cut or concrete. Schuller et al. (2004) saw the three capitals interact in the triangular model and many of the outcomes (e.g. attitudes and values) are a combination of two or all three of the concepts at work.

The wider benefits of learning, especially to older learners, may also be viewed from a different perspective as society in general views education and ageing people in a different light than it does with education and younger students (Jarvis, 1995). Cusack (2000) suggested that from a critical theory perspective one might see learning as empowerment and "emancipation of older people from all forms of domination" (2000, p. 61). Among the forces of domination, older people are often stereotyped as a useless burden on their families or society as a whole. In his seminal work — *A*

Fresh Map of Life — Laslett (1996) presented a clear and powerful argument on the changes that must take place for the emergence of the Third Age. For these older learners, the role of learning as an agent for empowerment and self-actualization or development of their full potential is central. He argued that continuing education can often lead to self-fulfilment:

> "Some industrialists already realize that older employees valued for their experience will be even more productive when equipped by retraining, and they have no doubt of the capacity of older employees to learn new things. The bosses, if they do bring in retired people for the purpose, implicitly recognize also that those in the Third Age can impart their knowledge as effectively as anyone else: indeed that such persons may have made a particular specialization relevant to their Second Age occupation into a Third Age accomplishment, an avenue of self-fulfilment." (1996, p. 210)

Indeed, older learners may have some advantages over younger ones in continuing education. For example, they are likely to be more mature in handling stress and more financially independent. They have fewer distractions from social or family obligations and, above all, have much more life and professional experience that they can relate and apply to their learning [Jarvis (1995), Jarvis (2001)].

Based on his 45 years of study of ageing [The Seattle Longitudinal Study], Karl Werner Schaie (2005) found, among other things:

- Even with some degree of decline in ability, older adults will only fall below the middle range of performance of young adults when they reach their 80's.

- Favourable environmental circumstances such as high socioeconomic status, above-average education, high complexity-low routine occupations, and intact families can often postpone intellectual ability decline.

- Persons with substantial involvement in intellectually stimulating activities such as extensive reading and a pursuit of continuing education seem to have lower risk of decline.

- Cognitive decline at old age is more likely to be a result of disuse than physiological deterioration, and appropriate replicated training can be useful in helping older learners maintain a previous functioning level of ability.

In Hong Kong, educational opportunities for older learners were more limited when they attended school in the sixties. With the greatly expanded opportunity for continuing education, especially at the post-secondary level in the past decade or so (HKU SPACE 2008, 2010a, & 2010b), many older learners (even those in their fifties) are motivated to pursue programmes of study, some of them perhaps not for career development but for self-esteem and fulfillment. Would the same the benefits of learning be applicable to Hong Kong learners: specifically, if instruction was delivered in the e-learning mode and based on an e-learning pedagogy?

In their study of older persons' computer and Internet usage in Hong Kong, Chan et al. (2005) found that a large portion (70%) of older people (aged 55 or more) had developed the habit of surfing the Internet with over 36% of them spending at least four hours/week on this. In terms of the contents of their Internet access, the older

people keenly engaged in categories close to their daily living, such as 'news and media', 'health and medicine', 'leisure and living', 'entertainment' and 'economics' (stock market) (2005, p. 13). Most of the older learners were positive about their learning experience, citing benefits such as leading a happy life, gaining greater life satisfaction, increased self-confidence, improved communications with others, and feeling more capable than other seniors (2005, p. 17). The conventional belief is that older persons are not capable of learning with a computer. Their alleged decline in cognitive functions and motor skills (e.g. memory, eyesight, finger movement) is believed to pose significant barriers to their use of computers and therefore, e-learning. Chan et al.'s study seems to challenge this notion to some extent, as they suggested perhaps the design of the computer and its related facilities, which are targeted at younger consumers, present a greater barrier to older learners than their physical and cognitive abilities.

In Hong Kong, learning needs of senior citizens with educational attainment below the senior secondary level are well catered for by various social organizations. However, there are no equivalent educational establishments in Hong Kong dedicated to serve the older learners (e.g. the University of the Third Age in Toulouse, France) to meet their learning needs at the post-secondary level. Interest in this particular sector of the learning population has become stronger in recent years as many developed countries are facing the problem of an ageing population [Jarvis (2001)]. Some educators and policy makers in Hong Kong (Chan et al, 2005) believe that the establishment of such institutions for older learners, and the delivery of instruction mainly through the Internet based on an e-learning pedagogy, could greatly improve the learning opportunities for the better educated older learners.

Naturally, that begs the question of how suitable e-learning is for older learners in Hong Kong. In this connection, one encouraging sign is the rapid growth of Internet usage by senior citizens in Hong Kong. As reported by a local daily, *Da Gong Bao* (2011), the Centre for Communication Research of the Chinese University of Hong Kong found in their 2010 survey of usage of traditional and new media that Internet usage by those aged 50 and above had doubled from 14.9% in 2006 to 27.7% in 2010. This supports the finding of Chan et al. (2005) that learning through the Internet is being embraced by older persons. For the less mobile older learners, e-learning may be more suitable in fulfilling their aspiration to learn than traditional face-to-face learning. A more fundamental question would then be how suitable is e-learning for learners at the post-secondary level in general for Hong Kong learners in their social and cultural context.

2. Learning in a cross-cultural environment

Hong Kong is regarded by many researchers as one of the countries that have a strong 'Confucian-heritage culture' (CHC) (Biggs 1996; Biggs & Watkins 1996; Bond & Hwang 1986; Lee 1996; Watkins & Biggs 2001). Students of CHC were known to show certain common characteristics in their approach to learning, e.g. preference for rote learning, passive in the classroom, respect to the teacher as authority, although some authors maintained that overgeneralization of such common characteristics may be misleading as Chinese background students from different countries in Asia (e.g. Singapore, Malaysia, Australia) and those in Hong Kong or in mainland China are not really a homogeneous group (Lê & Shi, 2006). Watkins and Biggs (2001) referred to such overgeneralization or misconception as the "paradox of the Chinese learner"

(2001, p. 3). They suggested perhaps what is prevalent today is a form of "vernacular Confucianism" that represents common beliefs about the nature of teaching and learning held by Chinese teachers, parents and students today, some of which may not be exactly traditional Confucianism. In other words, it is the current beliefs about the teaching and educating of children that are within the focus culture and are influencing today's teachers in their classroom practice. Due to the limited scope of this research, only certain aspects of those cultural traits that may have a more direct bearing on learning are reviewed here.

Do Hong Kong learners share the same traditional Confucian heritage characteristics? There are questions (Lee 1996) about whether their behaviour and values in terms of benefits of learning (e.g. learning for self-realization, promoting reflection and enquiry, human perfectibility) bear resemblance to that of learners in western societies. In a general sense, do Hong Kong people have the same 'Chineseness' as Chinese in China or Taiwan? Are they merely Chinese with some blending of Western culture? Prior to 1997 when Hong Kong was returned to China and became a Special Administrative Region of China, its people tended to identify themselves as Hong Kong Chinese, stressing their distinctiveness from the Chinese from the mainland China and the Chinese from Taiwan (Lau and Kuan 1988). Since 1997, however, there seems to be a general reversal of this sentiment and Hong Kong people have begun to accept their Chinese identity more and more perhaps because, among other reasons, the increased acceptability internationally of the Chinese passports issued by the Hong Kong Government under the authority of the Central Government.

Although traditions of Chinese culture may be eroding in Hong Kong after over 100

years of British rule and the gradual appropriation of Western cultures, some of the following cultural traits that are more directly relevant to their learning styles remain noticeable at varying degrees among Hong Kong students:

2.1 Utilitarianism in learning

Like many other Asian countries of Confucian culture, Hong Kong has a strong culture that reveres education and learned people. There is an old adage in Chinese 萬般皆下品, 唯有讀書高 [literally: Every endeavour in life is of a lower status, except education]. However, 'education' in this context should be understood in the traditional context to means the pursuit of qualifications through the studying of Confucian classics for the purpose of passing the different stages of county, provincial, and national examinations (Pan 2006, p. 94). Those few educated members of the elite who reached the top would then be installed as officers in the government, and would become members of the ruling class. Therefore, behind this proverb is a strong culture of pragmatism or even utilitarianism in learning (Tang & Biggs 1996). In other words, the purpose of learning (or more accurately, studying) for the average Chinese student (especially the oldest son in the family) is rooted in a strong utilitarian tradition of culture rather than generative learning or the pursuit of knowledge (Lee, 2001). Upward social mobility can be achieved with a favourable result from the national examinations. Passing the examinations and getting good marks are not only the important achievements in life for the individuals but also the only meaningful achievement for the individual as well as for the family (Biggs & Watkins 1996). Traits of this tradition undoubtedly appear also prevalent with the Hong Kong Chinese. (Biggs & Watkins, 1993b; Tang & Biggs 1996)

2.2 Assessment-centric culture

A natural manifestation of this utilitarian culture in learning is the assessment-centric attitude of students. In their learning environment model, Bransford et al. (2000) depict an assessment-centred environment, in comparison with student-centred and knowledge-centred environments, as one that focuses on formative and summative assessments that support the learning process. It also provides regular feedback and opportunities for revisions and improves the quality of thinking and understanding. Most importantly, what is assessed must be congruent with the learners' learning goals. However, it is understood that the learner's learning goals may or may not align with the learning goals prescribed in the curriculum.

An assessment-centric culture has a longstanding tradition in Chinese history that can be traced back to the Tang Dynasty of about 618-907 A.D. Official examinations were major public events because they were a fast track for upward mobility (Pan 2006). In this connection, the genre of assessment-centric attitude exhibited in Hong Kong students bears such shadow of tradition and is one of extreme pragmatism or extreme instrumentalism. Most Hong Kong students would only seek the most efficient way to 'get by' a course by learning enough just to pass examinations and to get good marks. They would demand the teachers provide more class notes in summary form (e.g. PowerPoint slides) and provide 'tips' for their quick review of the course contents instead of following the normal study path of reading the textbooks. They would develop skills to answer examination questions with short bullet points instead of complete sentences. As

Fan (1993) lamented,

> "These students believe that to achieve in examination writing is to play safe. For example, they may try to express opinions, popular with the markers, focus on accuracy rather than ideas, tip topics and memorise models. For the average to bright students, this may result in higher marks. For the weaker students, it is a matter of survival, to get a pass." (1993, p.75)

This assessment-centric culture may have its roots in the ancient national examination for selecting elites into the ruling class, but the current education system in Hong Kong certainly should be blamed for maintaining and reinforcing such a culture. As Biggs and Watkins (1993b) characterised it, the Hong Kong education system is "a fairly rigid, examination-dominated system, involving heavy workloads with a strong if not exclusive academic focus", (1993b, p.203) and viewed it "belonging to an exam-dominated and stressful school system" (1993b, p.206).

2.3 Surface and Achievement learning

Biggs' (1992) model of student learning identified three learning approaches: namely Surface, Deep, and Achievement. Each approach to learning has two components: the how and why. From the student's perspective that means a strategy and a motive to learning. In an assessment-centric culture, the more popular learning approach would be Surface, which means the student's learning motive would be extrinsic, e.g. gaining a qualification with minimal effort, and a commonly adopted strategy would be rote learning and memorization for short-

term reproduction in examinations (Biggs & Watkins 1993a). However, Watkins and Biggs (1996) later argued that the form of learning popular with Chinese students might be considered an Achievement Learning Approach, which although appearing to be similar to the Surface Learning, is actually an adaptive strategy in coping with assessments and in enhancing understanding (Chan, 2003).

Therefore, it does not imply that a Surface approach is always a bad learning approach in comparison with the other approaches. Based on Biggs's model, Zhang (2000) investigated the relationship between the three learning approaches and student academic achievements of a sample of university students in Hong Kong, mainland China and the US. The results from Hong Kong verified that the relationship between learning approaches and academic performance was task specific and subject related. In other words, when the learning tasks required simply a recall of facts, a Surface approach would associate with better academic achievement. However, when the learning task required qualitative complexity, a Deep learning approach seemed to lead to better achievements. The relationship is also subject related; that is, if students perceive some subjects as irrelevant to their future, they tend to use the Surface approach just to 'get by' but use the Deep approach for those subjects important to their future career.

Bigg's Achieving approach to learning (Biggs 1988, 1992; Biggs & Watkins 1993a, 1996) which is closely related to an assessment-centric culture, was later challenged by Kember and Gow (Kember & Gow 1990; Kember 2000) on the grounds of a blurred difference between the Deep Approach and the Achieving Approach. Like the Surface approach, the Achieving approach also focuses on

the tangible results of high marks or formal recognition such as prizes, rather than the process of learning. But instead of merely trying to get by, the students are motivated by the pride and satisfaction of achieving good results. The achieving learning strategy would be to maximize the chance of obtaining high marks through an appropriate combination of memorization and understanding of the learning materials (Kember, 2000).

Gow et al. (1996) also reviewed the learning approaches of Chinese people and argued that, in contrast to the stereotype that Chinese students tend to adopt a reproductive learning approach, the Chinese approach to learning is motivated by a strong desire to achieve or the feelings of satisfaction that come from success in studies, which in turn will lead to career achievements. They characterized an achieving approach to learning as one:

> "... based on a particular form of extrinsic motive: the ego-enhancement that comes out of visibly achieving, indicated particularly through receipt of high grades for the work" (1996, p.110).

The adoption of such an approach to learning is obviously rooted in the cultural values of pragmatism identified in the previous section. Its manifestation leads to certain strategies or styles for learning that often appear to be an over-concentration on obtaining high grades. Students adopting an achievement learning approach will tend to focus only on those components of the course that are formally assessed and feel to some extent at odds with e-learning pedagogy. In e-learning pedagogy, students are expected to take greater control of their own

learning and be more self-directed. An achievement learning approach would mean "motivated only by tangible rewards of high grades and confined tightly to a strict coverage of the prescribed syllabus". For this reason, the common practice in a typical e-learning course in Hong Kong is that even the open and free online discussions part must be formally assessed to encourage student participation.

To extend their work on Chinese Learners, Watkins & Biggs (2001) edited further research work since publication of their widely reference book, *The Chinese Learners: Cultural, psychological and contextual influence* in 1996 (Biggs & Watkins, 1996). This second volume focused more on teachers and how their teaching contributed to success of learners of a Confucian Heritage Culture. Collectively, the papers in the book provided some explanations why certain practices in the classroom, which might be perceived as negative in Western cultural context, can actually contribute to Chinese learners' success when interpreted in the light of cultural contexts of these students.

3. Learning in a second language

A typical Chinese learner in a Hong Kong tertiary educational institution will likely have a reasonable command of English as a second language as required by the universities' admission criteria. Those students who do not have sufficient competence in English would find learning through a second language a tremendous barrier as they are too busy dealing with the language rather than the subject content. Most Hong Kong students seldom use English at home or in social life which means, in the main, English is only for school. Gow et al. (1996) reported in their study of learning approaches of Chinese students in Hong Kong that students without sufficient

command of the language can only rely on verbatim regurgitation either from class notes or from textbooks in small sections already deciphered by their teachers (which is why they always demand teachers provide PowerPoint notes in bullet points). As a result, the students are forced to adopt a surface learning approach to cope.

3.1 Cultural bias and the medium of learning

Another obstacle in learning through a second language, as many researchers point out, is that second language learning means that the learners must deal not only with the medium of language but also the cultural context and the bias embedded in the language (see Kirby et al. 1996; Postman 1992, Johnson and Ngor 1996).

Postman (1992) argued that language is not neutral in the context of cultural ideology. The language we use shapes our reality as different languages address and constitute the world in different ways. As he puts it: "…. Our most powerful ideological instrument is the technology of language itself. Its structure, form, linkage to history, and connotation relating to usage, all contribute to the ideological structure of that language." (1992, p. 123) This means when people speak two different languages, they also actually see the world differently. But the real danger is that unless people have sufficient command in both languages, this difference is not normally noticeable, which is why the problem of communication of people from two different cultures can be so difficult.

3.2 Dominance of the English language

The dominance of English as the medium of instruction also means most e-learning programmes carry certain cultural bias inherent in the language. According to

statistics compiled by *OCLC* [8], the top 10 languages used by public web sites in 2002 are:

Language	Percentage of total public sites
English	**72%**
German	7%
Japanese	6%
Spanish	3%
French	3%
Italian	2%
Dutch	2%
Chinese	**2%**
Korean	1%
Portuguese	1%

Table 3.1: Top Ten Languages Used by Public Web Sites in 2002

Note: multiple languages can be used in each site. The percentage refers to the number of public sites on which the language appears.

With 72% of the public sites in English, it implies not only most e-learning materials are in English, but also most online references are in English. Whilst online translators are being used to mitigate the problem, the effect so far has not been entirely satisfactory.

Some argue that English being the dominant international language creates the environment for communication and improves understanding between two cultures. That may be true to some extent, but unfortunately the flow of culture

[8] OCLC (2011) *Country and Language Statistic.* [Online], Available from: http://www.oclc.org/research/activities/past/orprojects/wcp/stats/intnl.htm, [Accessed 03/03/11]

tends to be one way and at best heavily asymmetrical with English-speaking Anglo-Saxon-American culture dominating.

Some educators believe that the asynchronous communication part in e-learning actually helps non-native speakers of English to follow and participate in the online discussions as language aids can be used before responding. However, as Mason (1994) pointed out, the pace of discussions was such that students working in their second language found it hard to keep up and therefore tended to make shorter and fewer inputs. Nevertheless, this does not negate the advantage of e-learning for second-language learners since they would very likely find a traditional face-to-face discussion in a second language even more difficult to follow, with practically no time to use language aids.

3.3 Code-mixing or code-switching

Code-mixing or code-switching refers to the popular practice of mixing two languages in written or spoken communications (e.g. mixing English and Chinese, or more specifically Cantonese — a local dialect of Chinese spoken by most people in Hong Kong). This is common in communities where two or more languages are regularly used. In Hong Kong, both English and Chinese are official languages, although the use of Chinese in formal occasions such as business transactions, legal documents and formal Government meetings only became more frequent after the official return of Hong Kong, a former British Colony, to China when Hong Kong became a Special Administrative Region of China. However, code-mixing has been a long-standing issue with Hong Kong

Government officials (in the Education Department) and some educators in Hong Kong (Lin 2000; Chan 1993; Cheng 1993).

The genre of code-mixing in Hong Kong was found to be mainly intra-sentential; that is, mixing linguistic units within the clause level (Li, 2000) and that mixing above the clause level is rare. It tends to take the form of single English words surrounded by Cantonese constituents (Ho, 2007). Often these English words are either abbreviations or acronyms of common terms (OT for overtime, OL for office lady, "soci" for sociology) or names or brand names (Nike, iPhone). Related to the phenomenon of code-mixing is the finding that there is a strong social norm disapproving of the exclusive use of English for intra-ethnic communication (Li, 2000). In other words, whilst it is common for a conversation between two Hong Kong Chinese to be conducted with heavy code-mixing, it is rare that the conversation is conducted exclusively in English, except in a formal academic situation, as English is the official medium of instruction for most universities and higher educational institutions.

Li (2000) proposed four reasons or motivations for code-mixing: euphemism, specificity, bilingual punning, and principle of economy. Of the four motivations, the last one, principle of economy, might be more relevant in explaining the popular habit of code-mixing in conversations and sometimes in written Chinese text with students in higher education in Hong Kong. Their frequent use — basically in communication in Chinese — implies some English vocabulary acquisition and expediency (Walkman, Web, and Y2K). Ho (2007) analyzed popular online real time communications (ICQ) and found lexical insertion of

English words into Chinese speech enables those who are bilingual to effectively manage the pressure to achieve specific purposes. It facilitates easy and comfortable communications among them, and allows them to express ideas and feelings in brief sentences without the fear of being misunderstood or having to explain in either English or Chinese.

There has been an ongoing debate among linguists on whether code-mixing is a bad thing that hampers students' learning of English (Lin 2000). The Government's stand has been to regard code-mixing as an evil that destroys young minds so far as learning English is concerned and therefore must be controlled. However, some educators [Biggs and Watkins (1993), Lin (2000)] argue that the reality and practicality of wide-spread code-mixing should be acknowledged and that attempts should be made to develop more flexible "Bilingual Classroom Strategies" to help learners to adapt gradually to using English as the medium of communication.

Wong (2007) examined the cross-cultural delivery of programmes of study through e-learning and noted the widespread practice of code-mixing in Hong Kong. He argued that such a phenomenon may just be Hong Kong's way of appropriating foreign culture into the local culture. In other words, this could be a form of "re-appropriation" or "glocalization" (p.12).
Therefore, is e-learning in a second language a critical barrier for the Chinese learners in Hong Kong? Would the cultural context embedded in the English language create a barrier to the learners under an e-learning pedagogy?

4. E-learning pedagogy and expected benefits

Whilst the term E-learning was chosen for the present research because of its popularity (as mentioned in the Introduction), many other names exist to describe this mode of learning including: online learning, web-based learning, networked learning, blended learning, and integrated learning. E-learning as a 'label' is therefore by no means universal and there could be many different interpretations of what e-learning is. It would be important to identify this mode of learning not by relying on the use of different labels but by what it stands for pedagogically. Indeed, in their study of e-learning development in the University of Barcelona, Barajas and Gannaway (2007) identified one of the problems that impeded development was the lack of pedagogical training in support provided for the technical staff, which made their communications with academic staff difficult.

In this study, the concept of e-Learning is based on a learning pedagogy that aims to allow groups of people to use computer-mediated networks to learn together, at the time, place, and pace that suits them best. Participants of such groups, including teachers/tutors and learners/students, can learn together through exchanging ideas and information, and accessing resources through their computer mediated conferencing network as well as the 'human network'. The more advanced version of such computer-mediated systems with additional functional features (e.g. email, announcements, calendars, online resources) to facilitate the learning process is called a Learning Management System (LMS). There are many well-known commercially available LMSs such as WebCT, Lotus Notes, Blackboard, and FirstClass but there are even more LMSs developed in-house by individual

universities as it was popular for universities to develop in-house LMS as one of their e-learning development strategies.

At the heart of a typical e-learning course are a LMS and a course website, which contains the course contents and any reference materials available online. As part of the learning material package, students might receive some printed third party copyright learning materials or sometimes a CD-ROM. However, all basic contents of the course are typically accessed through the course website. Additional learning materials with audio or video components may be provided to students though the Web (audio or video streaming). An appropriate mix of technologies is considered the best in meeting the needs of learners who are unable to adhere to a fixed tutorial schedule to meet with their teachers and classmates face-to-face. The asynchronous nature of these technologies gives the important advantage of time independence.

4.1 Towards an e-learning pedagogy: Laurillard's framework

In her analysis of generation of a teaching strategy, Laurillard (1993) identified five key aspects of the learning process. They are:

- Apprehending structure
- Integrating parts
- Acting on descriptions
- Using feedback
- Reflecting on goal-action-feedback

The learning process may be constituted as a dialogue between teacher and student which exhibits four types of learning characteristics; namely, Discursive, Adaptive,

Interactive and Reflective. The educational media utilized by the teacher can correspondingly be classified into one of these four types (Laurillard 1993, p. 100). One might argue that the technologies embedded in a typical e-learning system provide for all four types of media and therefore a teaching strategy based on an e-learning environment can generate Discursive, Adaptive, Interactive and Reflective learning.

A LMS is both an interactive and adaptive medium because it allows the teacher to set or reset learning task goals (to adapt to student's current learning situations) for the continuing interaction of student-student and teacher-student. Students and teachers then make use of feedback from each other to achieve the learning goals. It is also a discursive medium because teachers can reflect on student's descriptions and then adjust their own descriptions in order to make their original ideas more meaningful to the students. Asynchronous discussion that does not require real time response allows students much greater opportunities and time to participate in and to reflect on the discussion.

In online discussions, ample opportunities are given for all students to express their views and to interact with others on certain aspects of the discussion topics (threads) that interest them. For continuing education courses that are targeting working adults, such flexibility is especially crucial in maintaining active participation and in-depth reflection without the regular classroom meetings. One of the prime objectives in tertiary education is developing students' critical thinking and analytical skills. A course design that is based on constructivist principles and delivered through a computer-mediated LMS can facilitate the

achievement of such learning objectives and would be a prime example of the interactive approach for instructional design (Kember and Murphy, 1990).

4.2 Flexibility

It is obvious that an asynchronous medium such as a LMS removes the constraints of same time and same space for students. The freedom of learning without the constraints of time, space, and pace is also present in the independent study approach (except for face-to-face tutorials). However, an e-learning approach allows a class of students and teachers from anywhere in the world to 'meet' electronically so long as they have access to the Internet. It therefore also facilitates team-teaching and the use of guest teachers from other institutions or even other countries.

Such flexibility in the learning process is also valued strongly even in Hong Kong (Zhang and Perris, 2004), a city with a highly efficient transport system. Ho (2010) in an online survey of working adults through the more frequently accessed discussion boards found that working adults preferred a mixed mode of continuing education with both traditional face-to-face classes and e-learning. They would adopt e-learning simply because of its flexible delivery. It was also clear from that survey that prospective students would not wish for a reduction of face-to-face classes with the introduction of e-learning. Accepting e-learning only as an add-on to the traditional face-to-cafe instruction (without incurring additional fees) may be another form of pragmatism of Hong Kong learners.

4.3 Interactivity and connectivity

The provision of interactivity and connectivity to ensure adequate opportunities for teacher-student interaction and student-student interaction in either synchronous or asynchronous online communications would be critical in any e-learning design.

Although studies in the West, particularly in the USA, have shown that students tend to participate actively in online discussions and are therefore able to realize the benefits of enhanced interactivity and connectivity under e-learning, such is not quite the case for Hong Kong students. Whilst recognizing the value of sharing resources, ideas, and answers with others (Zhang, 2004), studies of student participation in online discussions seemed to reveal that Hong Kong students were in general not active participants and would only spend the minimum time necessary to fulfill any assessment-linked compulsory online discussions [Fung (2000), Fung (2004), Shin and Chan (2004), Deng and Yuen (2007), Yuen et al. (2009)].

4.3 Student-centeredness

An e-learning pedagogy centred on a democratic use of LMS may be argued to provide the ideal student-centred learning environment for learners. Unlike face-to-face discussions, separate computer conferences can be conducted concurrently. Therefore, in addition to topics planned by teachers, separate topics can be initiated by the learners and negotiated with the teachers. With ongoing separate discussion groups, diverse interests of subgroups of students can be satisfied without sacrificing interests of the majority. Therefore,

students are able to take greater control of their own learning. Bates (1995) pointed out that student control also implies that students are able to contribute as much or as little as they want and when they want, which includes the choice of simply to 'lurk', i.e. read but not comment.

This advantage of student-centeredness is particularly important in the context of Hong Kong education. As English is generally adopted as the medium of instruction in tertiary educational institutions but English is not the mother tongue of the majority of Hong Kong students, some students may be handicapped in engaging in face-to-face discussions. However, this handicap may be less of an obstacle to their participation in an asynchronous online learning environment because asynchronous communication allows students more time and freedom to reflect before engaging in the discussion. Without the constraints of same time, same place, and same pace, it is more convenient for the learners to use dictionaries or other language aids to improve their understanding of others' contributions and to polish up the language in their own contributions before posting it.

4.4 Deep learning

An e-learning pedagogy which takes full advantage of external links to other websites, external bulletin boards and databases, gives learners greater control and learning space to develop what Marton and Saljo called 'deep learning' [qtd. In Kember and Murphy (1990), Biggs (1992), Biggs and Watkins (1993a)]. According to Biggs (1996), deep learning based on a

Student Approach to Learning (SAL) position as he advocated, is good learning, as students would involve themselves

> ".....with using abstract frameworks for conceptualizing the task and for illuminating the data, and they are metacognitive in planning ahead and in monitoring their own progress, they achieve well-structured and integrated outcomes, and they actually enjoy the learning process." (1996, p. 45)

The presence of Laurillard's four types of learning: Adaptive, Interactive, Discursive, and Reflective are crucially important in developing students' analytical and problem-solving skills. Bates (1995) also argued for the value of computer conferencing (online discussions) in the development of an academic discourse:

> "Computer conferencing can be used to develop student skill in analysis, constructing and defending an argument, assembling evidence in support of an argument, and critiquing the work of other learners, as well as the work of other scholars." (1995, p. 207)

4.5 Collaborative Learning and Knowledge-Building

Collaborative learning and knowledge-building are important concepts from a constructivist perspective (a constructivist believes that reality is not objective but interpreted by the individuals and knowledge is constructed by individuals by bringing his or her own experience and perspectives into the process). Harasim et al. (1995) define collaborative learning as:

> "Any learning activity that is carried out using peer interaction, evaluation, and/or cooperation, with at least some structuring and monitoring by the instructor." (1995, p. 30)

and knowledge-building as,

> "The learners actively construct knowledge by formulating ideas into works that are shared with and built upon through the reactions and responses of others." (1995, p. 4)

Collaborative learning and knowledge-building are greatly facilitated in an e-learning environment as it removes the constraints of requiring all project team members being physically present at the same time and same place. It also makes knowledge sharing and knowledge building more convenient. Although it lacks a socialization dimension, an e-learning pedagogy more than compensates for this shortcoming by providing a greater space for sharing and interaction; that is, not limiting sharing to within one single discussion group but with all concurrent discussion groups. There is a gradual building of a learning community through online interactions (Woodruff et al., 1998).

4.7 Democratic learning environment

E-Learning also provides a more democratic environment (Zhang, 2004) for sharing and interaction because race, social standing, and physical appearance are less noticeable as face-to-face learning (unless students elect to reveal their physical characteristics through positing photos or self-introductions). Participants are judged largely on the basis of the quality and

contents of their contributions. Even the hierarchy of teacher and students relationship is de-emphasized to some extent in an online learning environment as the teacher would likely encourage more open discussions rather than giving his "final words" immediately. Without the barriers of geographic locations, urban/rural sub-cultures, and status, the learning atmosphere becomes more democratic.

4.8 Cost savings

One of the often cited benefits of e-learning used to be the potential economies of scale (Bates 1995; Bates and Pool 2003) to be achieved in the progressive development and introduction of e-learning at the institutional or even national level. The savings are expected to come from two sources.

- First, the spreading of fixed costs such as a common information infrastructure and e-learning management platform, and expertise in people
- Second, the sharing of development costs of shared components in courses of different programmes

In other words, the popular belief is that when e-learning activities of an institution reach a certain high level of volume and through well-organized sharing of development costs and expertise, economies of scale would be realized. In his study of cost-effectiveness of university education, Annand (2007) argued that the traditional organizational structure of cohort-based classroom structure cannot meet the growing demand for university education and a "continued evolution to online learning may reduce the need for

expensive physical infrastructure and thus reduce overall costs" (2007, p. 5) He did not provide evidence for his claim although he did point to the much improved connectivity and the open-source movement (which many attribute its beginning with MIT's announcement of its Open Course Ware project) as the reasons for economies of scale and the attendant radical reduction in costs.

On the other side of the fence, as based on a review and analysis of relevant literature, Morris (2008) argued that the evidence for such claims is mixed, and in many cases the claimed economies of scale were largely derived from economies of "scope" rather than "scale". Sharing experience and expertise are sources of economies of scope and can be realized through the sharing of a common technology (without necessarily relying on a common e-learning platform). Similarly, economies of scope can be achieved in organized development activities without the rigidity of necessarily using common components in courses. He also pointed out the lack of a clear definition of output from the economies of scale in e-learning. As learning is a designed process rather than a tangible product, measurements of any efficiency gains such as economies of scale would be difficult. This argument is probably true with any attempts to measure efficiency gains in education. The more important question in educational terms is whether the price to pay for any reduction in unit costs would lead to erosion in quality.

Similarly, demonstrating actual savings in e-learning in the Hong Kong context has also been found complex. As Ng (2000) reported in his pilot study of cost and effectiveness of an online course in Hong Kong, he

concluded there are various factors relating to the concept of costs and effectiveness that have yet to be defined better.

In the past, online learning may seem more expensive from the student's perspective because it requires a personal computer with certain standards of configuration and regular Internet access. However, as most Hong Kong students already have appropriate facilities, the overall costs for engaging in pure e-learning (but not blended learning) might even be lower as no face-to-face meetings means savings on time and costs of transportation, and on course material fees as fewer books need to be purchased. In addition, using links provided by the course websites as starting points, a systematic search of relevant learning materials available online is a much cheaper way of building up a personal 'library' of reference materials.

From the institution's perspective, the cost advantage of e-learning is by no means certain and often difficult to determine. An e-learning course has a clear advantage in its flexibility of on-going maintenance and development over traditional print-based distance learning course. Contents stored in electronic form are easier to maintain and update. New information available online can be added as additional links in the course website at much lower cost than in a printed version. Such cost advantage, however, may be offset somewhat by the need for technical support for the LMS and the costs of hardware and software in the short term. In the long term, however, the ease of updating will enable the course to be kept up-to-date and rich in contents, provided, naturally, the teacher is motivated to do it, . In short, the cost saving

potential has not been prominent in institutions' experience in adopting e-learning, but more often the opposite, heavy investment is necessary. Carr (2001) surveyed universities in the USA after the dot.com bubble burst on their spending on online programmes, and found many were struggling even to determine how much they had spent. But one frequent piece of feedback was that the costs were often greater than had been anticipated. Barajas and Gannaway (2007), based on their review of e-learning implementations in European universities, made similar conclusions: "Time and experience have shown that digital learning environments should not be considered an easy, inexpensive option" (2007, p. 116)

4.9 e-Learning, Integrated Learning and Blended Learning

Among all the different aliases of e-learning, two are of particular interest to this study; namely "Integrated learning" and "Blended learning". Jochems et al. (2004) argued that a more integrated approach to e-learning, which emphasizes the educational process and the effective use of appropriate technologies, is only one of the key success factors. An "Integrated e-Learning" approach is a student-centred approach to learning that always aims to take pedagogical, technical, and organizational aspects into account, with a systems design perspective mixing web-based and face-to-face instruction. It is believed that such an approach is best in enabling learners to realize the benefits envisaged under different approaches such as Dual Learning, Flexible Learning, and Complex Learning. However, as "e-Learning" is a widely known name to describe such web-based learning, the term is used in this research study for simplicity, with a broader meaning that also encompasses "Integrated e-Learning".

"Blended learning" - a hybrid form of traditional face-to-face learning and e-learning is another popular term. As already mentioned in *Chapter One*, "Blended Learning" is treated as a special class of e-learning for the purpose of this study. Outside academic circles, especially in the popular media, "e-learning" tends to be used as an all-encompassing name for all closely related forms of technology assisted learning.

Summary

To summarize, the many benefits identified in the previous sections attributed to e-learning must underpinned by an e-learning pedagogy. Although the technology employed in e-learning is essential, it is not sufficient to ensure successful learning. Furthermore, whilst an e-learning pedagogy can bring many benefits, there could be also negative impacts of e-learning. For example, Wong (2007), in examining the cross-cultural delivery of e-learning programmes in Hong Kong, argued that the importation of e-learning programmes, despite some economic and educational advantages over traditional face-to-face learning, is not without some risks. These risks include the suitability of learning materials embedded within cultural contexts foreign to local learners which could erode the local culture and become a form of 'cultural imperialism'.

5 Barriers to greater adoption of e-learning

The challenge to the successful implementation of e-learning is to recognize potential barriers and to develop appropriate strategies to overcome them. The often quoted barriers by various authors include: a shortage of expertise in the planning, implementation, and support of e-learning; readiness of teachers; readiness of the

institutions; and the nature of isolation of e-learners. E. M. Rogers' (2003) often cited classic on diffusion of innovations set a solid foundation for the study of diffusion of new ideas and technology. Although his book was not specifically related to e-learning, his model provides a useful set of lenses for examining e-learning adoption. He defined five intrinsic characteristics of innovations that influence an individual's decision to adopt or reject an innovation.

Characteristics that influence adoption	Definition
Relative advantage	Degree of perceived superiority of innovation
Compatibility	Degree of perceived compatibility with existing value, experiences and needs
Complexity	Degree of perceived difficulty to understand or use
Trialability	Degree of perceived ease of experimenting with the innovation.
Observability	Degree to which the results of an innovation are visible to others

Table 3.2: Roger's Five Intrinsic Characteristics of Innovation that Influence Adoption

These five characteristics — as a lens on diffusion of innovations — brings into focus most of the barriers to e-learning quoted in the literature as conceptual defects in the design of the form of e-learning. In other words, examining potential barriers to e-learning in the light of Rogers' general model of innovation diffusion may help us understand the nature of the barriers in relation to the present form of e-learning on offer to Hong Kong learners.

"Relative Advantage" pointed out that if the form of e-learning provided is not significantly better than the presently available option, i.e., face-to-face learning, it cannot attract adoption. Without "Compatibility" with the lifestyle and needs of the

targeted learners, e-learning is bound to fail. If learners see "Complexity" which means the form of e-learning is not easy to use, learners would not adopt it. First impressions are crucial. That is why poor "Trialability" (how easy it is to experiment with e-learning) can become a barrier to diffusion. Lastly, the spread of e-learning requires high "Observability" because high visibility of the outcome of e-learning will stimulate interest among the learners' peers.

Mungania (2003) conducted a Web-based survey of employees of seven large corporations who had taken e-learning courses delivered 100% online to determine e-learning barriers. The findings revealed seven types of barriers, namely:

- Personal or dispositional
- Learning style
- Instructional
- Situational
- Organization
- Content suitability
- Technological

However, demographic characteristics such as age, gender, marital status, level of education, and ethnicity were not found to be significant predictors of e-learning barriers. The significant predictors of barriers were: organizational, self-efficacy, computer competence, and computer training. In Mungania's study, self-efficacy means the learner's belief that he or she can be successful in e-learning. High efficacy therefore implies a more positive attitude that leads to a perception of fewer barriers. The reverse (low efficacy) implies a negative attitude which will lead to the learner seeing all kinds of barriers in e-learning, whether real or imaginary.

Tyan (2003) studied diffusion barriers to e-learning in corporate Taiwan. Based on his reviews of literature, he consolidated the various suggested barriers into 30

barriers and then, based on his survey of 150 e-learning corporate e-learning diffusers (those who have a direct role in the diffusion of e-learning in their respective corporations); he constructed a conceptual framework of e-learning barriers. His framework consisted of four factors. They are, in order of survey ratings of significance:

- Maturity of e-learning development
- Corporate readiness
- Cost of ownership
- Government support

Of particular interest to this study is his Corporate Readiness Factor which represents various internal constraints to e-learning diffusion. He identified five constraints:

- Budget constraint
- Knowledge constraint (lack of talent to manage e-learning)
- Equipment constraint
- Structure constraint (lack of economy of scale to achieve cost-effectiveness)
- Culture constraint (staff resistance)

All of these constraints seem equally relevant to educational institutions. Among them, the cultural constraint (staff resistance) is of particular interest to this research as it relates to attitudes and perceptions of the people on the receiving end of e-learning, namely, the learners. Staff members in a corporate e-learning programme are similar to students in an educational institution, save for the fact that the training conducted through e-learning is normally provided to them free of charge. Even when the e-learning training is free, Tyan's study showed that unless the learners understand and appreciate the potential benefits to them in their learning, resistance to e-learning becomes strong.

Muilenburg and Berge (2005) conducted a large-scale factor analysis study to determine the underlying causes of barriers to online learning. In order of severity, the eight barriers they found were:

- Lack of social interactions
- Administrative/ instructor issues
- Time and support for studies issues
- Learner motivation issues
- Technical problems
- Cost and access to the Internet
- Lack of technical skills
- Lack of academic skills

Their study revealed that respondents with the highest level of comfort and confidence using online learning technologies perceived significantly fewer barriers for social interactions, administrative/ instructor issues, learner motivation, and time and support for studies than the other groups who were unsure of their skills or were not using online learning technologies. Additionally, students who indicated they cannot learn well online had the highest barrier ratings and those who felt they learned better online had the lowest ratings for the barriers factors. In short, their findings agreed with Mungania's (2003) in that student perception and attitude to e-learning and their own confidence strongly influence their perception about barriers in e-learning. In other words, it becomes a self-fulfilling prophesy.

More specific to the Hong Kong context, Yuen et al. (2009) studied e-learning experience of university students in Hong Kong and discovered five major problems of students' use of the e-learning management systems, which in turn, would become barriers in their engagement in e-learning. The five identified problems are:

- Technological problems
- Communal involvements and competition
- Teachers are not keen

- Problems of system design and features
- Efficiency of administration and support

In a related study of review of ICT in the Hong Kong education system, Yuen et al (2010) found six major obstacles to ICT implementation as perceived by school principals:

- Difficult to integrate computers into classroom teaching activities
- Insufficient teacher time
- Lack of support from school board
- Not enough digital resources for instruction
- Not enough supervisory staff
- Teachers lack knowledge or skill

Whilst these findings may not be directly applicable to tertiary education in Hong Kong, they bear remarkable resemblance to those barriers identified in the interviews conducted in my study. Readiness of teachers must be central to success of pedagogical reform in any form.

The barriers to e-learning diffusion may also be examined from the prospective of readiness of major stakeholders in learning, namely:

- Readiness of teachers
- Readiness of institutions
- Readiness of learners

5.1 Readiness of teachers

Birch and Burnett (2009) investigated factors that influenced academics' adoption of educational technology within e-learning environments at an Australian university. In terms of obstacles impeding academics' adopting e-learning, the academics indicated institutional barriers such as a lack of clear institutional directions,

programme-wide strategic plans, clear policies, procedures, resources, and supports. In short, there is a lack of leadership at the top.

They also indicated individual inhibitors such as a lack of time, increased workload, distraction from regular duties and research, and a lack of rewards and recognition. The teachers also had pedagogical concerns such as: the need to cater to the learning needs of different students; the need to challenge students to become learner-centred, self-directed and independent learners; and information overload.

In general, all these pedagogical concerns have a direct impact on the teachers' workload and may also be viewed as indirect individual inhibitors. In addition, even with visionary leadership at the top with all the institutional barriers removed, without the teachers' enthusiasm and commitment, e-learning diffusion can only remain as an institutional strategy on paper and not in substance. Whilst these barriers were identified by the teachers from the teachers' perspective, the most powerful barrier to successful diffusion of e-learning must clearly be teacher resistance. In general, teachers' reluctance in embracing e-learning is likely to be a result of either lack of knowledge about and commitment to e-learning, or a lack of adequate recognition and compensation for teachers in the face of additional workload, especially when they are already overworked (Harasim et al., 1995).

Pajo and Wallace (2001) surveyed academic staff of three Colleges at an Australian university about their current use and future intentions of using Web-based technologies in their teaching. They found, based on the survey results, the top four barriers to the uptake of Web-based technologies were:

- Time required to learn new the technology
- Time and effort learning how to develop courses
- Lack of training
- Time required using and monitoring

Of the four, three of them are concerned with time commitment. Through a factor analysis of all the barriers, Pajo and Wallace (2001) identified three factors: Personal Barriers, Attitudinal Barriers, and Organizational Barriers. Among the three factors, the Personal Barriers which represent individual obstacles to the uptake of e-learning such as time, effort, and skill explained a significant portion of the variance in both current use and perceptions of the ease of use of the new technology. In other words, extra-time requirement remains the greatest obstacle in the uptake of Web-based technology in teaching.

In another study of e-learning faculty attitudes and barriers to e-learning at one of the mega open university, India's Indira Gandhi National Open University (2006 enrolment over 1.4M students), Panda and Mishra (2007) found that among the top barriers to e-learning diffusion perceived by teaching faculty "concern about faculty workload" ranked only 7, behind their concerns about access to students, training on e-learning, Internet access and network, technical support, instructional design support, institutional policy, and availability of hardware and software. Clearly the concerns are heavily related to the readiness of that particular Indian university in terms of technical support and the hardware infrastructure. Therefore, generalizing the results of their study out of context could be misleading.

Newton (2003) conducted an analysis of the relevant literature, a survey, and a series of interviews with academic staff on issues perceived as being important barriers to using technology in teaching in the UK context. He found that innovative use of

technology in teaching is often led by enthusiastic individuals with little extrinsic reward structure to encourage these innovations. Whilst the perceived barriers to innovation in teaching and learning such as extra workload, lack of extrinsic incentives, lack of institutional strategic planning, and lack of support and training are real, they alone did not seem significant enough to deter enthusiasm of many academic staff who are committed to improve their teaching through the use of ICT but are often frustrated at the lack of commitment and support of their institutions.

Wallhaus (2000) pointed out that in an e-learning environment, changes of teacher responsibilities and workload create the greatest impact on the university. Faculty will find less emphasis on lecturing in their new role but greater emphasis on facilitating the educational process. It will be necessary for them to adjust their role from a knowledge provider to a facilitator, by 'providing learning assistance in time patterns and modes tailored to the needs of individual students and by intervening when needed and selectively providing motivation and assistance to students' (p. 23).

Two cogent questions arose from this changing role of the teacher.

- What new definitions of teacher activities will be needed to capture the full scope of teacher contributions (in comparison with the traditional measure of contact hours and research output)?
- How will teacher productivity be measured and compensated?

Sometimes teachers' resistance to the role change may not be shown as open resistance or simple rejection of e-learning. Their resistance may be expressed in their apathy to lead in the online activities of the course. In their study of the use of course management systems (CMS, similar meaning to LMS) and online

technologies of their university, Yuen et al. (2009) surveyed over 900 students and found that one of the major problems in the use of these online technologies in learning is the "teachers are not keen". Wilson and Stacey (2004) studied the central role of teachers in online interactions from the perspective of innovation diffusion and found that teachers did not embrace change at the same pace or in the same way, but more importantly some were "more reluctant than others to adopt new technologies into their teaching practice" (2004, p. 39). The teachers' reluctance understandably presents a major barrier to diffusion of adoption of e-learning. Without online interaction, e-learning is no more than an electronic version of the traditional paper-based distance learning. Wilson and Stacey (2004) offered several approaches to shape staff development activities to help teachers to adopt online interaction in their teaching practice. However, it seems, without appropriate motivation, that staff development efforts can only enhance skills but cannot modify attitudes.

As much as we emphasize the benefits of self-directedness in learning, Hong Kong students by and large still prefer a teacher-centred approach for their learning. Therefore they expect their teachers to lead and to guide them in the online discussions. Teachers' inactive usage of the online discussion directly impacts students' motivation to participate and to persist in the online discussions.

5.2 Readiness of institutions

Readiness of the institutions is crucial to the successful diffusion of e-learning. The more noticeable problem is often a shortage of expertise and experience in the essential areas of instructional design, graphic design, multi-media design, Web

design, and computer networking than sheer numbers of staff. However, these problems on the surface are merely symptoms of a more deep-rooted problem of a lack of institutional strategy for implementing e-learning. Related to the above mentioned factor of teacher readiness, an institution-wide e-learning strategy must include strategies of winning teacher buy-ins and providing adequate support to teachers.

Nichols (2008) studied e-learning diffusion from an institutional perspective. Through a series of interviews with e-learning representatives of 14 educational institutions from New Zealand and other countries, he found that institutions that had successful diffusion of e-learning were those which had reached a stage where e-learning became an accepted and expected part of teaching and learning. He called that being a state of "sustainable embedding for e-learning" and the e-learning activity in the institution was proactive, scalable, and self-perpetuating, whereas for those not-so-successful institutions, e-learning was being "done to the institutions", and e-learning was seen as odd or novel which meant advocates of e-learning felt the need to continually justify their enthusiasm. What are the important factors that lead to such "sustainable embedding for e-learning"? Nichols (2008, p.603) listed six factors:

- E-learning represented or endorsed in centres of power
- Strategic ownership and acceptance for e-learning at the highest level
- An institution's readiness for e-learning in terms of a culture of innovative teaching and learning
- Alignment of policy and systems with e-learning activity
- Professional development as a vital strategic activity
- Dynamics of change were different for large and medium and small sized institutions

In other words, lacking any one of the above factors would provide a significant barrier to diffusion.

Bates (1995) proposed an ACTIONS model for institutions to examine its readiness for any technology-based learning development. This model consisting of seven criteria may also be used as a framework for analysing potential barriers to diffusion of e-learning. His seven criteria are (1995, pp.1-2):

A – Access
C – Costs
T – Teaching and learning
I – Interactivity
O – Organisational issues
N – Novelty: How attractive is this technology to the target student group?
S – Speed

With the rapid technological advancement, particularly in Internet accessibility and computing power over the past decade, speed and costs are no longer as crucial to the institutions, at least in the Hong Kong context. However the other criteria remain valid and highly applicable, particularly as a tool for analysis of data collected for this research project.

5.3 Readiness of learners

Readiness of learners can be a combination of their attitude toward e-learning and their preferred learning style. The former is a function of their perception of what e-learning really is and their belief of how effective learning can be achieved. Keller

and Cernerud (2002) studied students' perception of e-learning with students who already had two years e-learning experience on campus of a Swedish university, and found that the most significant influence on the students' perception of e-learning was the university's strategy of implementing e-learning rather than their individual background (age, attitude to using Web, learning style). However, somewhat contrary to expectation was their finding that male students and students with previous knowledge of computers were less positive towards e-learning than others. For the latter, perhaps students tend to be more open-minded if they feel they know less than others; whereas students with more technical knowledge may expect more and be more easily disappointed. A similar point was also raised in one of the interviews conducted in the present study. One participant in the interviews remarked that he believed current students were less positive toward e-learning because the technology employed in a typical e-learning LMS appeared dull and old-fashioned when compared with the exciting technology employed in a computer game.

a. Pragmatism of Hong Kong students and online interaction

In the Hong Kong context, we should bear in mind there is a strong culture of pragmatism about learning. In the main, Hong Kong learners tend to perceive e-learning as something nice to have as an add-on but not as a replacement for traditional face-to-face classes (Ho, 2010).

In their study of a failed attempt to connect a group of adult learners of a university in Hong Kong with an online community, Deng and Yuen (2007) found adult learners did not feel a strong need for online interaction although

they felt peer support was important. Perhaps the pre-existence of a physical group which enables group members to meet face-to-face makes a virtual community much less important. Nevertheless, a preference for traditional classes among Hong Kong learners seems well entrenched.

The conjecture that the lack of interest in online interaction is due solely to the availability of a physical community for the learners can be questioned. Fung (2004) studied the online communication pattern in a distance learning course in Hong Kong by analyzing the frequencies and contents of online discussions in the course, and found that although access to computers was not a deterrent; the participation in terms of frequencies was far from satisfactory. The lack of a physical group did not seem to motivate the learners to make use of the online discussion board. Two reasons for lack of participation were cited by the students: their lack of time and their preference for spending more time on reading. These reasons imply that the students in the reported distance learning course saw only marginal value in participating in the online discussions.

b. Student attitude toward learning

Student attitude towards learning can also be a strong barrier. In their study of the use of course management systems (CMS) and online technologies of one university in Hong Kong, Yuen et al. (2009) surveyed over 900 students and found that one of the major problems in using these online technologies in learning is the (poor) "communal involvements and competition" which means a lack of participation in the online learning activities and exchange of ideas due to either apathy or an unhealthy spirit of competitiveness. As they lamented:

"Students are sensitive to communal involvements in the CMS, and their participation would likely be reinforced by the culture and atmosphere. Students also expect instant and fast responses from other classmates, and are discouraged if there is no spontaneous response from other users. Some students perceived discussion on the CMS forum as unnecessary competition. " (Yuen et al., 2009, p.198)

Perhaps an even more fundamental issue is Hong Kong students' resistance to the learner-centred principle embedded in a typical e-learning environment. Ng et al. (2002) interviewed 29 part-time postgraduate students in universities in Hong Kong to ascertain their perception of effective teacher practice in their learning and found, among other things, the students showed a strong preference for a teacher-centred approach. Their preference for 'transmissive' type teachers is built on a belief about knowledge transmission although, as the authors acknowledged, learner-centeredness and teacher-centeredness may not be discrete concepts and could well be viewed as one continuum. However, blindly pushing e-learning without due consideration of the low acceptance of a learner-centred approach by Hong Kong students can obviously lead to barriers in diffusion.

c. Learner Isolation and Loneliness/Student Counseling and Guidance

A common criticism of any form of independent study such as traditional distance learning or e-learning is the "separation of teacher and student, the disempowerment of students from making decisions about their own learning" (Evans and Nation 1989, p. 246). The lack of face-to-face contact in an e-

learning environment is likely to exacerbate such separation and lead to feelings of isolation and loneliness. In addition, without regular contacts with fellow students provided by face-to-face tutorials, students will likely reduce their utilization of other forms of socialization available on-campus.

One of the major challenges of the e-learning approach is that a certain level of contact must be maintained by the teacher with the learners to provide adequate guidance, challenge, and prompting (intervention). In practical terms, this means that demand for the teacher's time will likely be higher. In some cases, this additional workload may be compensated by the ease of maintaining course materials on a website during the initial offering of the course, but in a steady state of the course, this additional workload must be recognized and adequately resourced to make e-learning successful.

It might be relevant to raise one issue regarding loneliness in cyber space. According to popular belief, heavy usage of the Internet can contribute to depression and loneliness. However, in his study of the usage behaviour of a popular social networking utility, ICQ, by university students in Hong Kong, Leung (2002) found the students' feelings of loneliness did not increase or decrease with ICQ use. In other words, the level of ICQ use did not significantly affect a student's feeling of loneliness. On the face of it, loneliness may not be as strong an inhibitor to learners in Hong Kong as popularly believed.

Summary

Barriers to e-learning may come in different forms. However, clearly buy-ins and readiness of the three major stakeholders in any educational institution, namely, students, teachers and institution are crucial in any attempts to implement an innovative teaching and learning approach such as e-learning. Lack of genuine buy-ins and adequate planning and support undoubtedly will create barriers and lead to failures of implementation.

6 e-learning under Web 2.0

Web 2.0 is the term coined in 2003 by Dale Daugherty and popularized by Tim O'Reilly to describe a second generation of the World Wide Web that facilitates the direct participation of the end users in the services being delivered. The term has since been adopted by educators to emphasize the participator nature of Web 2.0 services as a medium of instruction. According to Webopedia, Web 2.0 focuses on the ability for people to collaborate and share information online and:

> "Web 2.0 basically refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users. Other improved functionality of Web 2.0 includes open communication with an emphasis on Web-based communities of users, and more open sharing of information." [Webopedia (2011)]

The popular social networking sites such as Facebook, Blogs, Wikis, and Twitter are all designed with a Web 2.0 philosophy. The strength of these Web 2.0 applications lies in the open communication platform which is very similar to the intention of the

forum or conferencing facilities in a typical e-learning LMS. The rapidly rising popularity and availability of such Web 2.0 applications means that e-learning students would have many options available to them to interact in addition to the traditional centralized LMS. Teachers can also make use of such options to support and supplement classroom instruction. An example of such an application of Web 2.0 is the use of Wiki in learning news writing through the formation of a Wiki community where the students can share the generating, revising, and organizing of the contents as a group (Ma and Yuen, 2008).

The traditional LMS may be at a disadvantage to compete for the attention against such Web 2.0 applications. As by nature of being a purpose-designed software for education only, it lacks many of the social function features such as photo and video sharing, expansion of social networks, social bookmarking, instant messaging, audio/video conferencing, and games. As Web 2.0 gaining popularity, the emergence of the concept of e-learning 2.0 followed, which generally refers to the more recently developed learning management systems that incorporated and give greater emphasis to social learning and the use of social software such as blogs, wikis, and Second Life (Karrer, 2007; Redecker, 2009).

Hartshorne et al. (2010) reviewed relevant literature and studied teacher awareness of the potential of Web 2.0 technologies in education and found good reasons for greater use of various Web 2.0 applications in higher education. However, Keats and Schmidt (2007) argued that with emerging technologies such as Web 2.0 and deeper understanding of the educational process, education is approaching a potential tipping point. They posited that the set of changes may constitute a new paradigm

which they referred to as Education 3.0. The conceptual characteristics behind Education 3.0 include:

- the primary role of a professor becoming an orchestrator of collaborative knowledge creation;
- the contents of knowledge will be arranged as free and open educational resources created and reused by students across multi-disciplines and institutions; and
- the learning activities will become open and flexible and focus on creating room for student creativity and social networking outside traditional boundaries of discipline, institution, and nation.

Relative to the future style of e-learning, they believe e-learning should be driven from the perspective of personal distributed learning environments consisting of a portfolio of applications. (2007, p. 4)

In his study of the relationship between the so-called Digital or Millennium Generation and Web 2.0, Roberts (2010) found post-secondary students just entering colleges in the USA do not function as a monolithic group, but their use of Web 2.0 is related to developmental stages and life situations. In other words, their use may be quantitatively similar but qualitatively different in relation to their age and life stage purposes. Roberts argued that the idea of a Web 2.0 "does not designate a technologically superior Web, but a business orientation that leverages existing technologies to take advantage of increased computing power and bandwidth ...." (2010, p. 109). However, he conceded that it is the instructional potential of those participatory services that attracts the attention of educators.

The significance may lie in the fact that most of these social networking technologies were not available in the past but are widely available now to anyone at even a tender young age. In other words, students of higher education in the future will all be too familiar with Web 2.0 applications by the time they come into contact with e-learning. How would students orient themselves with e-learning, and how should the position of a traditional LMS be adjusted in the scheme of things?

Summary on e-learning under Web 2.0

The implications of the rise of Web 2.0 on e-learning and in particular with respect to the next wave of practice of e-learning are very much an interesting subject for research but is outside the scope of this current study. It would no doubt be an interesting extension of research for the current project.

Summary of Chapter

This chapter has reviewed literature to gain a basic understanding of six broad subject areas, namely,

1. Wider benefits of learning and learning in later life,
2. Learning in a cross-cultural environment,
3. Learning in a second language,
4. E-learning pedagogy and expected benefits,
5. Barriers to diffusion of e-learning, and
6. E-learning under Web 2.0.

It should be emphasized that these six topics cover a wide range of research interests and any one of them merits its own deeper review of relevant literature. What has been covered is by no means comprehensive. However, given the limited scope and the specific focus adopted for this study, it is believed that the review provided in the

above sections is sufficient for the basis of the enquiry that leads in to the research question in a reasonable depth.

There are clearly wider benefits of learning to learners of all ages ,and the introduction of e-learning would seem to support a wider access to learning than the traditional face-to-face mode of learning. Specifically for the older learner, there seems little argument that e-learning can benefit both them and society. In addition, contrary to conventional belief that older people are less capable of working with computers, there is some evidence that older learners can benefit greatly from the advantages offered by e-learning (Chan et al., 2005; Da Gong Bao, 2011).

The cultural context of Hong Kong learners is a cross-cultural setting straddling the crossroads of the East and the West. Such a position has its advantages but also disadvantages such as learning through a second language. For them, there are some attractive benefits in e-learning and e-learning pedagogy, but their cultural heritage and environmental conditions may give rise to certain barriers in the greater adoption of e-learning.

This literature survey has revealed a variety of questions that helped to establish the context of some of the issues relating to the main research question of the study. That is, whilst there is strong evidence in the literature for the benefits of an e-learning pedagogy, Hong Kong learners seem to have unique obstacles such as learning in a second language and in a cross-cultural environment. Do these obstacles remain prevalent under the e-learning mode or are they somewhat mitigated because of the e-learning environment and pedagogy?

Additionally, a number of organizational, social, personal, and technological barriers to the greater diffusion of e-learning have been identified in the literature from other contexts. Whether these barriers are equally applicable to the Hong Kong context does not seem to have been explored. The data collected and analysed in this study are therefore intended to find answers to these questions.

The following chapter will present the methodology underpinning this enquiry and the methods employed in conducting data collections and analysis.

Chapter Four

Research Methodology and Methods

This study aims to investigate the suitability of e-learning in Hong Kong tertiary education in terms of the benefits and impacts on the learners, the teachers, and the institutions. It also aims to investigate the main barriers to greater diffusion of e-learning in Hong Kong using teacher-researchers as the main informant in the study. Therefore, it is useful to examine the underlying epistemological position, the research methodology, and methods employed in the design of the research.

1. Paradigm and Research Methodology

The research paradigm or epistemological position for this study is primarily postpositivist. The research methodology adopted was a mixed method approach underpinned by the Grounded Theory.

1.1 Postpositivism

Postpositivists believe that reality cannot be fully comprehended and human knowledge is thus unavoidably conjectural and not unchallengeable. Therefore it must be examined imperfectly and probabilistically (Coyle and Williams, 2000) and modified or withdrawn in the light of further investigation. They also believe that "reality is multiple, subjective, and mentally constructed by individuals" (Crossan 2003, p. 54). Postpositivists share with positivists the idea of 'objective truth' and the goal of seeking "explanations that lead to prediction and control of phenomena" and "emphasizes cause-effect linkages that can be studied, identified and generalized" (Ponterotto 2005, p. 129) which implies a deterministic philosophy. They also tend

to be reductionists in that attempts are often made "to reduce ideas into a small discrete set of ideas for testing" (Creswell 2009, p. 7).

Therefore, from a postpositivist standpoint, their research emphasis would be on empirical observation, measurement, and theory verification (Creswell, 2009) or as Karl Popper advanced - theory falsification (Ponterotto, 2005).

1.2 Mixed Method

This research adopted a postpositivist position as a mixed method approach was taken to seek answers to the research enquiry from the teachers and researchers. The use of a qualitative method of in-depth interview with the key informants is supplemented with quantitative methods in order to find a 'collective voice' from the group of key informants (teacher-researchers) in response to questions about student perceptions, attitudes and behaviours in relation to the e-learning mode of learning. Attempting to reach a representative picture of the multiple realities of individuals fits the epistemological stance of postpositivist.

This enquiry used a mixed methods approach and not a purely qualitative research or quantitative approach as characterized by Johnson and Onwuegbuzie (2004, p. 20). The mixing of quantitative and qualitative methods occurred across the stages and to some extent also within the stages. A mixed method research strategy is underpinned by a postpositivist 'worldview' (Creswell, 2009).

The practice of mixing quantitative and qualitative methods in educational research gained popularity in the late 1990s but raised serious concerns and even objections

from purist on grounds of incompatibility of the different epistemological paradigms that underpin quantitative and qualitative methods. Howe (1998) refuted such objections and argued there is no incompatibility between the two methods at either the level of practice or of epistemology. He observed,

> "At the level of epistemological paradigms, philosophy of science has moved on, into a "new" or "postpositivistic" era. Questions about methodology remain, but they ought not to be framed in [a] way that installs abstract epistemology as a tyrant or that presupposes the moribund positivist-interpretivist split." (1998, p. 15)

Newman and Benz (1998) argued that qualitative and quantitative research methods are two neither mutually exclusive nor interchangeable research approaches. A more practical view of their relationship is one of isolated events on a continuum of inquiry.

The reasons for adopting a mixed method approach were twofold. First, employing a combination of quantitative and qualitative approaches enables the utilization of the strengths of both approaches. Second, the data collected, which consist of both numerical and text-based data, require the use of both quantitative and qualitative techniques. The former are more suitable for numerical analysis for statistical inferences but the latter are more suitable for content analysis (Weber 1990; Mason 1996) for meaning from text.

1.3 Grounded Theory

This research project is about how teachers and researchers see e-learning in Hong Kong. As there was little relevant research work reported in the literature on similar

topic with the same context, no suitable theoretical framework could be deployed as the basis for hypothesis testing. Instead, the research design was by necessity based on the grounded theory approach. The Grounded Theory approach was first promulgated by Glaser and Strauss (Glaser and Strauss, 1967) in their research on dying hospital patients. It was originally referred to as the constant comparative method, and later known as the Grounded Theory, which describes a systematic generation of theory from data that contains both inductive and deductive thinking. They then took on different paths on how to conduct grounded theory research. Glaser (1992) defined grounded theory as a general methodology of analysis linked with data collection that used a systemically applied set of methods to generate an inductive theory about a substantive area. Strauss and Corbin (1990) defined grounded theory as a qualitative method that used a systemic set of procedures to develop and inductively derive grounded theory about a phenomenon. Grounded theory focuses on the process by researching on what is happening, how things are done, and why and when research participants do what they do.

This research adopts the Strauss and Corbin approach by using a more traditional research approach with a pre-determined topic to start with and phenomenon are identified and studied. The first stage of data collection from a large sample of students and teachers helped to establish the focus of the study and the key questions for the in-depth interviews in the second stage of the enquiry. As a large quantity of survey data was involved, applying some quantitative techniques seems appropriate.

As for the second stage of data collection, the in-depth interviews, taking the qualitative method approach was necessary in order to obtain more substantial input

from the limited number of informants available. Because the core ideas concerning the research issues of this inquiry were generated from the interviews of informants, a phenomenological approach seems appropriate. Their opinions and views regarding the research issues depend entirely on their individual understanding or perceived reality of the issues involved. Data collected from this qualitative phase is the most important and necessary component as the informants' (the 'experts') understandings about e-learning in Hong Kong, and the meaning that they made out of their individual experiences, provided the answers being sought. This phase of the study, which depends on interviews, is phenomenological in terms of methodology of enquiry. It is human-centred based on a constructivist research perspective.

This phase of the research process mainly followed an inductive approach involving the informants at multiple stages in the enquiry. In other words, the overall approach did not start with a theory or hypothesis for testing but rather only with observations through interviews and follow-up surveys, thus allowing a picture to emerge.

According to Strauss and Corbin (1990), after data collection and interpretation, subcategories are linked to categories that denote a set of relationships in that they generate an inductively derived theory about a phenomenon comprised of interrelated concepts. There is no absolute right or wrong about the views expressed by each informant. What they provided are their individual understandings and assessments of the e-learning state of play in Hong Kong. This follows Glaser and Strauss's (1967) tradition of a grounded theory of reporting results validity not based on statistical significance but instead on "fit, relevance, workability and modifiability". A theory

is considered modifiable if it can be altered when new relevant data is compared to existing data.

The observations and conclusions made were no more than a reflection of the subjective reality held by the three groups of stakeholders of e-learning; namely, the learners as the receivers, the teachers as the providers, and the teacher-researchers whose functions include research, teaching, and e-learning course design and planning.

Quantitative methods, however, are also needed for data analysis of data collected in the final phases of the enquiry; namely, the follow-up questionnaire survey after the in-depth interviews (the Follow-up questionnaire survey). As the informants' realities are multiple and multi-faceted, employing certain simple statistical techniques can bring about a general group view in relation to the research issues to enrich the understanding of the phenomenon under observation. In addition, as a large number of informants were involved and large volume of data were generated in the online surveys, the use of simple descriptive statistics alone enabled a collective view of these informants to emerge along with some measures of convergence of their views.

1.4 Summary

In summary, the purpose of using the mixed method approach was primarily to add triangulation of data and to enhance the opportunity for interview participants to provide more comprehensive input to the research question. Although a mixed method label seems fitting for the overall approach and design of this research, the approach taken in this enquiry might perhaps be more accurately described as what Johnson and Onwuegbuzie (2004) depicted as the 'pragmatic' or 'pluralist' position,

which means mixing methods in ways that 'offer the best opportunities for answering important research issues' (2004, p. 16).

2. Research Design

The research design of this enquiry fits Creswell's (2009) "Sequential Explanatory Strategy" of the mixed methods approach. It has three separate and sequential data collection stages. The mixing of qualitative and quantitative research methods are "connected" between a data analysis of one phase and the data collection of the following phase. All three stages are based on the same theoretical framework discussed in ***Chapter Three, Literature Review and Conceptual Framework***. **Figure 4.1** shows a schematic diagram outlining the design.

2.1 The three stages of data collection and analysis

The first stage was a series of online questionnaire surveys of learners and teachers at one of the largest continuing education arms of the major universities in Hong Kong. The identity of this institution shall remain anonymous. This institution — hereinafter referred to as College of Lifelong Learning (CLL) — has an annual enrolment of over 100,000 or 21,000 Full-time Equivalent (FTE). Students and staff of this institution have provided input to this research through a series of surveys conducted online. More details about the surveys will be provided in ***Chapter Five, Presentations of Findings and Discussion - Web surveys***.

The main purpose of surveying teachers and students of CLL was to investigate the suitability of e-learning in terms of its benefits and impact from the perspectives of learners and teachers. This stage was largely quantitative by nature as a large number

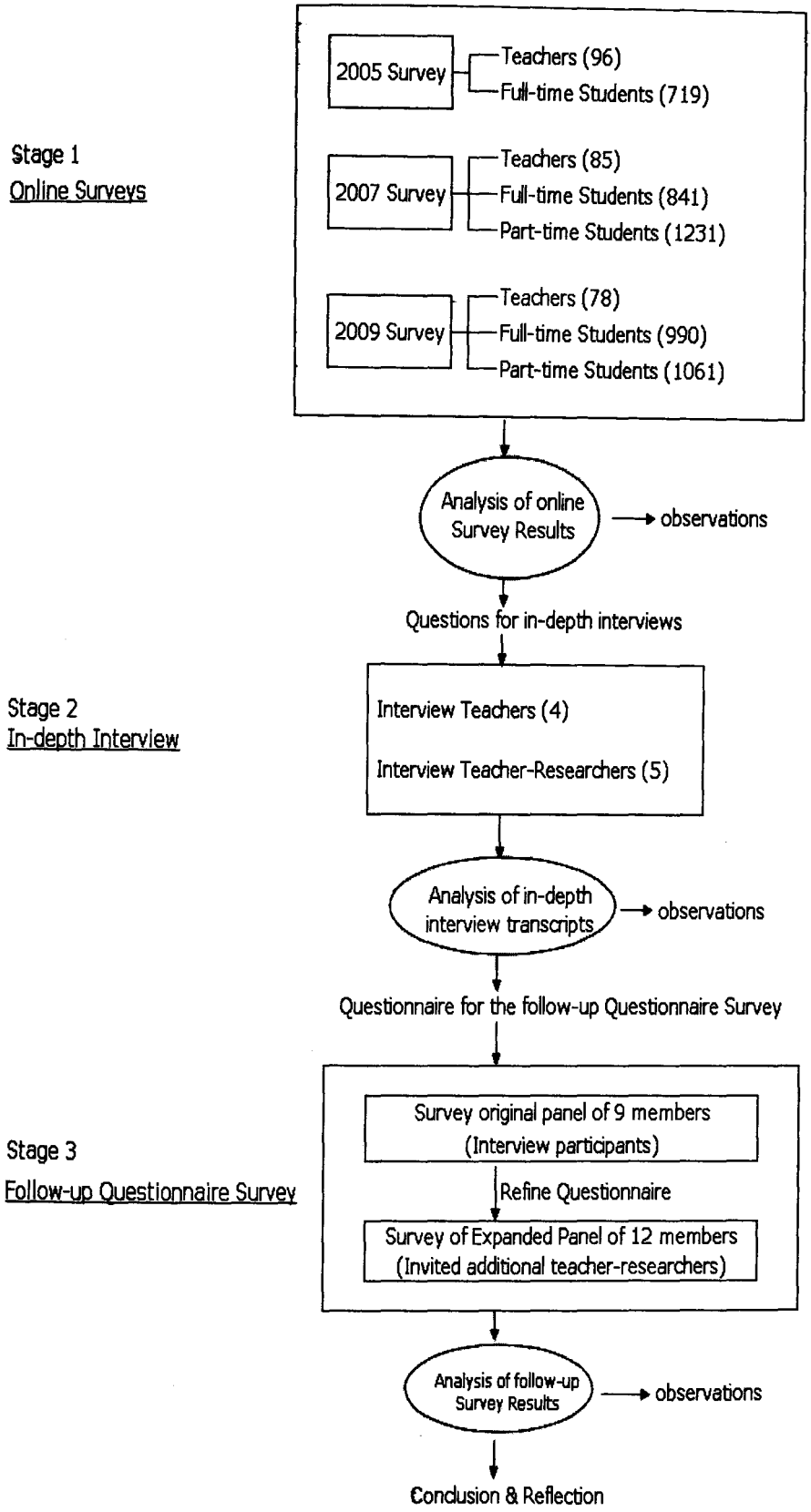
of informants were involved and their answers to the surveys could be analyzed using statistical techniques.

The outcomes of this stage were (a) confirmation of the suspicion that despite the high expectations of the institutions and the public at large, e-learning is not well utilized at tertiary educational institutions in Hong Kong, and (b) suggestions of certain potential barriers to diffusion.

The second stage of research data collection was a series of in-depth interviews with nine teachers and teacher-researchers. This stage explored participants' views on e-learning in relation to the main research issues using the qualitative technique of interviewing. Results of this stage provided the basis for the construction of a questionnaire for the final stage – the follow-up questionnaire survey. Additionally, results from the interviews also served the purpose of triangulation with results from the online surveys in Stage 1.

The third stage was a follow-up questionnaire survey using results of the interviews as a questionnaire to ascertain the extent of convergence of opinions of the original panel of nine interview participants. This questionnaire was then administered to an expanded panel of 12 teachers-researchers to broaden representativeness of the participants in terms of experience and e-learning environment. Quantitative methods were used for this stage. Findings from the second and third stages are presented and analyzed in ***Chapter Six, Presentation of Findings and Discussion - In-depth Interviews and a follow-up questionnaire survey.***

Fig 4.1 A Schematic Diagram of the Research Design employing a Mixed Methods Approach



2.2 The Informants in the study

Three constituent groups of informants participated in one or two of the data collection exercises; namely, the Web surveys, the in-depth interviews, and the questionnaire survey of the follow-up questionnaire survey. They are the learners, the teachers, and the teacher-researchers.

a. Learners

There were two categories of learners in terms of their modes of attendance, namely full-time students and part-time students. Part-time students are typically working adults who attend classes in the evenings and weekends only. The two groups are distinctly different not only in their modes of attendance but also in their age and programmes of study. The full-time students are mostly aged 24 or below and are registered on sub-degree programmes of study (i.e., a higher diploma or an associate degree), whereas the part-time students are typically working adults with more diverse personal profiles. For example, over 80% of them are between age 25 to 49 and their level of study ranged from sub-degree to doctoral level with education attainment ranging from senior secondary to Master/Doctoral at entry to their programmes.

The learners themselves are likely in the best position to provide an assessment of benefits and impact derived through their own observations and feelings upon reflection on their engagement in e-learning. However, the learners themselves may not be competent self-observers regarding noticing benefits and impact resulting from that engagement. Some benefits and impact may be subtle and hard to recognize in a snapshot recall situation. They may not be aware of all the changes that are taking place with them or the consequential impact on others close to them. In general, they

would likely not be knowledgeable enough to suggest barriers to e-learning diffusion in Hong Kong.

b. Teachers

There are also two categories of teachers as the second group of informants to the study; namely, full-time and part-time teachers. Part-time teachers are either typically full-time academics from other tertiary institutions or senior professionals from industry.

Teachers as informants may be able to observe behavioural changes occurring with the learners from a more objective and independent vantage point. Surveying the teachers could obtain data for comparison of teachers' expectation on e-learning benefits and impact to the actual experience of the learners. However, as there is no way to be sure that those teachers who responded were actually the same teachers who taught the learners who responded, such comparisons can only be in very general terms. In addition, the average teacher may have some opinions on why e-learning is not popular in Hong Kong, but are unlikely to have an overall view of the state of play to suggest likely barriers to diffusion.

c. Teacher-researchers

The group of teacher-researchers interviewed or surveyed may be regarded as the most important constituent among the informants of this study. The inclusion of teacher-researchers as informants is intended to strengthen the credibility of source data with insights from experts from different higher educational institutions. Since teacher-researchers are active in both teaching and research in the field of e-learning,

they may be regarded as being more knowledgeable informants with respect to e-learning practice in Hong Kong as well as more balanced in their views with their dual roles of practitioner and researcher. Moreover, most of these teacher-researchers also have played or are still playing leadership roles in the development and diffusion of e-learning in their respective institutions. Therefore, their input, in particular the impact of e-learning and the barriers to greater diffusion of e-learning, are of greater relevance to this study. On the one hand, it might be argued that these experts, because of their positions and roles (by being crusaders or early-adopters), are positively biased towards e-learning. On the other hand, it is precisely their extensive first-hand experience gained in practice and grounded in solid knowledge about e-learning from their research, their insights on the impact of and barriers to diffusion of e-learning, which are both contextual and situational, would seem more credible than the views held by an average teacher.

Of the total of 17 teacher-researchers who participated as informants to the study, all are holders of a doctoral degree in a relevant discipline (ICT and Education) and are active researchers in e-learning. Some hold full professorial positions, and the rest hold associate professorial positions in their respective institutions.

- **Validity of using teacher-researchers as key informants**

  The selection of informants in the in-depth interviews is a crucial step in the research design. The project was originally designed to rely on CLL students and teachers as key informants. However, during the analysis of results of the three rounds of online surveys, it became apparent that the level of understanding of what e-learning really was varied greatly among students and teachers. Their

uneven knowledge about e-learning led to certain misunderstanding about the potential benefits and impact of e-learning, which might distort the findings of the study. Moreover, since all the teachers and students were from CLL and therefore heavily limited by their experience with the only e-learning platform available to them, an in-house LMS called the SLMS, any generalization from their views may not be sufficiently representative of the phenomenon, and as a result has limited applicability to the wider context of Hong Kong.

- **Criteria for selecting teacher-researchers as informants**

  Using more teacher-researchers from various tertiary educational institutions in Hong Kong as key informants is intended to overcome such shortcomings in the research design. The teacher-researchers have the following advantages over teachers at large:

  - they have more in-depth knowledge about the theory and practice of e-learning
  - they are less likely to be limited to experience with only one e-learning LMS
  - they are exposed to more diverse viewpoints about e-learning
  - they all have put in greater effort in implementing e-learning in their own teaching
  - their experiences of the impact of e-learning are not superficial
  - almost all of them have done some evaluation of e-learning effectiveness in their own course

Overall, because of their expertise, their views on e-learning tend to have far greater impact on the formulation of e-learning policies at their own institutions. Indeed, several of them, in addition to their regular teaching and research duties, also concurrently hold appointments of director/ head or associate director/ head of an e-learning centre of their respective institutions. This means they also shoulder an institution-wide responsibility for e-learning policy formulation, strategic implementation, and leadership in e-learning programme planning and development. .

Perhaps, even more importantly, the teacher-researchers of e-learning, either individually or collectively, would have a far greater influence on the Hong Kong public and the Hong Kong Government on the formulation of policies on e-learning or ICT in education development for the whole territory. Some of them have acted as consultants to the Government or served as members of Government advisory committees in the related areas of e-learning and ICT in education. It is therefore argued that collectively, the group of teacher-researchers in the local universities is playing an important role in shaping the reality for the future of e-learning in Hong Kong, at least so far as influencing the public and the Government is concerned. Relying on them as my key informants would seem to have a better chance of resulting in a valid answer to the research question than relying on any other groups.

2.3 Organization and process of Stage One - the Web Surveys

The series of separate web surveys for the learners and teachers were conducted three times in 2006, 2007 and 2009 with essentially the same questionnaire instrument. In 2007 and 2009, additional questions were asked and some minor changes to the questionnaires were made to the questions asked in the survey due to a change of

research focus. More details are presented in ***Chapter Five, Presentation of Findings and Discussion – Web Surveys.*** Samples of the questionnaires used are in **Appendices A & B.**

a. Sampling for the Web surveys

For the 2005 survey, only the full time students and staff were invited to participate in the surveys. For the 2007 and 2009 surveys, open invitations were extended to all part-time students and part-time teachers who had already been assigned an account on CLL's e-learning management system and therefore had likely utilized e-learning in their teaching and learning. All full-time students and teachers automatically have an account for, and therefore access to, the e-learning management system.

The online web survey sampling method may be regarded as convenience sampling, as all participants were volunteers who responded to an open invitation. Including only those teachers and students who volunteered in the online surveys may have introduced a certain degree of 'Volunteer Bias' (Palys, 1997) but is not considered overly serious because of the nature of research question and the large sample size that resulted as all programmes of study with e-learning components must register their students and teachers with SLMS. Those not registered with SLMS would have no access to SLMS, which implied their courses of study were not registered as one that contains e-learning components. Therefore, they would unlikely have any recent experience with e-learning to share nor would they have views on the suitability of e-learning or the potential barriers to e-learning diffusion based on the e-learning environment current to them.

Posting an open invitation to all eligible students and teachers on the e-learning platform would minimize sampling error and thus enhance reliability of data collected. In addition, doing it on the Web is virtually of no cost consequence. Traditionally, the drawback of such a convenience sampling method was low response rate. However, as reported in ***Chapter Five, Presentation of Findings and Discussion -Web surveys,*** the actual response rates were better than expected.

For the web surveys, it was necessary to create opportunities for the learners who have engaged in e-learning to reflect on their learning experience and to be able to articulate the benefits that they could attribute to e-learning. Some of these perceived benefits are internal to the learners, which may not be observable to others and therefore unverifiable. They could comment on their learning experience in terms their attitude towards e-learning; e.g. ease of use of the technology involved, effort necessary in overcoming the barriers such as language and skepticism.

b. The survey instrument

The design of the questionnaire for the three web surveys are presented in ***Chapter Five – Presentation of Findings and Discussion – Web Surveys*** and complete samples of invitation to teachers and students to participate in the survey and the questionnaires in **Appendix A and B** respectively. The schedule of the three rounds of web surveys conducted is presented in **Appendix C**.

c. Validity and Reliability of the Web surveys

The web survey process helped identify volunteers among the teachers to participate in the second stage of enquiry – the in-depth interviews. At the end of the online

survey, respondents were invited to participate in an individual face-to-face interview to explore the issues raised in the online survey further. As teachers were asked to volunteer, the sample can be regarded as random with little built-in sampling bias.

On the one hand, one might argue that those who responded to a web survey on e-learning and volunteered for the subsequent interview would already have a positive attitude towards e-learning. In other words, a certain degree of 'Volunteer Bias' was introduced in sampling. On the other hand, the opposite might also be true; that is, teachers with a strong negative attitude towards e-learning might also be motivated to respond in order to voice their objections to e-learning.

However, since the interviews aimed at 'further exploration of the issues of e-learning', it is also reasonable to expect that those teachers who volunteered are likely to have greater knowledge and more personal experience (whether positive or negative) with e-learning either as teachers or as learners themselves. This is crucially important to the validity of the outcome of the interviews. Teachers with prior experience of e-learning as learners themselves would be able to see things from the students' perspective in a more realistic way. In fact, the addition of invited experts in e-learning in higher education also aimed to add validity to the outcome of the enquiry.

The content validity of the survey instrument was established in part through the grounding of the items in research reporting judgments of practitioners, with particular reference to the annual e-learning benchmarking surveys conducted by the Australian Flexible Learning Framework of the Australian Department of Education, Sciences

and Training (2005, 2007a, 2007b, 2008a, 2008b, 2008c). In addition, content validity of the survey instrument was further checked by comparing the draft survey questionnaire with a similar survey instrument used by the Open University of Hong Kong in their internal study of student persistence (Yuen et al., 2011).

The outcome of the web surveys not only provided views of learners and the providers of e-learning in respect of the expected benefits, and actual experience with e-learning both in terms of benefits and barriers, it also served as the starting point for discussions with teachers and experts.

d. Data analysis in Stage One

As the volume of data collected through the Web survey is quite large, simple quantitative analysis, mainly descriptive statistics (Fink, 1995; Creswell, 2009) such as mean values, percentages of frequencies and standard deviation have been employed to show distributions of preferences and ranking of importance of choices indicated by the informants (students and teachers) in response to the questions in the survey questionnaire. For the additional open comments provided by the informants, coding of their comments and frequency counts of the codes are carried out for the purpose of identifying certain patterns or clusters of themes (Creswell, 2009; Miles & Huberman, 1994).

2.4 Organization and process of Stage Two - the in-depth interviews

The in-depth interviews focused on "ask the teachers and the experts'. In-depth interviews were conducted with those teachers who were willing to participate and with several invited experts in the field of e-learning in higher education institutions in

Hong Kong. The in-depth interviews were conducted only in 2009 and the schedule of in-depth interviews and dates of approval of the transcripts by the participants is presented in **Appendix D**.

a. Sampling for participants of interviews

Sampling for potential participants (the teachers) was initially convenience sampling. As e-learning was not considered controversial or political, it was assumed that the CLL teachers are, in the main, a homogeneous group for this topic of enquiry and therefore an open invitation to all teachers to participate in the interview was embedded in the online Web survey. However, from those who indicated interest in participating, the older teachers with more experience in e-learning were selected and approached to make appointments for the interviews to take place. Some of the potential participants changed their mind during the process and withdrew from participation. Because a screening took place to select the more suitable participants for the interview, the sampling technique actually used is more akin to a purposive sampling (Palys, 1997) or judgmental sampling (Charles and Mertler, 2002).

The reason that older and more experienced teachers were preferred for the interviews was because younger and less experienced teachers may not have sufficient experience working with e-learning or generally sufficient experience dealing with problems their students encountered in their learning. Additionally, older teachers were assumed to have a better appreciation of the potential difficulties that an older learner might have. Furthermore, an attempt was made to ensure that the teachers interviewed were a suitable balance of part-time and full-time teachers as they may have different perspectives on the utilization of e-learning in their teaching.

As it turned out, even with an open invitation to all teachers, only a small number responded to the invitations indicating their interest in participating in an individual interview. Furthermore, after screening on the basis of experience with e-learning and subsequent contact with potential participants to explain the process and time commitment requirements, many potential interviewees changed their mind. Owing to insufficient volunteers, I had to approach teachers that I knew were experienced users of e-learning in their teaching. Therefore, sampling for the additional teachers is also by purposive sampling. Due to the limitation of time and availability of suitable volunteers, only four interviews of the older teachers with sufficient experience in e-learning were successfully carried out.

b. Validity of sampling of interview participants

As participants for interviews were initially selected from among the volunteers and then supplemented with direct invitation through personal contacts, limitations of this purposive sampling method are recognized. Relying on volunteers and direct invitation has the possibility of introducing a 'Volunteer Bias' (Palys, 1997) as people who volunteer or were directly approached are often different from those who are not. There are therefore inherent problems of generalizing the results from a sample consisting of volunteer participants to represent the whole population (Charles and Mertler, 2002). However, since the main thrust of this study was to investigate barriers to e-learning diffusion, the nature of difference of the volunteer group, which is their interest in and experience with e-learning, would not seem to introduce serious bias. On the one hand, teachers who are proven practitioners of e-learning would be in a stronger position to inform on the actual problems they encountered, which can lead to certain evidence of barriers to diffusion of e-learning. On the other hand,

interviewing teachers who are not interested in e-learning (assuming it is feasible to obtain interviews) would unlikely generate sufficient discussion, grounded on real experience with e-learning, on the subject for analysis.

Owing to the small number of teachers participating in the interviews, and the belief that the average teacher might not have a full appreciation of the potential or limitations of e-learning, views and opinions from experts in e-learning could broaden our understanding of the potential barriers to e-learning diffusion in Hong Kong. Not only are these teacher-researchers proven active practitioners of e-learning in their teaching, but also their research interests and work in e-learning would clearly help them form a more balanced and penetrating view of the overall situation of e-learning in Hong Kong. For example, their views are less likely to be constrained by specific shortcomings in the e-learning platform of their own institutions than those teachers whose experience with e-learning might be limited to one institution and one e-learning platform.

For this reason, a number of teacher-researchers from three local tertiary educational institutions who are known to be active researchers in e-learning were approached for an individual interview to discuss the issues that this enquiry aimed to explore. Again, owing to the limitations of time and availability of participants, only five teacher-researchers from CLL and two local universities were successfully interviewed.

c. Organization of interviews

A schedule of the in-depth interviews and dates of approval of the transcripts appears in **Appendix D**. Prior to conducting the interviews, all participants were provided

with a copy of the following documents for their perusal and consideration:

- Statement of proposed research aims and data generation (**Appendix E**)
- Participant consent form (**Appendix F**)
- Information for prospective participants (**Appendix G**)

After agreeing to participate, a time and venue for the interview were fixed through either email or telephone. To adhere strictly to the ethical guidelines of the University of Nottingham, participants were particularly reminded of the following:

- The purpose and background of research
- That an audio recording will be made during the interview to help in writing up the transcript
- The confidentiality of identity of the participants would be maintained
- That participants were free to withdraw from the interview at any time

At the beginning of each interview, I politely asked the participant again for permission to record it. Each participant was asked to sign the Participant Consent Form (**Appendix F**) to give formal permission to proceed with the interview and to quote him or her in the final research report.

All who participated in the in-depth interviews were encouraged to express their views freely with both the structured and unstructured components. The structured component consisted of a set of four prepared open questions sent to the participants prior to the actual interviews. These questions represented the four main issues that the research project aimed to explore with the interview participants. I asked the participants to reflect on and to relate to their own learning experience when commenting on these four issues. The four open-ended questions were:

- What are the benefits and impact of e-learning that you expect?
- What is your practice of utilizing e-learning tools in your teaching?
- What do you see are the main barriers to greater adoption of e-learning?
- Do you see a language barrier for learners living in Hong Kong with Chinese being their mother tongue and using English as the medium of learning? Do you see an age barrier?

In addition to the prepared questions, I also raised further questions with the participants to probe deeper into the subjects or to seek clarifications from them on their answers to those four open questions.

The perceived benefits tended to be similar to those discussed in the literature of adult education, especially those benefits more closely related to learners. On impact of e-learning and barriers to greater diffusion, however, the literature tended to cover cases mostly reported from a western cultural context. For this reason, I also raised certain follow-up questions designed to address the special socio-cultural context of Hong Kong relevant to the learners in Hong Kong with the interviewees.

Analysis of data collected from the in-depth interviews

At the conclusion of the interview phase and with the completion of the nine interview transcripts, a content analysis with a focus on conceptual analysis (Carley, 1994) was conducted to detect major themes and subthemes raised in the interviews. The purpose of the data analysis for this stage is to enhance understanding of the views of the more experienced teachers (the teacher-researchers) regarding e-learning benefits, impact and barriers to e-learning diffusion. Therefore, the main task for data analysis of this part is to draw out meaning from the transcripts of the interviews through the identification of common themes or subthemes. The method of analysis

employed is an iterative process that involves searching for patterns, regularities in the data, and similarities and differences of themes by performing coding and re-coding (stepwise refinement of coding) of such similarities and patterns. The coding and re-coding of interview scripts is guided by the strategies promulgated by Miles & Huberman (1994), Creswell (2009) and Glaser (1992) with evolving themes and subthemes identified (Creswell called it the Data Analysis Spiral). More details about the actual process will be presented in ***Chapter Six, Presentation of Findings and Discussion – In-depth Interviews and the Follow-up Questionnaire Survey.***

The conceptual analysis was limited to the following 3 conditions:

- Concepts relating to views expressed in response to the three main research issues of **Benefits** and **Impact** of e-learning, and **Barriers** to e-learning diffusion in Hong Kong
- Coding for existence of concepts only (frequency of occurrence will be determined through the follow-up questionnaire survey as explained in a later section)
- Coding through the building of a table of themes and subthemes with words of similar meaning. The development of the table involved a process of reduction and combination of initial coding and stepwise refinement.

After the process of conceptual analysis, these concepts provided by the participants in the form of responses and comments in respect of each of the research issues were then crystallized into 10 themes and 12 sub-themes. These themes and sub-themes together evolved into a simple framework for further enquiry in the form of a follow-up survey as a follow-up questionnaire survey.

2.5 Organization and process of Stage Three - the Follow-up questionnaire survey to the interviews

The difficulty of asking opinions of a group of people on a certain subject is that they are likely to express diverse and possibly conflicting views. The results of diverse opinion would be difficult to compare with those views expressed by the learners. In our context, the teachers and the e-learning designers and planners may be regarded as 'experts' on the subject — of how e-learning has benefited the learners and the barriers to diffusion — and their opinions may be regarded as expert opinions. In order to investigate the extent of consensus among the experts on their expressed views in relation to the research issues, a follow-up questionnaire survey was added to the method of enquiry.

The follow-up questionnaire survey is intended to be a process to arrive at a group consensus whereby the group members were provided with the a list of the key ideas (the themes and subthemes) that emerged from the conceptual analysis of the interview scripts, and were asked to indicate their agreements, disagreements, and comments, if any, with respect to each of the ideas. The purpose of this process was to find out to what extent there was convergence of opinions. The adopted process may seem to bear some resemblance to the early stages of a traditional Delphi process (Loughlin 1977; Parker & Taylor 1980) but is actually different in two major aspects:

- There were no face-to-face meetings among the panel members
- There were no iterations in the process.

The design of the follow-up questionnaire survey has to take into consideration some practical issues and limitations.

a. Need to expand the panel of experts with additional teacher-researchers

The follow-up questionnaire survey employed in the study was applied to the interview participants first and then to an expanded panel of additional experts. As explained in ***Chapter Two - Context of Enquiry***, the Hong Kong academic community is not large. A panel consisting of five experts in the field of e-learning from three institutions together with four teachers from CLL would seem not too small a sample for contributing ideas towards building a comprehensive set of views on current state of play of e-learning in Hong Kong. However, whether such views are strongly representative of the larger academic community in the field of e-learning could be challenged. Therefore the reliability of these views would benefit from confirmation or otherwise by a greater number of teacher-researchers from more institutions.

To address these problems, the follow-up questionnaire survey was conducted in two parts; first with the original nine interview participants, and second with an expanded panel of teacher-researchers. The rationale behind this expansion of the panel of experts is that whilst not a great number of academics could be interviewed, the validity of the observations generated from the nine interviews would be greatly enhanced by seeking confirmation of the observations with an expanded panel of teacher-researchers. As obtaining permission for an interview that lasts over one hour from a large number of busy academics with expertise in the field of e-learning is not really feasible, an alternative approach is to do it through a structured survey – thus the follow-up questionnaire survey.

The main purpose enlisting the help of 12 additional teacher-researchers in the enquiry was to enhance the quality of results of the process by:

- broadening the representativeness of views or advice from more teacher-researchers from tertiary educational institutions other than the original three; and
- adding triangulation of results obtained from the five experts who participated in the interviews

b. Sampling of experts for the expanded panel

The sampling of experts for the expanded panel was also by purposive sampling with a snowball sample (Palys, 1997). There were three main channels to source active researchers in the fields of e-learning, blended learning, web-based learning, and IT in education from local universities.

- through my own professional and academic activities such as attendance at international and local conferences on e-learning
- through searching official web sites of local universities
- through introduction by experts already participating in the survey

Invitations (sometimes in conjunction with separate emails of introduction by other experts) were then sent to those identified experts inviting them to participate in the questionnaire survey. The questionnaire used to survey the original panel of interview participants was also used for surveying the expanded panel. The results of the surveys of the two panels were then combined and considered as survey results from one single panel of 21 experts for the purpose of analysis and making inferences in relation to the main research question.

c. Rationale for using a follow-up questionnaire survey without face-to-face discussions among the experts

In general, the reasons for choosing a follow-up questionnaire survey without the face-to-face discussions are as follows:

- There is a practical difficulty of arranging a meeting time for a large panel of busy teacher-researchers. Reducing the need to meet in a formal meeting makes a test of consensus among the large panel feasible.

- Some participants may be reluctant to express their opinion in an open meeting. As each teacher-researcher has a different sphere of information about the subject matter, a process of considering or debating a collective view on the subject matter in an open forum may inhibit the less articulate observers from participating fully for fear of 'losing face'.

- The issue at hand is complex that requires more time to consider opinions expressed by others or to reference relevant data, in order to produce a more thoughtful and reflective response. A questionnaire was used to allow participants more time to consider their responses.

In summary, the adopted questionnaire survey is considered particularly appropriate for this enquiry because, as there are so many observable aspects related to the benefits, impact and barriers of e-learning, a questionnaire survey can stimulate new ideas and, through open comments contributed by the participants, fill 'gaps' in the data collected through the interviews. As a result, this enhances the chance of arriving at a more complete and representative view on a complex subject such as e-learning.

d. The Process of the follow-up questionnaire survey

The follow-up questionnaire survey of enquiry employed in this study took place in two steps following the in-depth interviews, namely:

Step 1: Survey of the original panel (those participated in the in-depth interviews)

The transcripts of the interviews were analyzed and summarized, through a conceptual analysis, first into a framework for analysis and then broken down into a list of statements expressing certain concrete opinions on the benefits, impact, and barriers facing e-learning. These statement or views generated from the transcripts of the interviews were then converted into the form of a questionnaire. For this part of the data analysis, the focus is on detecting the existence of certain views or opinions relating to the research questions. Although frequency counts of the presence of such views were also recorded in formulating the framework, the formulation of the list of statements is based merely on the presence of such views, irrespective of how high or low the frequencies are. The reason is to ensure that all participants in the follow-up questionnaire survey will have a chance to respond, either positively or negatively, to all the views collected from the in-depth interviews. Participants for this stage (the original panel) were the same participants in the in-depth interviews. They are provided with relevant briefing documents and the questionnaire.

For each question, the panelists were to indicate on a 5-point Likert scale how strongly they felt about the absence of such a service as well as any open comments or remarks in support of their opinions concerning each question. The degree of desirability using a five point scale means a '5' was the most desirable or strongest feeling of agreement and a '1' was the least desirable or strongest feeling of disagreement.

Step 2: Extension of the panel for the follow-up questionnaire survey

The above-follow-up questionnaire survey was then extended to 12 more teacher-researchers (the expanded panel). Results of this stage were then combined with results of the previous stage. In other words, the combined panel of experts consisted of 21 participants.

These three stages were closely interlinked; each built upon and expanded the results obtained from the previous stage which, when considered together, led to certain conclusions for this study. All interaction with the panelists for stage two and three were through emails and occasional telephone calls.

e. Analysis

The compilation of the responses included tabulations by the original panel (the nine interview participants) and by overall aggregate (the combined panel). The separate tabulations by the original panel and the combined panel was an attempt to identify whether there were differences between the two panels in terms of evidence of convergence of views. Panelists of the original group had the benefit of long discussions with me in an individual interview prior to the survey; whereas, the expanded panel members did not.

Given the small sample size, data analysis of this combined set of data is limited to simple descriptive statistics of frequency counts on ordinal data provided by the informants (the teacher-researchers) on a scale such as "Strongly agreed, Agreed, Neutral, Disagreed, Strongly Disagreed". (Fink, 1995)

2.6 Potential issues with the proposed methodology

There are several potential issues in the proposed follow-up questionnaire survey that may be of concerns in terms of its suitability for the intended enquiry, namely:

- Anonymity
- Briefing documents
- Design of the survey instrument
- Validity of the survey questionnaire
- Reliability of the follow-up questionnaire survey
- Ethical issues

a. Anonymity

Anonymity is a crucial condition in the successful conduct of any academic enquiry. Respondents should be free to give candid opinions without fear. The use of a questionnaire survey avoids the danger of easily 'giving in' to views of the dominant players in an open face-to-face focus group meeting. This is especially relevant in the context of this enquiry as the panel included senior academics, deans, heads of e-learning units, experts, as well as average teachers. Furthermore, there is no danger of having the more outspoken members of the group dominate the deliberation. A difficult question relating to anonymity would be — how valid is the consensus if no direct interaction among the panelists is permitted as the panel 'formulates' its opinion?

There are arguments on both sides of the fence. Interactions may help to clarify ideas and reduce misunderstanding, especially those given as comments to the statements. However, interactions may also produce undesirable side effects as mentioned above in respect of face-to-face meetings. Certain degrees of independent thinking of some panelist may be compromised.

One apparent advantage of this characteristic of anonymity is that conflicts of opinion need not be addressed, as the majority view will be taken statistically. Conflicts can lead to hard feelings if disagreement is personalized, which is why the feeling of rejection is not nearly as strong when one's identity is not known and individual opinions are solicited separately.

b. Briefing Documents

Briefing Documents are simply documents that give necessary background information concerning the research study. Should additional materials about the impact and benefits have been provided to the panel before the process starts?

There are pros and cons to providing more information. Could more information result in undue influence or even bias the views of the panelists? A careful examination of the purpose of any additional information is obviously necessary.

For this study, the briefing document was combined with the survey questionnaire in the form of an introduction and explanatory notes to the survey

c. Design of the survey instrument

Design of the questions in the questionnaire in order to allow the best individual judgment possible is a crucial part of the follow-up questionnaire survey. For this study, completely open-ended questions were avoided, although at the end of each section of questions, the participants were encouraged to provide additional comments. Indeed, some of the participants did provide insightful comments to enrich their

answers to the structured questions. The reason for avoiding completely open-ended questions is that whilst they would have the least hindrance to panelists in freely expressing their ideas, compilation and analysis of their input would be difficult to handle. The adoption of a mixed method approach of data collection and analysis for this study; that is, combining in-depth interviews with a follow-up questionnaire survey, is intended to address this dilemma. In addition, there is the practical difficulty to the panelists as answering open questions might be too time-consuming to them, which could in turn seriously affect the survey response rate. For these reasons, the survey questionnaire was structured by pooling the key ideas from the interview transcripts with invitations to the participants to provide open comments to supplement the structured questions.

d. **Validity of the survey questionnaire**

Content validity check of the survey questionnaire was crucially important to this study. The validity check was done by including a pre-testing of the questionnaire.

The advantages of a pre-testing are fourfold:

- To verify that the questionnaire was appropriate and the questions were indeed seeking answers that were highly relevant to the overall research aim and puzzle.
- To clarify ambiguity in wordings so that the respondents were clear about the questions and the context of answers sought,
- To exclude leading questions or questions with in-built bias that might influence the respondents to answer in a biased way.
- To ensure that the length of the questionnaire was reasonable so that it could be completed in reasonable time.

The draft questionnaire used in the follow-up questionnaire survey was reviewed and commented upon by two of the original panel members. One question arises was whether the same participants should be involved both in the pre-test and the actual conduct of the surveys to avoid possible over-sensitization (practice effects) to the issues involved, thus affecting the internal validity of the surveys. However, as the purpose of pre-testing was to improve the design of the instruments it seems on balance it would be more advantageous to involve participants rather than someone unfamiliar with the purpose of the study and the subject matter in the pre-test.

e. Reliability of the follow-up questionnaire survey

How reliable is the adopted follow-up questionnaire survey? It is impractical to replicate the follow-up questionnaire survey by asking the same questions to the same panel again as the experts are busy people who could not commit so much time for a prolonged process. However, given the respondents are experts in the field of e-learning, their understanding of the issues raised in the questionnaire would be quite clear and their position on those issues would probably be owned for a more substantial period of time than an average person, and would not be easily swayed without hard evidence based on research work of other experts.

f. Ethical issues

The organization and conduct of the online surveys and the in-depth interviews all strictly adhered to the ethical standards of the University of Nottingham. The approved Statement of Research Ethics is shown in **Appendix H**.

The invitation to participate was in the form of an announcement under my name as the researcher and my official position. The invitation was worded in strict adherence of the ethical guidelines of the University of Nottingham, which explained the purpose

of the survey and promised confidentiality of data collected. Interested respondents (teachers) were also invited to participate in a follow-up in-depth face-to-face interview. Additionally, in order to boost response rate for the 2007 survey, the Principal of the Community College sent out a special letter of introduction via the School email system to encourage students and teachers to respond to the survey. Sample invitations and questionnaires of the three surveys for teachers and students are presented in **Appendices A** and **B** respectively.

For the in-depth interview, as only a small number of the teachers with substantial experience in e-learning responded to the invitation attached to the online survey, additional teachers and teacher-researchers were invited to participate based on personal knowledge about them or introduction by other experts. As explained in the section on sampling, these informants were selected based on their expertise in e-learning. Their willingness to spend time for the interviews was unavoidably influenced to some extent by personal friendship and professional association. However, there is no reason to believe such friendship influenced their expression of views on e-learning in any way as they were encouraged to give an open and complete view on the subject and their confidentiality was assured before the interviews.

Regarding the expanded panel, most of the participants were invited through introductions or by reputation. Their willingness to participate in the follow-up questionnaire survey was largely due to professional courtesy. Therefore, their expression of views was totally free and without constraints.

All participants in the interviews were provided with a copy of the Information for prospective participants (**Appendix G**), which explained the confidentiality requirements of Nottingham and their right to withdraw from the interview at any time. Participants in the subsequent follow-up questionnaire survey were also assured confidentiality of their participation through the invitation emails.

3 Summary

In summary, this chapter outlined the epistemological position and the research methodology of this study. From a postpositivist paradigm, the research embarked on

a journey that followed the mixed method tradition guided by the Grounded Theory approach. In other words, each sequential stage of data collection is led by the results of the previous stage.

It is argued that the methods employed in this enquiry, in particular the third stage follow-up questionnaire survey, are suitable and necessary to obtain a 'collective' response from the panel of teacher-researchers in answer to the research question. Conducting a questionnaire survey without an additional group discussion as employed in the enquiry was necessary and pragmatic because it was found quite difficult to obtain interviews with the experts, let alone to obtain consent to meet as a group perhaps more than once and requiring considerable time to arrive at a consensus on the 101 ideas raised in the nine interviews. It was impractical to arrange an optional lengthy meeting for 21 busy teachers and teacher-researchers. Excluding the discussion phase also has the advantage of avoiding the meetings being unduly influenced by one or two dominant figures, thus creating a false impression of consensus. In this case, the use of a questionnaire survey gave the experts complete freedom without outside influence to indicate what they truly believed in relation to the 101 questions on e-learning.

The next two chapters will present the findings from analysis of the data collected from the Web surveys, the in-depth interviews and the follow-up questionnaire survey.

Chapter Five

Presentation of Findings and Discussion – Web Surveys

Overview

As outlined in previous chapters, there are three main data sources for this enquiry. They are:

1. Publicly available data and announcements on government policies published by the Government of Hong Kong and also by well-known international agencies. These data, largely in the form of statistics, provided some insights into Hong Kong's social, economic, technological and educational environment. Most of them were referenced in Chapter One to introduce the issues concerned, and in Chapter Two to explain the context of this enquiry into e-learning penetration at the tertiary education level in Hong Kong.

2. Results of a series of surveys conducted online from December 2005 to February 2009 mainly to students and teachers of the College of Lifelong Learning (CLL). Data from these surveys are being presented in this Chapter.

3. Results of in-depth interviews with a group of experienced teachers and teacher-researchers (experts in e-learning) from three educational institutions in Hong Kong, and a follow-up survey (the follow-up questionnaire survey) of all interview participants on a summary of the views expressed in the interviews. Additional teacher-researchers in the field were invited to participate in the follow-up survey to strengthen the claim of a collective view on the subject by local experts on e-learning in Hong Kong. Data collected from these in-depth interviews and the subsequent survey of the follow-up questionnaire survey are presented and analyzed in the next chapter.

Ethical Guidelines

It should be emphasized as a preamble that the organization and conduct of the online surveys and the in-depth interviews were all in strict adherence to the ethical standards

of the University of Nottingham encapsulated in the Approved Statement of Research Ethics shown in **Appendix H**.

Organization of the Web surveys

Details about the organization and process of the Web surveys are presented in **Chapter Four, Methodology and Methods**. To recap briefly, online surveys targeting learners and teachers of CLL were conducted through the College's Web site in three separate exercises over a period of 40 months.

The main reason for the somewhat long span of data collection through web surveys was a shift of principal focus of the research project in 2008. This research project originally set out to enquire into the impact of old age on learners engaged in e-learning. However, the results from surveys conducted in 2005 and also in 2007 both revealed that in the minds of both the teachers and the learners, old age was not a handicap in e-learning, at least not at the tertiary education level. They did not see age would make much of a difference in e-learning in higher education either positively or negatively. As a result, the original focus of potential benefits and impact on older learners appeared to be a non-issue.

In addition, there was also the practical problem of finding willing older learners of age 50 and above who had sufficient experience with e-learning at the tertiary education level [e.g. have non-trivial use of online discussion] to participate in the surveys or in-depth interviews. Results of the 2005 and 2007 surveys together with the unavailability of suitable informants led to a change of the focus of this research project to an enquiry of the general benefits, impact and potential barriers to diffusion of e-learning in Hong Kong. Consequently, significant modifications to the questionnaire design of the third round of Web surveys had to be made. However, the issue of e-learning at an older age remained one of the related issues in the in-depth interviews and the follow-up survey with the teachers and teacher-researchers.

The basic statistics of the online student surveys (including survey dates, numbers of target participants, age distribution, mode of study and response rates) are listed in Table 5.1a below:

Learner surveys

Survey	L2005	L2007	L2009
Survey year	2005	2007	2009
Survey period	Nov 19, 2005 – Dec 2, 2006.	Dec 21, 2006 – Feb 21, 2007	Jan 20, 2009 – Feb 22, 2009
Invitations sent to target participants	5,598	25,449	22,227
Valid returns	779	2,072	2,051
Response rate	13.9%	8.1%	9.2%
Full-time students	779 (100%)	841 (41%)	990 (48%)
Part-time students	N/A (note 1)	1,231 (59%)	1,061 (53%)
Age 24 and below (FT students)	772 (99%)	817 (97%)	N/A (note 2)
Age 25-49 (FT students)	6 (1%)	22 (3%)	N/A (note 2)
Age 50 & above (FT students)	1 (0.13%)	2 (0.24%)	N/A (note 2)
Age 50 & above (PT students)	N/A (note 1)	21 (1.71%)	N/A (note 2)

Table 5.1a: Statistics on Learner Surveys held in Years 2005, 2007 and 2009

Notes: [1] only full-time students were surveyed in 2005-06 survey.

[2] Age information was not available in the 2009 survey.

The basic statistics of the online teacher surveys (including survey dates, numbers of target participants, age distribution and response rates) are listed in Table 5.1b below:

Teacher surveys

Survey	T2005	T2007	T2009
Survey year	2005	2007	2009
Survey period	Dec 9, 2005- Jan 16, 2006	Dec 21, 2006 – Feb 21, 2007	Jan 20, 2009 – Feb 22, 2009
Invitations sent to target participants	185	666	538
Valid returns	96	85	78
Response rate	51.9%	12.8%	14.5%
Age 50 & above	3%	19%	27%

Table 5.1b: Statistics on Teacher Surveys held in Years 2005, 2007 and 2009

Method of analysis of web survey data

Given the large volume of data involved, data analysis of web survey results are presented in ordinal data tables. There are two types of data. Most of the questions are provided with 5 categories of answers (which include a "*neutral*" or *"no opinion*" category) but there are some with 4 categories. Descriptive statistics of frequency counting on data provided by the informants (the teachers and their students) therefore are converted to either a 5-point Likert scale or a 4-point scale respectively. (Fink, 1995)

The 5-point Likert scale (including a "*neutral*" or *"no opinion*" category) is:

Strongly agree	5
Agree	4
No opinion/Neutral	3
Disagree	2
Strongly disagree	1

The 4-point Likert scale is:

Very Frequently	4
Regularly	3
Occasionally	2
Very Rarely	1

After conversion of the individual scores, an arithmetic mean was then calculated for each survey question under each category. Standard deviations were also calculated to obtain a measure of dispersion of the scores. These scores were then mapped into the five categories as indications of the informants' acceptance of the stated concepts or views about e-learning for a 5-point scale (***Table 5.2a***) or a 4-point scale (***Table 5.2b***) as the case may be.

Category	**Range of arithmetic mean of scores**	% of possible values
Positive (Strongly Agreed)	**4.0 – 5.0**	27%
Marginally Positive (Agreed)	**3.4 – 3.9**	15%
Neutral (No Opinion)	**2.7 – 3.3**	16%
Marginally Negative (Disagreed)	**2.1 – 2.6**	15%
Negative (Strongly Disagreed)	**1.0 – 2.0**	27%

Table 5.2a Categories of views expressed by web survey informants on a 5-point Likert Scale

Category	**Range of arithmetic mean of scores**	% of possible values (approx.)
Very Frequently	**3.5 – 4.0**	**20%**
Regularly	**2.5 - 3.4**	**30%**
Occasionally	**1.6 - 2.4**	**30%**
Very Rarely	**1.0 - 1.5**	**20%**

Table 5.2b Categories of views expressed by web survey informants on a 4-point Likert Scale

Results of Web surveys

The Web survey questionnaires solicited information concerning four major aspects in e-learning: namely, attitude, practice, experience, and barriers.

1. **Attitude:** expectation of benefits and impact of e-learning
2. **Practice:** actual utilization of e-learning
3. **Experience**: benefits and difficulties experienced in utilizing e-learning
4. **Barriers**: barriers perceived to greater adoption of e-learning

The survey questions were therefore mainly structured to seek respondents' views on these four issues. As the surveys were also intended to provide useful data from the users about CLL's in-house e-learning platform and support services for the improvement of both system and services, questions relating specifically to the suitability of the in-house e-learning platform, called SLMS, and the adequacy of the support services were incorporated into the questionnaires. The results relating to these questions were excluded from the analysis of the current study, however, since these issues were outside of the scope of the research.

It should be pointed out that although the web survey questionnaires were designed by me and conducted with my invitation for participation as the researcher for the project, ownership of data rests with the CLL and is shared with internal units of the institution for operational analysis, internal reporting, and also academic research because the survey data generated from the three rounds of surveys were obtained through the official channels of CLL using the institution's resources. In addition to internal operational reports of CLL in reviewing the suitability of SLMS and the adequacy of support services, some research reports with different focuses (e.g. on user acceptance of the in-house e-learning platform, and the commonality and difference of practice of e-learning by full-time and part-time students) were published by other staff members [e.g. Lam and Cheung, (2008) and Lam et al., (2009)]. Therefore, similar observations relating to the side issues of e-learning, but not to the main focus of this study, were also covered in those reports. Referencing to their work in this thesis will be limited only to those points specifically relating to the main research question.

In addition, some extra questions were added to triangulate the answers by asking differently worded questions on the same topic. Attempts were also made in the 2007 survey to ascertain whether the age of teachers and mode of attendance of students had any bearing on their views on e-learning.

The CLL has made a great commitment to adopting e-learning. Not only has it invested heavily in developing its own in-house e-learning LMS — SLMS — but it also maintains a team of software engineers for the continuous support of users and the improvement of the LMS. SLMS was modeled after popular, commercially-available, e-learning LMSs and therefore has features similar to a typical e-learning management system equipped with the most common e-learning tools such as online discussion forum, course content in electronic form, links to external learning materials, and tracking of attempts of self-evaluation.

The CLL also established a Centre for Cyber Learning in 2009 to coordinate and to support the development of e-learning courses. The mission of the Centre is fourfold.

- Redevelopment of the SLMS to provide new and more sophisticated functions to meet the users' needs and expectations.
- E-course development as examples of good practice of e-learning.
- Provision of training on e-learning to teachers, and
- Development of quality assurance measures for e-learning.

In this connection, it should be noted that as the above mentioned online surveys, and for some of the participants the follow-up in-depth interviews, were conducted based on the direct experience with e-learning of teachers and students of the CLL through this particular in-house LMS, their answers were unavoidably closely related to functionalities available in the in-house learning management system environment at that time. In other words, some of their experience may be seen as parochial and may not be generalized for a wider context.

The more recent developments of e-learning are based on Web 2.0 concepts that aim at facilitating interactive information sharing and collaboration without a traditional LMS. Had the e-learning systems environment in the CLL been based on Web 2.0 concepts, e-learning as experienced by the same groups of teachers and students could have been significantly different.

Summaries and analysis of the data collected are presented under these four headings of Attitude, Practice, Experience, and Barriers.

1. Attitude: expectation of benefits and impact of e-learning

Teacher's view

In each of the three surveys, the teachers were asked to state what they believed were the benefits of e-learning. Replies given by the teachers were first presented in percentage form, as in Table 5.3a, and then converted into ordinal data on a 5-point Likert Scale, and then the arithmetic means of the values were calculated for each question. The interpretation of these answers was arrived at by mapping the values onto the 5 points corresponding to the 5 categories of "Strongly Agreed", "Agreed", "Neutral", Disagreed" and "Strongly Disagreed" as shown in Table 5.3b. The standard deviation for each mean value was also calculated to show the degree of dispersion.

Expected benefits and impact of e-learning to my students – Teachers' view

Table 5.3a: Statistics of Teachers' View on Expected Benefits and Impact of e-Learning to Students based on Teachers Survey in 2005, 2007 & 2009

Survey	T2005				T2007				T2009			
Invitations sent	185				666				538			
Sample size	96				85				78			
Response rate	51.9%				12.8%				14.5%			
Category	Strongly Disagree	Disagree	Agree	Strongly Agree	Strongly Disagree	Disagree	Agree	Strongly Agree	Strongly Disagree	Disagree	Agree	Strongly Agree
1) e-learning made learning more interesting	7%	15%	19%	5%	12%	13%	22%	6%	4%	13%	29%	8%
2) made learning easier	7%	14%	30%	11%	8%	16%	39%	6%				
3) helped learners to learn at their own pace	5%	12%	41%	11%	6%	13%	47%	12%				
4) created more incentives for learners to study	9%	26%	18%	5%	12%	25%	20%	5%				
5) is more personalized for learners	8%	12%	35%	14%	6%	15%	36%	11%	3%	12%	39%	10%
6) e-learning is not as good as traditional face-to-face learning for the learners	4%	7%	28%	22%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7) e-learning is better than traditional face-to-face learning for the learners	23%	43%	3%	1%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
8) fostered students' personal responsibility for learning	n/a	n/a	n/a	n/a	8%	27%	27%	4%	n/a	n/a	n/a	n/a
9) provided more feedback opportunities	n/a	n/a	n/a	n/a	6%	19%	42%	7%	n/a	n/a	n/a	n/a
10) promoted greater participation and interaction	n/a	n/a	n/a	n/a	7%	24%	27%	6%	1%	9%	44%	17%
11) (students) were encouraged to seek additional resources/reference materials online	n/a	n/a	n/a	n/a	6%	8%	49%	16%	1%	1%	42%	45%
12) helped students outside classroom	n/a	n/a	n/a	n/a	5%	7%	45%	18%	n/a	n/a	n/a	n/a
13) Helped students to work together as a group	n/a	n/a	n/a	n/a	8%	24%	20%	7%	n/a	n/a	n/a	n/a
14) helped teachers to be more successful/ enhanced my teaching	n/a	n/a	n/a	n/a	5%	18%	31%	9%	1%	9%	49%	13%

(percentage figures may not add up to 100% as neutral positions are not shown)

After converting the original data into a 5–point Likert scale, the scores for each question over the 3 rounds of web surveys are as shown in Table 5.3 b below.

Survey	T2005	T2007	T2009
Invitations sent	185	666	538
Sample size	96	85	78
Response rate	51.90%	12.80%	14.50%
Category			
1) e-learning made learning more interesting	3.0	2.6	2.6
2) made learning easier	3.2	2.8	n/a
3) helped learners to learn at their own pace	3.4	3.1	n/a
4) created more incentives for learners to study	2.8	2.5	n/a
5) is more personalized for learners	3.4	2.9	2.8
6) e-learning is not as good as traditional face-to-face learning for the learners	3.6	n/a	n/a
7) e-learning is better than traditional face-to-face learning for the learners	2.2	n/a	n/a
8) fostered students' personal responsibility for learning	n/a	2.6	n/a
9) provided more feedback opportunities	n/a	2.9	n/a
10) promoted greater participation and interaction	n/a	2.7	3.0
11) (students) were encouraged to seek additional resources/reference materials online	n/a	3.2	3.5
12) helped students outside classroom	n/a	3.2	n/a
13) Helped students to work together as a group	n/a	2.6	n/a
14) helped teachers to be more successful/ enhanced my teaching	n/a	2.8	3.0

Table 5.3b Arithmetic mean of statistics of Teachers' View on Expected Benefits and Impact of e-Learning to Students based on Teachers Survey in 2005, 2007 & 2009

In summary, the teachers were marginally positive towards e-learning but expected e-learning to benefit teaching and learning only in some of the aspects suggested in the questionnaire. These suggested benefits were generally consistent with those identified in the literature on e-learning.

They **agreed** that e-learning:	**Score**
11). encourages learners to seek additional resources or materials online	3.2 - 3.5
3). helps learners to learn at their own pace	3.1 - 3.4
5). is more personalized for learners	2.8 - 3.4

They were somewhat **neutral** on e-learning:	
2). makes learners' learning easier	2.8 - 3.2
12). helps learners to work outside classroom	3.2
14). helps teachers be more successful/ enhance teaching	2.8 - 3.0
10). promotes greater participation and interaction	2.7 - 3.0
9). provides more feedback opportunities	2.9
1). makes learning more interesting	2.6 - 3.0

They **disagreed** to the notions that e-learning:	
4). creates more incentives for learners to learn	2.5 - 2.8
13). helps learners to work together as a group	2.6
8). fosters learners' personal responsibility for learning	2.6

However, the teachers definitely **agreed** that e-learning:	
6). is not as good as traditional face-to-face learning	3.6

Their position is further verified with their **strong disagreement** to the opposite statement that e-learning "*is better than face-to-face learning*" (mean score of 2.2)

It is possible that the teachers did not expect some of the listed benefits in their teaching due to the limitations of the course design. That is, e-learning was not fully implemented in their curriculum; for example, no provision for online discussions with students or assignments that required group work. It is also possible that the teachers were not aware of the full benefits of e-learning. They may have a somewhat inaccurate understanding of what e-learning entails. Worse yet, they may have mistaken e-learning as only technological 'gimmicks'. The fact that the teachers failed to recognize some of the key benefits reported in the literature cast some doubt on their appreciation of the true potential of e-learning, and therefore their ability to provide insightful answers to the main focus of enquiry was limited; that is, what are the barriers to the diffusion of e-learning in HK. It would therefore be necessary for further comparison and verification, to examine whether the teachers had substantial prior experience with e-learning gained in their own student days; how they had actually practiced and experienced e-learning.

Impact of e-learning and open comments

Among the questions, only question # 6, *"e-learning is not as good as traditional face-to-face learning for the learners"*, can be regarded as a negative question, intended to explore whether despite any benefits expected by the survey respondents, such benefits were sufficient to convince them that e-learning was at least as good as traditional face-to-face learning. There were no additional questions on specific negative impacts of e-learning because the researcher intended to give the survey respondents as little prompting as possible on this particular aspect since negative impacts of e-learning — particularly in the context of Hong Kong — are rarely mentioned in the literature. However, the survey respondents were encouraged to provide open comments. From the open comments received, the majority of negative comments were related either to the inadequacies of the in-house e-learning platform or the attitude or readiness (or lack of readiness) of the teachers. The more frequently mentioned areas of negative impact of e-learning in the open comments included:

- System related: lack of user friendliness, poor interface, systems reliability, lack of functionality, not as good as other search engines (such as Yahoo, Google), poor security.

- Teacher attitude and readiness related: lack of training or experience with e-learning, not familiar with the in-house e-learning platform, lack of motivation, not enthusiastic about e-learning, spent little time participating in online discussions with students, did not put notes or additional learning materials online.

- Support system related: inadequate administrative support, inadequate technical support, inadequate maintenance of course contents, not enough administrative functions online.

- Online interactions related: widened distance between students; not as good as other social web sites such as Facebook, YouTube, BT; students did not make use of chat room,

- Others: insufficient online learning materials or links, e-library too limited, did not raise my interest in learning.

Clearly a structured questionnaire survey has limitations such as sentence length and wording ambiguity. For this reason, another source of data, namely in-depth interviews were conducted to supplement and complement findings from the questionnaire surveys. However, it must be emphasized that the results obtained from the web surveys, including the open comments provided by the survey respondents did contribute significantly to the formulation of questions for discussions during the interviews. This is especially so with respect to the area of perceived negative impacts of e-learning.

2. **Practice: actual utilization of e-learning**

In the previous set of questions, teachers and learners were asked about their expectation of benefits and impact of e-learning. The second set of questions in the surveys was then designed to find out their actual practice of utilizing e-learning in terms of how frequently each of the main tools of e-learning was utilized. The teachers and learners could choose one of four answers (Very rarely, Occasionally, Regularly, or Very Frequently).

Practice by teachers

In the teacher survey, the teachers were asked to state how often they made use of the tools in the in-house e-learning platform to perform the following functions:

- access course materials online
- access additional online learning resources
- emails
- Conference or Forum to engage learners in online asynchronous discussions
- Chat Room to engage learners in synchronous online discussions
- viewing online videos of lectures or tutorials
- submitting assignments online
- course announcements and schedules

For comparison, the 2007 survey asked teachers about their prior experience with such e-learning tools to see if their prior experience had any bearing on their preference for utilizing e-learning tools in their classes.

The frequency counts of their answers are shown in percentage form in Table 5.4a and in Table 5.4b. The same data are then converted onto a 4-point Likert Scale and shown in Table 5.4c for analysis and interpretation.

Survey	T2005				T2007				T2009			
Invitations sent	185				666				538			
Sample size	96				85				78			
Response rate	51.9%				12.8%				14.5%			
Category	Very rarely	Occasionally	Regularly	Very frequently	Very rarely	Occasionally	Regularly	Very frequently	Very rarely	Occasionally	Regularly	Very frequently
1) provide course materials online	12%	20%	22%	46%	13%	12%	28%	47%	12%	13%	28%	47%
2) provide additional online learning resources, e.g. Websites or e-journals	20%	34%	23%	23%	24%	31%	27%	19%	28%	41%	13%	18%
3) communicate with learners with emails	5%	14%	26%	55%	16%	25%	33%	26%	6%	17%	33%	44%
4) use forum to engage learners in online discussions asynchronously	81%	12%	4%	3%	68%	20%	7%	5%	86%	12%	1%	1%
5) use Chat Room to engage learners in online discussions synchronously	86%	12%	1%	1%	76	14%	6%	4%	90%	10%	0%	0%
6) provide online videos of lectures or tutorials	85%	9%	5%	1%	81%	11%	2%	6%	90%	5%	5%	0%
7) accept assignments submission online	n/a	n/a	n/a	n/a	36%	27%	19%	18%	63%	13%	9%	15%
8) provide course announcements and schedules	21%	27%	30%	22%	14%	21%	28%	36%	8%	17%	36%	40%

Table 5.4a: Statistics of Teachers' Usage of e-Learning Tools based on Teachers Survey held in Years 2005, 2007 and 2009 (percentage figures may not add up to 100% due to rounding)

Survey	T2007			
Invitations sent	666			
Sample size	85			
Response rate	12.8%			
Category	Very rarely	Occasionally	Regularly	Very frequently
1) receive course materials online	33%	20%	24%	21%
2) access to additional online learning resources, e.g. Websites or e-journals	21%	20%	32%	27%
3) communicate with professors with emails	49%	19%	27%	5%
4) participate in online discussions asynchronously	58%	29%	12%	1%
5) Chat with professors or fellow students synchronously	66%	24%	9%	1%
6) view online videos of lectures or tutorials	56%	27%	13%	4%
7) submit assignments online	38%	26%	21%	15%
8) receive course announcements online	22%	21%	41%	15%

Table 5.4b: Statistics of Teachers' prior experience of using e-Learning Tools as a learner based on Teachers Survey held in Years 2007 (percentage figures may not add up to 100% due to rounding)

Survey	T2005 practice	T2007 practice	T2009 practice	T2007 prior experience
Sample size	96	85	78	85
1) provide course materials online	3.0	3.1	3.1	2.3
2) provide additional online learning resources, e.g. Websites or e-journals	2.5	2.4	2.2	2.7
3) communicate with learners with emails	3.3	2.7	3.1	1.9
4) use forum to engage learners in online discussions asynchronously	1.3	1.5	1.2	1.6
5) use Chat Room to engage learners in online discussions synchronously	1.2	1.4	1.1	1.5
6) provide online videos of lectures or tutorials	1.2	1.3	1.2	1.7
7) accept assignments submission online	n/a	2.2	1.8	2.1
8) provide course announcements and schedules	2.5	2.9	3.1	2.5
Correlation coefficient between T2007 (practice) & T2007 (prior experience)	**0.79**			

Table 5.4c Arithmetic mean of frequency counts of Teachers' usage of e-learning tools based on Teachers Survey in 2005, 2007 & 2009 & in comparison with teachers' prior experience as learners

Overall (Table 5.4c), the teachers seemed to make **regular** use of only four of the eight features of e-learning. In descending order of usage, they were:

	Frequency score
3). Communicate with learners with emails	2.7 - 3.3
1). Provide course materials online	3.0 – 3.1
8). Provide course announcements and schedules	2.5 – 3.1
2). Provide additional online learning resources	2.2 – 2.5

They **occasionally** accepted submissions of assignments online. But notably, only **rarely** did they engage learners in online discussions, either synchronously (Chat room) or asynchronously (Forum or Conference), accept submissions of assignments online, or provide online videos of lectures.

Another somewhat puzzling result is the fluctuation of the extent of using emails for communication (dipped in 2007) and the decline in providing additional materials online (from 46% in 2005 to 31% in 2009) from 2005-2009. Considering that CLL had been promoting e-learning since 2001, the absence of growth of utilizing e-learning and the presence of some signs of regression of utilization are indeed puzzling.

Considering these results in the light of the findings from the previous questions on benefits of e-learning, one might form the impression that although teachers generally recognized the potential benefits of e-learning, their practice of e-learning in their teaching did not seem to show any enthusiasm for embracing e-learning. One possible explanation is perhaps that they found the functional features of SLMS inadequate. As no major functional enhancements were made to SLMS over the survey period of 2005-2009, such limitations of functional features of SLMS might have frustrated the users and prevented them from engaging more proactively with their students in e-learning. This perhaps also helps explain to some extent the absence of the expected growth of utilization of e-learning.

In the 2007 survey, teachers were also asked about their own e-learning experience as students (Table 5.4b). It was expected that a teacher's practice of e-learning may be

directly influenced by how he or she was taught previously. It is possible that not all of them did not have the opportunity to experience e-learning in their student days when e-learning was not as widely available. A comparison of their prior experience as students (last column of Table 5.4c) with their practice of e-learning as teachers (middle column of Table 5.4c) against the same set of e-learning features showed fairly high correlation between their prior experience and their practice with a correlation coefficient of 0.79. However, as the sample is small and data available only in the 2005 survey, the evidence might not be strong enough to draw a conclusion.

		Teachers' prior Experience as students	Practised as teachers
1.	course materials online	2.3	3.1
2.	additional learning resources online	2.7	2.4
3.	communicate with learners with emails	1.9	2.7
4.	use Conference or Forum for asynchronous online discussions	1.6	1.5
5.	use Chat for synchronous online discussions	1.5	1.4
6.	online video lectures	1.7	1.3
7.	online assignment submission	2.1	2.2
8.	provide course announcements and schedules	2.5	2.9

Table 5.5: Comparison of the Statistics of the Application of e-Learning Tools as a Student and as a Teacher based on the Teacher Survey held in Year 2007

Contrasting the teachers' own experience as students and their practice as teachers seems to show fairly good correlation in terms of the pattern of practice of e-learning. How they have been taught before does seem to have some bearing on how they are teaching now. However, whilst the teachers claimed to have had substantial experience with e-learning from their student days, by and large they did not practice e-learning in their own teaching, at least not as extensively, in the same way they were taught, considering years have passed with more advanced technology available since their student days. A good example of their lack of enthusiasm would be the low usage of the main tool of e-learning — Online Discussions Forum — in their practice.

Bearing in mind that based on their answers to the previous questions on expectations of e-learning benefits, they remain quite positive about the expected benefits of e-learning at the same time, what could be the reason for this incongruence? Could it be institutional policy or the lack of it that restricted the teachers? Or could it be lack of user-friendliness of the Learning Management System that hampered the teachers? Data collected from the Web surveys do not seem to be sufficient to give plausible answers. Additional data collection such as through in-depth interviews was necessary to provide more evidence to explain the apparent incongruence.

Practice by learners

To verify the actual practice of e-learning in their courses from the learners' perspective, learners were asked in the surveys to state how extensively they made use of the e-learning tools available to them. In a similar fashion to previous sections, the frequency counts of their opinions were shown first in percentage form (Table 5.6a) and then converted to a 4-point Likert Scale. The arithmetic mean values for each area (Table 5.6b) are then mapped onto Table 5.2b for analysis and interpretation of usages of e-learning in their study.

Learners' usage of e-learning tools

Survey	L2005				L2007				L2009			
Invitations sent	5,598				25,449				22,227			
Sample size	779				2,072				2,051			
Response rate	13.9%				8.1%				9.2%			
Category	Very rarely	Occasionally	Regularly	Very frequently	Very rarely	Occasionally	Regularly	Very frequently	Very rarely	Occasionally	Regularly	Very frequently
1) surf the internet and use search engines for information	2%	9%	26%	63%	10%	17%	24%	49%	9%	18%	24%	49%
2) communicate with teachers or other students by emails	11%	33%	39%	18%	27%	37%	24%	12%	28%	37%	24%	11%
3) use Conference or Forum to participate in online discussions (asynchronously)	40%	39%	16%	5%	64%	24%	9%	3%	69%	21%	7%	3%
4) use Chat Room to participate in online discussions (synchronously)	44%	32%	16%	7%	68%	18%	8%	6%	71%	18%	8%	4%
5) study course materials online	9%	34%	41%	16%	13%	34%	35%	18%	14%	34%	35%	17%
6) watch online videos of lectures/ tutorials	42%	40%	15%	3%	63%	23%	10%	4%	62%	25%	10%	4%
7) hand in assignments online	6%	23%	43%	28%	47%	26%	15%	11%	40%	29%	19%	13%
8) receive course announcements or other course related information online (e.g. schedules)					11%	23%	35%	31%	10%	23%	34%	34%

Table 5.6a: Statistics on Learners' Usage of e-Learning Tools based on Learner Surveys held in Years 2005, 2007 and 2009

Survey	L2005	L2007	L2009
Sample size	779	2072	2051
1) surf the internet and use search engines for information	3.5	3.1	3.1
2) communicate with teachers or other students by emails	2.7	2.2	2.2
3) use Conference or Forum to participate in online discussions (asynchronously)	1.9	1.5	1.4
4) use Chat Room to participate in online discussions (synchronously)	1.8	1.5	1.5
5) study course materials online	2.6	2.6	2.6
6) watch online videos of lectures/ tutorials	1.8	1.6	1.6
7) hand in assignments online	n/a	1.9	2.1
8) receive course announcements or other course related information online (e.g. schedules)	2.9	2.9	2.9

Table 5.6b Arithmetic mean of statistics of Learners' Usage of e-Learning Tools based on Learner Surveys held in Years 2005, 2007 and 2009

Based on Table 5.6b, students only claimed **very frequent** usage of:

1) surf the internet and use search engines for information (mean score of 3.1-3.5).

They claimed **regular** usage in:

	Mean Score
8). receiving course announcements online	2.9
2) communicating with teachers or other students by emails	2.2 – 2.7
5) studying course materials online	2.6

They claimed only **occasional** usage of the other four typical e-learning tools shown in Table 5.6b.

Again, as revealed in the previous sections, use of the important tools of online discussions, either asynchronously (Conference or Forum) or synchronously (Chat Room) was quite low. Clearly, additional interactions among the students or with their teachers must be taking place, likely in a face-to-face manner with all the limitations of time and space.

The apparent low utilization of online communications is likely a result of lack of enthusiasm on the part of the teachers —and students' dependence on their teachers to maintain a presence online. Lam et al. (2009) suggested that adequate training should be provided to teachers to encourage higher usage.

The usage of e-learning claimed by students (Table 5.6b) seems to broadly match the usage claimed by teachers (Table 5.4c) — the two sets of results on the usage of e-learning appear to be generally consistent.

		Claimed by learners	Claimed by teachers
1.	surf the Internet and search engine	3.1 - 3.5	2.2 – 2.5
2.	communicate with teachers/students by emails	2.2 - 2.7	2.7 – 3.3
3.	use Conference or Forum	1.4 – 1.9	1.2 – 1.5
4.	use Chat room	1.5 – 1.8	1.1 – 1.4
5.	study course materials online	2.6	3.0 – 3.1
6.	watch online video	1.6 – 1.8	1.2 – 1.3
7.	submit assignments online	1.9 – 2.1	1.8 – 2.2
8.	receive announcements or schedules online	2.9	2.5 – 3.1

Again, it is interesting to note that the students' claimed usage in both synchronous (range of 1.5 – 1.8) and asynchronous (range of 1.4 – 1.9) interactions are slightly higher than the teachers' claimed usage. It is possible that the teachers did not participate in the online discussions as much as they were expected to. It is also possible, at least for the 2005 and 2007 surveys, given that hand-held devices and the popular social networking sites such as Facebook were not yet as well known in those days; the students may have made use of the online communication tools to interact with fellow students mostly for social rather than academic purposes. Students

would likely be more motivated to participate in online academic discussions about the course matters if either the teachers were actively engaged in those online discussions, or participation in the online discussions formed part of the assessment scheme. To explore these questions in greater depth, interviews with some of the teachers and also experts (teacher-researchers) in the field were organized to examine the validity of these conventional views. The next Chapter, ***Chapter Six, Presentation of Findings and Discussion – In-depth* interviews and a Follow-up Questionnaire Survey,** will present the data collected from these in-depth interviews and the follow-up questionnaire survey.

Practice of Learners of different modes of attendance (PT v FT students)

As an extension of the enquiry into the practice of e-learning by the learners, replies from part-time students were compared with replies from full-time students to ascertain whether the mode of attendance had any bearing on the utilization of e-learning. The survey data for this enquiry are presented in Table 5.7a and 5.7b.

Comparison of utilization of e-learning by PT students and FT students

The statistics of utilization of e-Learning by PT and FT Students based on the Learner Survey held in Year 2007 under the four categories of Very Rarely, Occasionally, Regularly and Very Frequently are shown in Table 5.7a. For easy comparison, these percentage figures are then converted into mean values on a 4-point Likert scale.

Survey	L2007 (Part-time students)				L2007 (Full-time students)			
Invitations sent (combined FT & PT)	25,779				25,449			
Responded students (Sample size)	1,231				841			
Percent of total of 2072 students responded	59.4%				40.6%			
Category	Very rarely	Occasionally	Regularly	Very frequently	Very rarely	Occasionally	Regularly	Very frequently
1) surf the internet and use search engines for information	11%	21%	24%	44%	7%	12%	24%	57%
2) communicate with teachers or other students by emails	33%	36%	21%	10%	19%	39%	28%	15%
3) use Conference or Forum to participate in online discussions (asynchronously)	72%	20%	6%	2%	53%	29%	12%	5%
4) use Chat Room to participate in online discussions (synchronously)	77%	16%	5%	2%	54%	23%	14%	10%
5) study course materials online	14%	32%	34%	21%	12%	38%	36%	13%
6) watch online videos of lectures/ tutorials	66%	22%	9%	3%	59%	25%	12%	4%
7) hand in assignments online	56%	20%	13%	14%	34%	35%	19%	12%
8) receive course announcements or other course related information online (e.g. schedules)	12%	25%	32%	31%	9%	21%	38%	32%

Table 5.7a: Comparison of Utilization of e-Learning by PT and FT Students based on Learner Survey held in Year 2007

As shown in Table 5.7b, the utilization of e-learning tools in ranked order of mean utilization by Part-time Students compared with utilization by Full-time students are as follows:

	PT Students	FT students
1). surf the Internet and search engine	3.0	3.3
8). receive announcements or schedules online	2.8	2.9
5). study course materials online	2.6	2.5
2). communicate with teachers/students by emails	2.1	2.4
7). submit assignments online	1.9	2.1
6). watch online video	1.5	1.6
3). use Conference or Forum	1.4	1.7
4). use Chat room	1.3	1.8

Table 5.7b: Arithmetic mean of statistics of Utilization of e-Learning by PT and FT Students based on Learner Survey held in Year 2007

Whilst the rankings of these tools between the two set of utilization are almost identical (which suggests high correlation), full-time-students seemed to be making more consistent use of e-learning in their study than their part-time counterparts. There is one exception; that is, "study course materials online". This is understandable because PT students are likely working adults who are unable to devote much time for their part-time study. As a result, they tend to focus on the more essential component of the course; that is, studying the given course materials in order to handle the assignments or the examinations.

Also, as there are limited opportunities for students to interact with their teachers face-to-face, teachers tend to rely heavily on the course website to make learning materials available (instead of handing out notes in class) to their students and by the students to access such information on the course Web. Similarly, part-time students who are largely working adults sometimes may not be able to attend classes due to work exigencies and therefore must spend more time reviewing course materials available online to catch up.

One related point was mentioned by teachers and teacher-researchers in several of the in-depth interviews that followed the 2007 Web survey. Several teachers observed that their students were interested in accessing course learning materials online only when forced to do so or to watch online videos of tutorials or lectures when they missed the corresponding face-to-face ones. Similarly, if participation was on a voluntary basis, the participation rate for online Chat or Forum would be low. The reason given was: HK students are pragmatic and assessment-centric. They would put an effort into participating in the prescribed learning activities only if their participation would be assessed by the teachers. On this point, the Web survey results seemed to be in complete harmony with the observations the teachers made in the in-depth interviews. Those teachers who commented on this area consistently stressed that some form of assessment was necessary to motivate students to participate in online discussions.

3. **Experience: benefits and difficulties experienced in utilizing e-learning**

The next set of questions in the surveys asked what actual benefits and difficulties the teachers and learners experienced when utilizing e-learning. The purpose was to triangulate their actual experience with their expectations expressed in their answers to previous questions on expected benefits and impact.

Benefits (Teachers' view)

The teachers were asked their opinions on benefits experienced based on actual experience in teaching using CLL's in-house e-learning platform. They could choose one of five answers (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree). They were also encouraged to provide additional information such as difficulties encountered through open comments. Table 5.8a presents in percentage form their views expressed in the 2007 and 2009 teacher surveys and the frequency counts are then converted onto a 5-point Likert Scale. The arithmetic mean values are then computed and shown in Table 5.8b.

Survey	T2007					T2009				
Invitations sent	666					538				
Sample size	85					78				
Response rate	12.8%					14.5%				
Category	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree
1) using SLMS made me feel more connected to the course	9%	6%	34%	40%	11%	4%	12%	42%	32%	10%
2) using SLMS in my courses met my needs	7%	11%	27%	42%	13%	4%	9%	29%	48%	10%
3) using SLMS in my courses met my expectations	9%	8%	29%	47%	6%	3%	10%	40%	39%	8%
4) it has increased my interest in the teaching topics	13%	13%	45%	27%	2%	10%	19%	53%	13%	4%
5) using SLMS helped me to teach more efficiently	11%	6%	26%	46%	12%	3%	9%	25%	53%	10%
6) using SLMS enhanced my teaching experience	14%	11%	39%	33%	4%	12%	17%	40%	27%	4%
7) I need more training in using SLMS	13%	27%	40%	12%	8%	14%	27%	34%	18%	6%
8) it allowed greater control of my course activities	n/a	n/a	n/a	n/a	n/a	4%	21%	39%	30%	6%
9) it allowed me to get the most updated information about the course (e.g. schedule change)	n/a	n/a	n/a	n/a	n/a	10%	18%	31%	32%	8%
10) it provided more opportunities for knowledge sharing	n/a	n/a	n/a	n/a	n/a	4%	13%	35%	43%	5%
11) it allowed sharing more online resources with learners	n/a	n/a	n/a	n/a	n/a	3%	8%	31%	48%	10%
12) it helped me achieve the learning objectives of learners	n/a	n/a	n/a	n/a	n/a	6%	14%	47%	29%	4%
13) it helped me communicate better with learners	n/a	n/a	n/a	n/a	n/a	0%	13%	27%	52%	8%
14) it helped me understand better the needs of learners	n/a	n/a	n/a	n/a	n/a	5%	31%	45%	14%	4%
15) it resulted in prompt feedback from learners	n/a	n/a	n/a	n/a	n/a	8%	22%	45%	18%	6%

Table 5.8a: Statistics on Teachers' Actual Experience of Benefits in Using the In-house e-Learning Platform based on the Teacher Surveys held in Years 2007 and 2009

Survey	T2007	T2009
Sample size	85	78
1) using SLMS made me feel more connected to the course	3.4	3.3
2) using SLMS in my courses met my needs	3.4	3.5
3) using SLMS in my courses met my expectations	3.3	3.4
4) it has increased my interest in the teaching topics	2.9	2.8
5) using SLMS helped me to teach more efficiently	3.5	3.6
6) using SLMS enhanced my teaching experience	3.1	2.9
7) I need more training in using SLMS	2.8	2.7
8) it allowed greater control of my course activities	n/a	3.1
9) it allowed me to get the most updated information about the course (e.g. schedule change)	n/a	3.1
10) it provided more opportunities for knowledge sharing	n/a	3.3
11) it allowed sharing more online resources with learners	n/a	3.5
12) it helped me achieve the learning objectives of learners	n/a	3.1
13) it helped me communicate better with learners	n/a	3.6
14) it helped me understand better the needs of learners	n/a	2.8
15) it resulted in prompt feedback from learners	n/a	2.9

Table 5.8b: Arithmetic mean of statistics of Teachers' Actual Experience of Benefits in Using the In-house e-Learning Platform based on the Teacher Surveys held in Years 2007 and 2009

Based on Table 5.8b, the teachers' **agreed** (mean score of 3.4-3.9) to the following six areas of benefits (in descending order of significance) of e-learning to them and are **neutral** on the other suggested benefits:

		T2007	T2009
5)	helped me teach more efficiently	3.5	3.6
13)	helped me communicate better with learners		3.6
11)	allowed me to share more online resources with learners		3.5
2)	met my needs	3.4	3.5
3)	met my expectations	3.3	3.4
1)	made me feel more connected to the course	3.4	3.3

Among the six areas of benefits, the top two were about greater efficiency in their teaching and better communication with the learners. Whilst efficiency and communications with the learners are no doubt important, the core advantages of e-learning in terms of pedagogy and learning effectiveness such as knowledge-sharing or enhancing teaching experience were not noticed as sharply. This may reflect a general lack of understanding of the pedagogical advantages of e-learning on the part of the teachers but more likely a lack of training and support provided to the teachers to prepare them for the transition from traditional face-to-face teaching to the more demanding mode of e-learning or blended learning.

One interesting observation from the teacher surveys is the apparent lack of interest in receiving more training on the in-house e-learning platform. Although many teachers opined that the SLMS platform is difficult or not user-friendly enough, only 20-24% of the teachers agreed that they needed more training in using SLMS. It seems either the teachers did not see more training as a solution to the difficulties encountered in using SLMS, or they believed that they would not be properly compensated for the time and effort spent on attending training sessions. Or perhaps, even more fundamentally, the teachers did not believe in e-learning and therefore are reluctant to invest their time in receiving training in order to engage their students in e-learning.

Benefits (Learners' view)

Similarly, in the student surveys, the students were also asked about their opinions on e-learning benefits experienced in using CLL's in-house e-learning platform. They could choose one of five answers (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree). They were also encouraged to provide additional information such as difficulties encountered through open comments. Table 5.9a presents their views expressed in the 2005 and 2007 student surveys in percentage form and the frequency counts are then converted onto a 5-point Likert Scale. The arithmetic mean values are then computed and shown in Table 5.9b.

Comparing e-learning benefits with the traditional face-to-face mode of learning (learners' view)

Survey	L2005					L2007				
Invitations sent	5,598					25,449				
Sample size	779					2,072				
Response rate	13.9%					8.1%				
Category	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree
1) made learning more interesting	8%	23%	42%	22%	5%	9%	23%	40%	25%	3%
2) made learning easier	9%	22%	39%	24%	6%	8%	20%	35%	32%	4%
3) helped me learn at my own pace	5%	14%	35%	36%	9%	6%	13%	33%	40%	7%
4) created more incentives for me to study	15%	27%	35%	19%	4%	12%	24%	39%	22%	3%
5)was more personal	3%	8%	27%	45%	17%	5%	9%	28%	48%	10%
6) is not as good as traditional face-to-face learning	4%	9%	36%	31%	20%	n/a	n/a	n/a	n/a	n/a
7) is better than traditional face-to-face learning (scale reversed for comparison with question 6 above)	2%	9%	37%	36%	17%	n/a	n/a	n/a	n/a	n/a
8) fostered my personal responsibility for learning	n/a	n/a	n/a	n/a	n/a	10%	20%	44%	22%	4%
9) provided more feedback opportunities	n/a	n/a	n/a	n/a	n/a	9%	19%	40%	26%	5%
10) promoted greater participation and interaction	n/a	n/a	n/a	n/a	n/a	11%	24%	42%	20%	3%
11) encouraged me to seek additional online reference materials	n/a	n/a	n/a	n/a	n/a	5%	10%	28%	41%	17%
12) helped me learn outside the classroom	n/a	n/a	n/a	n/a	n/a	5%	5%	32%	42%	12%
13) helped students work together as a group	n/a	n/a	n/a	n/a	n/a	10%	21%	43%	22%	4%
14) helped teachers to be more successful	n/a	n/a	n/a	n/a	n/a	10%	17%	48%	21%	4%

Table 5.9a: Statistics of learners' view on comparison of e-learning with traditional face-to-face of learning based on Learner Surveys held in Years 2005 and 2007 (percentage figures may not add up to 100% due to rounding)

Survey	L2005	L2007
Sample size	779	2,072
1) made learning more interesting	2.9	2.9
2) made learning easier	3.0	3.0
3) helped me learn at my own pace	3.3	3.3
4) created more incentives for me to study	2.7	2.8
5) was more personal	3.7	3.5
6) is not as good as traditional face-to-face learning	3.5	n/a
7) is better than traditional face-to-face learning (scale reversed for comparison with question 6 above)	3.6	n/a
8) fostered my personal responsibility for learning	n/a	2.9
9) provided more feedback opportunities	n/a	3.0
10) promoted greater participation and interaction	n/a	2.8
11) encouraged me to seek additional online reference materials	n/a	3.6
12) helped me learn outside the classroom	n/a	3.4
13) helped students work together as a group	n/a	2.9
14) helped teachers to be more successful	n/a	2.9

Table 5.9b: Arithmetic mean of statistics of learners' view on comparison of e-learning with the traditional face-to-face learning based on Learner Surveys held in Years 2005 and 2007

As identified in the 2005 and 2007 surveys (Table 5.9b), the learners **agreed** (mean score within the range of 3.4-3.9) to the following benefits of e-learning but were basically **neutral** (mean score within the range of 2.7-3.3) regarding all the other suggested benefits of e-learning:

	2005	2007
5) was more personal	3.7	3.5
11) encouraged me to seek additional online reference materials		3.6
12) helped me learn outside the classroom		3.4

In comparison with the teachers' view on the benefits of e-learning, the learners seemed to be slightly more appreciative of the pedagogical advantages offered by e-learning. The top benefits identified were about self-directed learning, expanding the learning space, and flexibility of pace of learning.

However, they clearly felt "*e-learning was not as good as traditional face-to-face learning*" (mean score of 3.5). As a double check, they were also asked the opposite question of whether they support the notion that e-learning is "*better than traditional face-to-face learning*". Their response was a clear "No" (mean score of 3.6 after reversing the scores). One interpretation of their expressed views would seem to be that, despite all the benefits of e-learning that they recognized, they are not interested in e-learning as a replacement to traditional face-to-face learning. At best, e-learning will be welcome only as an add-on to the existing face-to-face learning. Perhaps for this reason, more and more institutions are actually adopting blended learning although they still use the label of e-learning.

Students' response to this set of questions in the 2007 survey were disaggregated by their mode of attendance to see if there were any noticeable differences of opinions between part-time and full-time students. The results are presented in Table 5.9c and Table 5.9d.

Survey	L2007 (Part-time)					L2007 (Full-time)				
Sample size	1,231					841				
Category	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree
1) made learning more interesting	8%	23%	41%	25%	3%	9%	23%	38%	25%	4%
2) made learning easier	8%	20%	34%	34%	4%	8%	21%	36%	31%	4%
3) helped me learn at my own pace	6%	13%	33%	41%	8%	7%	13%	34%	39%	7%
4) created more incentives for me to study	11%	24%	39%	23%	4%	13%	24%	39%	21%	3%
5)was more personal	4%	8%	29%	48%	10%	5%	9%	27%	49%	10%
6) is not as good as traditional face-to-face learning	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7) is better than traditional face-to-face learning (reversed scale for comparison with question 6 above)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
8) fostered my personal responsibility for learning	9%	20%	43%	25%	4%	11%	20%	46%	19%	4%
9) provided more feedback opportunities	8%	18%	40%	29%	5%	11%	21%	40%	23%	5%
10) promoted greater participation and interaction	10%	22%	44%	22%	3%	12%	29%	40%	17%	3%
11) encouraged me to seek additional online reference materials	5%	10%	28%	43%	15%	5%	10%	27%	37%	20%
12) helped me learn outside the classroom	5%	8%	31%	44%	11%	6%	11%	32%	39%	12%
13) helped students work together as a group	9%	21%	44%	22%	3%	10%	22%	42%	22%	5%
14) helped teachers to be more successful	9%	17%	48%	22%	4%	11%	18%	48%	20%	4%

Table 5.9c: Statistics of learners' view on comparison of e-learning and traditional face-to-face learning based on Full-time and Part-time Learner Surveys held in Year 2007 (percentage figures may not add up to 100% due to rounding)

Survey	L2007 Part-time	L2007 Full-time
Sample size	1,231	841
1) made learning more interesting	2.9	2.9
2) made learning easier	3.1	3.0
3) helped me learn at my own pace	3.4	3.3
4) created more incentives for me to study	2.9	2.8
5)was more personal	3.5	3.5
6) is not as good as traditional face-to-face learning	n/a	n/a
7) is better than traditional face-to-face learning (scale reversed for comparison with question 6 above)	n/a	n/a
8) fostered my personal responsibility for learning	3.0	2.9
9) provided more feedback opportunities	3.1	2.9
10) promoted greater participation and interaction	2.9	2.7
11) encouraged me to seek additional online reference materials	3.6	3.5
12) helped me learn outside the classroom	3.5	3.4
13) helped students work together as a group	2.9	2.9
14) helped teachers to be more successful	3.0	2.9
Correlation coefficient	0.98	

Table 5.9d: Arithmetic mean of statistics of learners' view on comparison of e-learning with traditional face-to-face learning based on Full-time and Part-time Learner Surveys held in Year 2007

As Table 5.9d shows, the opinions of Part-time and Full-time students are highly consistent with a correlation coefficient of 0.98. In other words, their views on the potential benefits of e-learning are essentially the same irrespective whether they are full-time or part-time students. The mean scores for each question for the two groups are within one decimal point except for the following two areas:

	L2007 PT students	L2007 FT students
9) Provided more feedback opportunities	3.1	2.9
10) Promoted greater participation and interaction	2.9	2.7

Regarding the above two areas of benefits of e-learning, the part-time students were slightly more positive than their full-time counterparts. Part-time students appear to be more appreciative of these benefits perhaps because they have less opportunity to interact with their teachers than full-time students do. This is understandable because, as classes of part-time programmes tend to be held in the evenings in Hong Kong, both the teachers and students of the evening programmes typically have to rush to class after their normal daytime work and then rush home for dinner or to spend time with their families. Therefore, opportunities for face-to-face interactions outside of regular class hours are rare.

Difficulties (Teachers' view)

In terms of the difficulties of utilizing e-learning, teachers' views extracted from the 2005 teacher survey are compared with learners' views extracted from the 2005 and 2007 learner surveys. These results are first presented in percentage form in Table 5.10a and then converted to a 5-point Likert Scale for comparison of the mean values as shown in Table 5.10b

Difficulties for learners as perceived by teachers & experienced by learners

Survey	Teachers survey -T2005					Learners survey - L2005					Learners survey - L2007				
Invitations sent	185					5,598					25,449				
Sample size	96					779					2,072				
Response rate	51.9%					13.9%					8.1%				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a) hard to follow	5%	16%	57%	18%	4%	2%	18%	42%	31%	7%	5%	19%	38%	33%	5%
b) do not understand the study materials	5%	18%	45%	30%	11%	3%	27%	40%	25%	5%	6%	26%	39%	25%	4%
c) not comfortable studying using computers	8%	32%	45%	11%	11%	9%	24%	39%	20%	8%	12%	32%	35%	17%	5%
d) felt helpless during the study	9%	26%	35%	24%	5%	7%	24%	35%	24%	11%	8%	24%	33%	26%	8%
e) age has been a handicap in doing e-learning	23%	41%	26%	7%	14%	46%	32%	18%	2%	2%	42%	34%	20%	3%	1%

Table 5.10a: Statistics on Difficulties as perceived by teachers based on teacher survey conducted in 2005 in comparison with experience by learners based on Learner surveys conducted in 2005 and 2007 (percentage figures may not add up to 100% due to rounding)

Survey	T2005	L2005	L2007
Sample size	96	779	2072
a) hard to follow	3.0	3.2	3.1
b) do not understand the study materials	3.5	3.0	3.0
c) not comfortable studying using computers	3.1	2.9	2.7
d) felt helpless during the study	2.9	3.1	3.0
e) age has been a handicap in doing e-learning	2.8	1.8	1.9

Table 5.10b: Arithmetic mean of statistics of Difficulties as perceived by teachers based on teacher survey conducted in 2005 in comparison with experience by learners based on Learner surveys conducted in 2005 and 2007

Of the five areas of difficulties suggested in the questionnaire, the teachers only **Agreed** (mean score of 3.5) that when students "*do not understand the study materials*" that is a difficulty. They were basically neutral on the other four suggested difficulties.

The question whether age is a significant factor in effective e-learning was originally the focus of this research project. However, as three rounds of surveys had repeatedly shown, neither the teachers nor the learners believed that being old was a handicap in e-learning. By and large they believed it would not make much difference one way or the other. According to these informants, age does not seem to be a significant factor in e-learning. For this reason, the principal focus of this research project shifted from one about enquiry into the impact of old age to effective e-learning to a general enquiry of the potential benefits, impact, and barriers to greater adoption of e-learning in Hong Kong.

Difficulties (Learners' view)

Students were also asked about any difficulties they encountered in adjusting to e-learning. They were given the same set of possible difficulties to consider.

Based on the figures in Table 5.10a and Table 5.10b, the students did not seem to agree with their teachers on whether the suggested area of "*do not understand the study materials*" presents a difficulty in e-learning (mean score of 2.7-2.9 vs. 3.5). There might have been some over-confidence on the part of the learners regarding

their ability to adjust to e-learning. As learners need to be more self-directed in e-learning than in traditional face-to-face learning, the transition to e-learning does not come naturally simply by teachers setting up all the learning materials online and then asking the learners to be as active as possible in online discussion.

On the other four suggested areas of difficulties for the learners, both the learners and the teachers were generally neutral. However, on the question of whether age has been a handicap in doing e-learning, it is interesting to note that while the teachers took a **neutral** position (mean score of 2.8), the learners actually **disagreed** (mean scores of 1.8 & 1.9 from the two learners surveys).

Possibly, as the full-time students tended to be of normal school age (97-99% were aged 24 and below) for that level of study, age is not a concern. But even for the part-time students, as only a small percentage of the respondents were aged 50 and above (1.71% in the 2007 survey), their appreciation of possible difficulties associated with old age such as declining physical and cognitive abilities may tend to be vague and superficial.

In addition, the rejection of age as a source of difficulties to their learning could also be the result of a problem of ambiguity in the phrasing of that question in the questionnaire. That question may be interpreted as suggesting whether someone is either too young or too old for e-learning. If so, then whether someone is considered too young or too old depends on the activity or task that person is engaging in. Age itself is not a problem *per se* but old age coupled with declining health would likely be. Moreover, 'youth' may be a problem in e-learning if that implies a lack of maturity, and therefore a lack of self-discipline or self-directedness in learning.

Comparison of views by mode of attendance [Part-time vs. Full-time students]

In the 2007 learner survey, data collected for this set of questions were disaggregated to explore whether part-time students and full-time students experienced difficulties with e-learning differently. This comparison is shown in Table 5.11a & Table 5.11b.

Survey	L2007 Part-time students					L2007 Full-time students				
Sample size	1,231					841				
Response rate	59.4%					40.6%				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a) hard to follow	4%	18%	38%	35%	5%	5%	22%	40%	29%	5%
b) do not understand the study materials	6%	24%	40%	26%	4%	6%	29%	37%	24%	4%
c) not comfortable studying using computers	12%	33%	34%	16%	5%	10%	30%	37%	18%	5%
d) felt helpless during the study	8%	24%	32%	28%	8%	9%	24%	35%	24%	7%
e) age has been a handicap in doing e-learning	37%	37%	20%	4%	1%	48%	29%	19%	3%	1%

Table 5.11a: Comparison of Views on Difficulties between Part-time and Full-time Students based on the Learner Survey held in Year 2007

Survey	L2007 Part-time	L2007 Full-time
Sample size	1231	841
a) hard to follow	3.2	3.1
b) do not understand the study materials	3.0	2.9
c) not comfortable studying using computers	2.7	2.8
d) felt helpless during the study	3.0	2.9
e) age has been a handicap in doing e-learning	1.9	1.8

Table 5.11b: Comparison of arithmetic means of statistics of Difficulties between Part-time and Full-time Students based on the Learner Survey held in Year 2007

The results show that in general the views of the full-time and part-time groups of students are remarkably similar (mean scores within one decimal for each question).

In particular, both groups strongly reject the notion that age has been a handicap in doing e-learning (mean scores of 1.9 & 1.8). Other than that, both groups were largely neutral on the other suggested difficulties (within the range of 2.7 – 3.3).

These figures are quite consistent with the actual utilization of e-learning as presented in the section on actual practice. However, the correlation between the two is unclear. That is, although part-time students generally make less use of e-learning tools in their study, whether such lower utilization is a result of the difficulties that they experienced or whether less practice caused more difficulties is hard to tell from the available data. There are obvious limitations in a structured questionnaire survey. The deeper meaning of their answers cannot be deciphered without further probing. For this reason, the quest for an answer to the research question needs to move into another stage of data collection — the in-depth interviews which are presented in the next chapter, *Presentation of Findings and Discussion — In-depth Interviews and a follow-up questionnaire survey.*

Older learners

Data in the 2007 learner survey were also disaggregated to see if views of older learners were significantly different from their younger fellow students. The results are presented in Table 5.12a & 5.12b.

Comparison of views by age groups [below 50 Vs. 50 & above students]

Survey	L2007 Age below 50					L2007 Age 50 *& above				
Sample size	2,050					22				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a) hard to follow	4%	20%	38%	33%	5%	14%	5%	45%	32%	5%
b) do not understand the study materials	6%	26%	39%	25%	4%	18%	41%	32%	5%	5%
c) not comfortable studying using computers	11%	32%	35%	17%	5%	23%	36%	18%	18%	5%
d) felt helpless during the study	8%	24%	33%	26%	7%	14%	32%	27%	23%	5%
e) age has been a handicap in doing e-learning	42%	34%	20%	3%	1%	36%	41%	14%	5%	5%

Table 5.12a: Comparison of Views by Age Group (Below 50 vs. Above 50) based on the Learner Survey held in Year 2007 (figures may not add up to 100% due to rounding)

Survey	L2007 age below 50	L2007 age 50 or above
Sample size	2050	22
a) hard to follow	3.2	3.1
b) do not understand the study materials	3.0	2.4
c) not comfortable studying using computers	2.7	2.5
d) felt helpless during the study	2.9	2.8
e) age has been a handicap in doing e-learning	1.9	2.1

Table 5.12b: Comparison of Views by Age Group (Below 50 vs. Above 50) based on the Learner Survey held in Year 2007

As the table above shows, both groups **strongly disagreed** with the notion that "*age has been a handicap in doing e-learning*" (score of 2.1 & 1.9).

However, the older learners disagreed that "*understand the study materials*" (mean score of 2.4), and "*using computers*" (mean score of 2.5) were difficulties but took a neutral position similar to the below-50 group on the other two causes of difficulties: "*felt helpless during the study*" and "*hard to follow*".

4. **Barriers: perceived barriers to greater adoption of e-learning**

The fourth and last section of the Web surveys sought the respondents' view on possible barriers to the greater adoption of e-learning in Hong Kong.

Language as a barrier

The medium of instruction in the CLL is English, except for courses with special needs such as Chinese Literature. However, as explained in *Chapter Two, Context of the enquiry*, whilst English proficiency is assumed for students studying at tertiary education level, Chinese is extensively used on campus and, although frowned upon by the university, students tend to interact with an intermix of Chinese and English in discussions. As the practice of e-learning involves written communications more extensively and the inputting of Chinese characters is more difficult and cumbersome than English characters, it would be of great interest to find out if the teachers and students see the more restricted use of language (more difficult to intermix Chinese and English) as a barrier to e-learning, especially in online discussions. The language issue was one of the main topics of discussions with participants during the in-depth interviews that followed the web surveys.

Language impact on Learners – Teachers' view Vs. Learners' view

The students' views from the 2005 and 2007 surveys are summarized and compared with the teachers' view from the 2005 survey. The results are presented in percentage form in Table 5.13a and then converted to a 5-point Likert Scale for calculation of arithmetic means as shown in Table 5.13b.

Table 5.13a: Impact of Language and Culture on Learners based on the Learner Surveys held in Years 2005 and 2007 (figures may not add up to 100% due to rounding)

Survey	T2005					L2005					L2007				
Invitations sent	185					5,598					25,449				
Sample size	96					779					2,072				
Response rate	51.9%					13.9%					8.1%				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a) There are greater disadvantages embedded in the learning process of e-learning	8%	28%	34%	24%	5%	8%	33%	36%	18%	5%	13%	37%	33%	14%	3%
b) The language barriers in the learning process of e-learning is greater	12%	18%	34%	27%	9%	11%	33%	32%	18%	6%	15%	37%	29%	15%	3%
c) There are cultural barriers in the learning process of e-learning	11%	30%	36%	19%	4%	11%	33%	35%	18%	3%	14%	36%	33%	15%	3%
d) Comparing with e-learning, it is harder to learn in classroom (face-to-face) using English in the medium of information	16%	35%	39%	7%	3%	18%	33%	31%	12%	6%	16%	35%	32%	13%	4%

Survey	T2005	L2005	L2007
Sample size	96	779	2072
a) There are greater disadvantages embedded in the learning process of e-learning	2.9	2.8	2.6
b) The language barriers in the learning process of e-learning is greater	3.0	2.8	2.5
c) There are cultural barriers in the learning process of e-learning	2.8	2.7	2.6
d) Comparing with e-learning, it is harder to learn in classroom (face-to-face) using English in the medium of information	2.5	2.6	2.5

Table 5.13b: Comparison of mean values of statistics of Impact of Language and Culture on Learners based on the Learner Surveys held in Years 2005 and 2007

The views expressed by the teachers seemed quite consistent with the students' views. Of the four suggested English language related barriers, both **disagreed** with the notion of ("*Comparing with e-learning, it is harder to learn in classroom (face-to-face) using English in the medium of information*") but were **neutral** on the other three.

This basically indicated that both the students and the teachers did not see language as an issue in adopting e-learning. They did not see the language barriers greater in e-learning nor did they see language barriers greater in the classrooms. In some way perhaps, this is not surprising as the CLL has a fairly strict policy on the language of instruction (English) in line with its parent university. Its parent university is well-known in Hong Kong for being an institution that places great importance on the English proficiency of its students. For this reason, the students of CLL may be, to some extent, a self-selected group possessing superior rather than average English language proficiency. Therefore, a greater level of confidence in English was expressed through these surveys.

Data from the 2007 learner survey were disaggregated to see if there was any significant difference of views on the language issue between the part-time and full-time students. The results showed that the two groups generally agreed on all

language-related issues and rejected any suggestions that language was a barrier to e-learning.

The part-time students seemed to have a slightly stronger opinion than the full-time students with respect to the language issues, except that their views were closer to the teachers' on the suggestion that it is harder using English to learn in classrooms than in e-learning.

The students' and the teachers' views on the impact of language from the 2005 surveys as well as the students' view from the 2007 survey are summarized and compared. The results are presented in percentage form in Table 5.14a and then converted to a 5-point Likert Scale for calculation of arithmetic means as shown in Table 5.14b.

Comparison of views expressed by teachers, Part-time students and Full-time students [disaggregated from L2007]

Table 5.14a: Comparison of Views on Impact of Language of PT Students, FT Students and Teachers based on both the Learner Surveys held in Years 2005 and 2007 and Teacher Survey Held in Year 2005 (figures may not add up to 100% due to rounding)

Survey	Teacher survey - T2005					Learner survey - L2005 (part-time students)					Learner survey - L2007 (full-time students)				
Invitations sent	185					25,449 (combined PT & FT students)					25,449 (combined PT & FT students)				
Sample size	96					841					1,231				
Response rate	51.9%					N/A					N/A				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a) There are greater disadvantages embedded in the learning process of e-learning	8%	28%	34%	24%	5%	13%	36%	34%	13%	2%	13%	37%	32%	15%	3%
b) The language barriers in the learning process of e-learning is greater	12%	18%	34%	27%	9%	15%	35%	31%	16%	3%	15%	39%	29%	15%	3%
c) There are cultural barriers in the learning process of e-learning	11%	30%	36%	19%	4%	14%	35%	34%	15%	3%	14%	36%	32%	15%	3%
d) Comparing with e-learning, it is harder to learn in classroom (face-to-face) using English in the medium of information	16%	35%	39%	7%	3%	19%	35%	30%	11%	4%	14%	35%	33%	15%	4%

Survey	T2005	L2005 Part-time	L2007 Full-time
Sample size	96	841	1231
a) There are greater disadvantages embedded in the learning process of e-learning	2.9	2.5	2.6
b) The language barriers in the learning process of e-learning is greater	3.0	2.6	2.6
c) There are cultural barriers in the learning process of e-learning	2.8	2.6	2.6
d) Comparing with e-learning, it is harder to learn in classroom (face-to-face) using English in the medium of information	2.5	2.4	2.6

Table 5.14b: Comparison of mean values of statistics of Views on Impact of Language of PT Students, FT Students and Teachers based on both the Learner Surveys held in Years 2005 and 2007 and Teacher Survey Held in Year 2005

Based on Table 5.14b, there seems to be negligible difference in the views expressed by the two groups of part-time and full-time students. Overall, all took a neutral position on the first three questions but disagreed with the notion that "*comparing with e-learning, it is harder to learn in classroom (face-to-face) using English in the medium of information*".

Other barriers

In the 2009 survey, teachers were then asked to agree or disagree with a list of suggested obstacles to more effective use of e-learning in their courses. Their responses in descending order of frequencies of response are shown below in Table 5.15a.

Obstacles to more effective use of e-learning

(in ranked orders of high to low responses)

Survey	T2009
Invitations sent	538
Sample size	78
Response rate	14.5%
1. None	30.8%
2. The course is not suitable for online learning	29.5%
3. Learners tend to be used to status quo learning methods	24.4%
4. Functions in SLMS are with low flexibility	24.4%
5. SLMS is not user friendly	21.8%
6. Instructors are not equipped with the knowledge on how to use SLMS	19.2%
7. It is time-consuming to prepare/design the course materials	14.1%
8. Instructors lack pedagogical expertise of delivering course online	12.8%
9. SLMS cannot meet the teaching needs	11.5%
10. Others [please elaborate]	7.7%

Table 5.15a: Teachers' Views on Obstacles to More Effective Use of e-Learning based on Teacher Survey held in Year 2009

Additional Barriers suggested by teachers

Under **Open Comments**, various problems and barriers were suggested by some teacher. Their comments were grouped into three broad related areas in Table 5.15b (Fink, 1995; Miles & Huberman, 1994). However, it might be argued that some of these suggested barriers are unique to CLL, particularly with respect to the in-house e-learning platform SLMS, and might not be a common barrier to students and staff of other tertiary educational institutions in Hong Kong.

Themes emerging from Open Comments	Frequency Count for Instructors		
	T2005	T2007	T2009
Work Load: extra workload brought about with the transition to e-learning. This barrier is closely related to the lack of support to teachers, which means the burden on the teachers will not be shared by the institution.	2	4	5
Lack of Support and Co-ordination: Some teachers were concerned about the large amount of work associated with the input, update, and monitoring and vetting learning materials to be put online. Learners complained that sometimes materials were not updated regularly. In general, there is a lack of promotion and encouragement to use e-learning. Course administrators do not make good use of the e-learning system; for example, no course results, no online assignment submission. Course administrators did not give sufficient support to the teachers; for example, timely uploading of class lists and notes to the e-learning platform.	4	5	18
E-Learning Platform related: Some teachers found the e-learning platform cumbersome, time-consuming, and slightly 'techie' for the 'non-techie' teachers. Other comments included: lack of functionality, not user friendly, unattractive interface, low storage, and slow response time. Some commented that the shortcomings of the in-house platform, SLMS became a barrier to greater adoption of el-learning.	12	16	25
Total Count	18	25	48

Table 5.15b: Additional barriers suggested by teachers in their open comments in teacher surveys 2005, 2007 and 2009

1. Workload

A major concern was the extra workload brought about with the transition to e-learning. This barrier is closely related to the lack of support to teachers, which means the burden on the teachers will not be shared by the institution.

2. Lack of support and coordination

Some teachers were concerned about the large amount of work associated with the input, update, and monitoring and vetting learning materials to be put online. Learners complained that sometimes materials were not updated regularly.

In general, there is a lack of promotion and encouragement to use e-learning. Course administrators do not make good use of the e-learning system; for example, no course results, no online assignment submission. Course administrators did not give sufficient support to the teachers; for example, timely uploading of class lists and notes to the e-learning platform.

3. E-learning platform-related

Some teachers found the e-learning platform cumbersome, time-consuming, and slightly 'techie' for the 'non-techie' teachers. Other comments included: lack of functionality, not user friendly, unattractive interface, low storage, and slow response time. Some commented that the shortcomings of the in-house platform, SLMS became a barrier to greater adoption of el-learning.

Some similar findings were also reported by Lam et al. (2009) when they studied the readiness in adopting e-learning among teachers and students.

Barriers suggested by Learners

In the learner surveys, learners were given a set of potential obstacles to more effective use of e-learning [based on the in-house Learning Management System, SLMS] and were asked to identify whether they experienced one or more of the potential obstacles in their study.

Table 5.16a lists the obstacles in descending order of frequencies of response:

Obstacles to more effective use of e-learning

Survey	L2009
Invitations sent	22,227
Sample size	2,051
Response rate	9.2%
1. Instructors have not made use of SLMS	**33.0%**
2. Instructors seem to be used to status quo teaching methods	**31.4%**
3. The course is not suitable for online learning	**27.3%**
4. Functions in SLMS are with low flexibility	**26.0%**
5. SLMS cannot meet the learning needs	**25.6%**
6. Learners are not equipped with the knowledge on how to use SLMS	**25.2%**
7. SLMS is not user friendly	**22.6%**
8. None	**21.9%**
9. Instructors have not motivated learners to utilize SLMS	15.7%
10. Others [please elaborate]	3.7%

Table 5.16a: Learners' Views on Obstacles to More Effective Use of e-Learning based on Learner Survey held in Year 2009

Additional Barriers suggested by Learners

Under "***Others***", various potential obstacles were suggested by some learners. In total 500, 396 and 553 comments were given by respondents to the surveys in the 2005, 2007 and 2009 surveys respectively. Their comments are summarized into five clusters of related themes. The frequency counts for each cluster are presented in Table 5.16b.

Themes emerging from students' comments	Frequency Count for Students		
	L2005	L2007	L2009
Teachers: teachers' reluctance or unfamiliarity of using the e-learning system.	77	81	114
Course Materials: materials were not updated regularly and little useful material could be found via the e-learning system or too many restrictions existed in accessing the e-library.	78	69	81
Students: obstacles related to either lack of motivation to use e-learning or lack of knowledge/ training on how to use the e-learning system. Some also stated a preference to use widely available free software such as MSN or Facebook for interaction with each other rather than the course e-learning system.	44	39	67
E-Learning Platform related: Learners identified a number of weaknesses or lack of functionality of the e-learning system; for example, not user friendly, unattractive interface, and low storage. Slow response time of the e-learning system was also a concern.	111	145	176
Course Administration and Support: a lack of promotion and encouragement to use e-learning. Course administrators did not make good use of the e-learning system; for example, no course results, no online assignment submission. Course administrators did not give sufficient support to the teachers; for example, timely uploading of notes to SLMS.	190	62	115
Total Count	500	396	553

Table 5.16b: Additional barriers suggested by learners in their open comments in learner surveys 2005, 2007 and 2009

The additional barriers suggested by learners can be grouped into five broad areas.

1. Teachers

The obstacles suggested were mainly centered on teachers' reluctance or unfamiliarity of using the e-learning system.

2. Course materials

Learners mentioned the materials were not updated regularly and little useful material could be found via the e-learning system, or too many restrictions existed in accessing the e-library.

3. Students

Most of the suggested obstacles related to either lack of motivation to use e-learning or lack of knowledge/ training on how to use the e-learning system. Some also stated a preference to use widely available free software such as MSN or Facebook for interaction with each other rather than the course e-learning system.

4. LMS

Learners identified a number of weaknesses or lack of functionality of the e-learning system; for example, not user friendly, unattractive interface, and low storage. Slow response time of the e-learning system was also a concern.

5. Course administration and support

In general, there was a lack of promotion and encouragement to use e-learning. Course administrators did not make good use of the e-learning system; for example, no course results, no online assignment submission. Course administrators did not give sufficient support to the teachers; for example, timely uploading of notes to SLMS.

Like the results of the teacher survey mentioned above, most of these obstacles identified by learners tended to be unique problems to the CLL, at least specific to the in-house e-learning platform SLMS. They may not be representative of common

obstacles or barriers to greater diffusion or adoption of e-learning in Hong Kong. Possible exceptions could be:

- Teachers reluctance or unfamiliarity with e-learning
- Lack of support for the teachers
- Lack of motivation of the students
- E-learning system not attractive

It might be of interest to mention that in the open comments on difficulties provided by students, many good examples of the wide-spread phenomenon of code-mixing emerged. A large percentage of the comments mixed Chinese and English within one sentence (intra-sentential code-mixing) and even within a short phrase. The following is one good example:

> "除左一位 miss sent information 俾我地睇；上一個 sem 上 soul 交 assignment; check 下 timetable; 上 soul 睇下通告"
>
> (Only one [female] teacher sent [post] information for us to view. Last semester, I submitted assignments using [the in-house LMS], checked my timetable, and read announcements on [the in-house LMS].)

Summary of chapter

The six online Web surveys spanned a period of 39 months, from 5 Dec 2005 to 22 February 2009. These surveys served two main purposes: first, to collect data to inform the research question of this study — namely, the benefits of e-learning to Hong Kong learners and barriers to greater adoption; second, to provide clues to the continuous improvement of the in-house e-learning platform and mode of operation. For this latter purpose, changes were made to the questionnaires from year to year. However, the following four key questions were always asked, albeit, with slightly changed wordings:

- What do the teachers expect from e-learning, or in other words, what is their attitude towards e-learning prior to actually experiencing e-learning?

- How was e-learning actually practised in the courses?

- How was their actual experience, good or bad, with e-learning?

- What did they see were barriers to greater adoption or diffusion of e-learning in Hong Kong?

Based on their responses to these questions, there appears to be a high degree of agreement between the three rounds of surveys which reflects, perhaps, a high degree of inter-rater reliability (Palys, 1997) of the inferences being drawn, whereas, the threat of maturation (of the informants) to the internal validity is unlikely to be significant because of the long span of the three rounds of Web surveys. Over a period of 39 months, (end of 2005 to beginning of 2009) the likelihood of the same informants participating in more than one round of the surveys is very low (save for a handful of long-serving teachers). That means, although the surveys of the learners and teachers were conducted in different years, their views were remarkably similar and consistent. In addition, we can also make the following observations:

Attitude

In general, the teachers were positive towards e-learning. They may not be fully aware of the full range of benefits, pedagogical ones or otherwise, but they welcome the addition of e-learning to their courses. Mostly, they see the benefits of greater efficiency, flexibility of information access but not greater self-directed learning or greater interaction for the learners. However, it is important to note the use of the word "addition" here, as their acceptance, especially for students, is contingent upon the retention of the face-to-face sessions in their courses. According to their open comments, teachers believed their students would agree that e-learning is good to have as an extra feature of the course, but not as a replacement for the traditional face-to-face lectures and tutorials.

Practice

The practice of e-learning learners reported in the courses was fairly consistent with that reported by teachers. High on the list of utilization are search engine, online assignment submission and course schedule, emails, and online course materials. At the low end of utilization are Conference (or Forum), Chat, and online videos. This is surprising as the teachers are at the centre of the activities during the course, students' utilization of e-learning must coincide with what the teachers are encouraging or leading the students to do. The low utilization of online communications by students other than emails must be closely related to the low utilization by teachers. Moreover, had teachers been active in the online Forum, the students would likely follow because they do want to leave a good impression with their teachers, and would be even more motivated to participate if Forum participation formed part of the assessment for the course.

Experience (benefits and difficulties)

Broadly speaking, the actual benefits experienced by teachers were consistent with their expected benefits. The most obvious benefits to them were in the improvement of teaching efficiency, and improvement of communication with their students. Regrettably, the pedagogical benefits such as knowledge-sharing that e-learning can bring to the teaching and learning experience had not been as strongly noticed. This may show a lack of appreciation of importance of pedagogy or a lack of training on how to teach using e-learning.

In terms of difficulties encountered, the teachers were more confident than the students and strongly rejected all five suggested areas of possible difficulties. However, the students agreed that "*e-learning hard to follow*", "*do not understand the study materials*" and "*helpless during study*" are areas of difficulties but agreed with teachers that using computers and age were not sources of difficulties. It is interesting that those aged 50 and above felt more strongly on these two points than their younger fellow-students.

Barriers

Whilst fairly substantial data were generated from the surveys with respect to the first three questions, answers to the fourth, barriers to greater adoption of e-learning, came somewhat short of expectations. This may not be a surprise as students and the average teachers were not involved with the whole spectrum of planning and designing e-learning courses, so it is hard for them to see the bigger picture beyond the operation of their own courses and therefore to be in a position to suggest system-wide issues and problems with e-learning. Both teachers and students see the lack of support for teachers or the courses, and shortcomings in the in-house e-learning platform as barriers to greater adoption of e-learning. However, the students also consider the lack of interest in utilizing the e-learning system and the lack of training on how to use the e-learning system as barriers. It is interesting to note that the teachers do not see the need for more training on how to use the e-learning system.

The language of instruction in e-learning, or more specifically the use of English as the medium of instruction, has been an interesting issue to explore. Both teachers and students do not see using a second language (English) as the medium of instruction a disadvantage nor an advantage in e-learning. An issue such as the language of instruction may be too complicated to give a simple answer of "agree" or "disagree". It may be necessary to make certain assumptions, either implicitly stated or otherwise, to qualify ones' answer. In addition, there may be some concerns of 'losing face' on the part of both teachers and students if admitting classroom use of English as a medium of instruction is a problem. After all, students at the tertiary education level are assumed to have English language proficiency before being admitted to the universities in Hong Kong. The particular sample these surveys targeted were students and teachers of the CLL which, among similar institutions in Hong Kong, is well-known for its emphasis on English as the medium of instruction policy. For this reason, perhaps, the students who responded to these surveys were to some extent a group with above-average English language skills. Therefore, these simple structured web surveys may only be able to gently scratch the surface of the real problem in Hong Kong with second language in e-learning.

This series of online Web surveys of a limited sample of teachers and students provided some interesting insights to the research puzzle of this study. However, it also left some questions only superficially answered; for example, the second language issue. A series of in-depth interviews with some experienced teachers and some teacher-researchers who are leading experts in the field in Hong Kong was organized to fill the gap with a broader perspective and more in-depth analysis of the questions to find an answer to the research puzzle.

The next Chapter presents and analyzes data collected from the in-depth interviews and the follow-up questionnaire survey.

Chapter Six

Presentation of Findings and Discussion – In-depth Interviews and a follow-up questionnaire survey

This chapter presents the third and last group of data collected for this enquiry. As mentioned previously, data collection started with three rounds of web surveys of students and teachers of the College of Lifelong Learning (CLL) to ascertain their views on the benefits and impact of e-learning. Whilst they were largely positive towards e-learning as enrichment to the learning mode, they indicated a strong preference to retain the face-to-face teaching mode.

However, despite the generally positive attitude toward e-learning shown by both teachers and students, the Web surveys revealed that e-learning was adopted only in a fairly limited way; in particular, the use of online discussions was notably infrequent. This is puzzling as the asynchronous nature of online discussions in e-learning, which removes the limitation of time and place of traditional face-to-face learning, is regarded as one of the major advantages of e-learning. Why is it so that online discussion is not popular in Hong Kong?

This puzzle and other questions arising from studying the online survey results prompted the researcher to seek an additional source of data to provide answers to the reasons behind the apparent lukewarm adoption of e-learning, or more specifically the barriers to greater diffusion of e-learning in Hong Kong tertiary education.

As explained in *Chapter Four, Methodology and Methods*, there were two parts in this stage of data collection; namely, the in-depth interviews and the follow-up questionnaire survey of the teachers and teacher-researchers in e-learning.

Part 1 - The In-depth interviews

At the heart of this stage of the enquiry was a series of interviews with four experienced teachers from CLL and five teacher-researchers (experts in e-learning) from CLL and two local universities known to be active in deploying e-learning in their courses. The interviews were organized to seek the participants' views on the benefits and impact of e-learning, and more importantly, the barriers to greater adoption of e-learning in Hong Kong. In particular, they were asked why, in their view, online discussion, being an important part of e-learning, had been largely under-deployed.

1. **Background of the participants**

Of the total nine successfully conducted interviews, five were with teacher-researchers and four with teachers. All participants were ethnic Chinese who were fluent in both Chinese and English. Two of the nine participants were female. Although some of the participants held professorial positions and most (7) of them doctoral degrees, in order to reduce the risks of compromising confidentiality of their true identities, they are all referenced as "Mr." or "Ms.", as the case may be, in the transcripts and throughout this chapter.

Their associations with tertiary educational institutions and the duration of each interview are as follows:

Institution	Teacher	Teacher-researcher	Duration of interview (minutes)
CLL	Mr. B (Full-time) Mr. C (Full-time) Mr. O (Part-time) Ms. W (Part-time)		80 70 75 160
		Mr. F	120
University A		Mr. K Ms. Y Mr. S	105 48 73
University B		Mr. A	127
Total	4	5	On average 95 min per interview

Table 6.1: Interview Participants Association with Tertiary Education Institutions and Duration of Interviews

Teachers

All four teachers were from CLL, of whom two were full-time teachers. These two full-time teachers were known to the author of this thesis prior to the interviews. One had a doctoral degree in the discipline of education and one in the field of medical science. The brief personal backgrounds of the four teachers (all from CLL) who participated in the interviews are presented in **Appendix I**.

Teacher-researchers

All five teacher-researchers were full-time academic staff of local tertiary educational institutions and held doctoral degrees in the related disciplines of education, IT, or information science. All of them have published extensively in the general area of e-learning, including journal articles and books. Most were also active in academic and professional activities relating to e-learning such as members of editorial boards of refereed journals in e-learning, blended learning, web-based learning, and

members of organizing committees or programme committees of international conferences on e-learning. Brief descriptions of the background of the five teacher-researchers who participated in the interviews are also in **Appendix I**.

All five teacher-researchers were either former or current colleagues of mine. On the one hand, their willingness to spend time for the interviews was unavoidably influenced by our personal friendship and professional association. On the other hand, being friends and colleagues also seemed to motivate them to give serious effort in providing insightful comments and useful suggestions for improvements in the refinement of the follow-up survey questionnaire.

In addition to being teachers and researchers in the field of e-learning, two of them held key positions in the institution-wide administration, development, and support of e-learning for their respective universities.

2. Main Questions discussed with interview participants

The participants were asked to give their views on e-learning in relation to the following four main questions.

1. How would you describe your experience in using e-learning in your teaching or in your own study in comparison with conventional classroom face-to-face teaching or learning?
2. How do you see the benefits and impact of e-learning on you and on your students?
3. What do you see are the barriers to greater adoption of e-learning in Hong Kong?
4. To what extent do you think that the predominant language of the Internet, English, has been a barrier to their e-learning, given that English is a second language to them?

These four main questions are obviously closely related. The benefits of e-learning have been fully documented in the relevant literature. Whether such benefits are equally applicable to Hong Kong is the focus of the first two questions. There must be some impact of e-learning, especially in the context of Hong Kong; otherwise there should be no barriers to its diffusion in Hong Kong, thus the second half of the second question. The third question on the perceived impact specific to the Hong Kong context is perhaps the most important question with respect to the whole research project. The fourth question aims to test one of my main concerns with e-learning for Hong Kong; namely, the dual language issue (or the common code-mixing phenomenon) unique in Hong Kong as a potential barrier to greater diffusion of e-learning.

Based on the comprehensiveness of the participants' answers to the above questions, supplementary questions such as the following were also asked to clarify or pursue the points made by the participants further:

1. Do you think the benefits and impacts perceived by the teachers for their students are realized in general? If not, why?

2. Are the learners fully aware of the benefits and impacts of e-learning on them, or to others close to them such as family members? How do they cope with or minimize any negative impacts of e-learning?

3. What are the positive and negative impacts of e-learning on teachers? Do you agree that the adoption of e-learning in HK is significantly behind other developed countries? Why do you think this is so?

4. Is age a barrier to greater adoption of e-learning? Are there differences between

older and younger learners in Hong Kong in terms of their perceived benefits and impacts to be derived from e-learning?

3. Analysis of results obtained from the in-depth interviews

The total time spent on the interviews was over 14 hours with an average of about 95 minutes each. The audio recording of each interview was transcribed into text and supplemented as necessary from hand-written notes taken during the interviews. The draft transcripts were then sent to the participants for verification and clarification and, if necessary, modification. After one or two iterations of review and modifications, their approvals were then sought. Their approvals served to signal that they accepted the transcripts as reasonable records of their views expressed during their interviews.

It should be pointed out that although the text of the transcripts had to be produced in English, all conversations in the interviews were conducted mainly in a mixed-code fashion; that is, Chinese (the Cantonese dialect) mixed with technical terms in English in the discussions. In other words, the transcription process also involved translation from Chinese to English. This code-mixing is typical in Hong Kong [see Biggs and Watkins (1993), Chan (1993), Cheng (1993), Lin (2000)] and perhaps epitomized one of the dilemmas with e-learning that this research aims to explore; namely, whether the common practice of code-mixing of English and Chinese presents some barriers to a fluid online discussion. This issue will be examined in greater detail in later sections of this chapter under *Barriers to greater diffusion of e-learning: Special Issue 1 – Language issues.*

After approval by the respective participant, each transcript then became the equivalent of his or her personal assessment of the current state of play of e-learning in terms of the benefits and impact of e-learning, and of barriers to greater diffusion in the context of Hong Kong tertiary educational institutions. A sample transcript of one of the interviews is presented in **Appendix J**.

The method of data analysis employed for this stage is basically a more inductive approach; that is, there is no pre-fabricated "start list" of codes prior to fieldwork that was derived from an adopted conceptual framework. Instead, a "grounded" approach (Miles & Huberman, 1994) originating from the work of Glaser and Strauss was employed. Codes or themes were allowed to emerge entirely from the transcript of the interview with an open mind and attention to the code in context. The method of analysis employed is an iterative process that involves searching for patterns, regularities in the data, and similarities and differences of themes by performing coding and re-coding (stepwise refinement of coding) of such similarities and patterns.

After the informants had verified their transcripts, the transcripts were then reviewed line by line with identified themes written in the margin and relevant words underlined with different colour highlighters to show different categories. These identified themes and subthemes were then reviewed and revised in context of and in comparison between the transcripts. Such revisions and regrouping of the themes then resulted into a set of refined themes and subthemes. This process which Creswell (1998; p.143) referred to as the "Data Analysis Spiral", was repeated until a structure of manageable size emerged (Miles & Huberman, 1994) with meaningful themes and subthemes evolved.

The analysis of the content of the nine interview transcripts was conducted with a focus on concepts (conceptual analysis) to detect major themes and subthemes raised in the interviews. Although not based on "models", Bates's ACTIONS model for the institutions (1995), Muganias' seven e-learning barriers model for the employees (2003), and Muilenburg and Berge's (2005) model of student barriers were taken as general references. Relevant themes and sub-themes that emerged from the conceptual analysis were adopted as independent variables in connection with the already adopted dependent variable —the barriers to diffusion of e-learning in Hong Kong tertiary education. These variables became the basic elements of the framework for analysis of this study.

This part of the data analysis focused on detecting the existence of certain views or opinions relating to the research questions. Although frequency counts of the presence of such views were also recorded (see Table 6.2a & 6.2b below), the formulation of the framework was based merely on the presence of such views, irrespective of how high or low the frequencies were in order to ensure that all participants in the follow-up questionnaire survey had a chance to respond to all the views collected from the in-depth interviews. Table 6.2a presents the themes and sub-themes emerging from the initial coding of the transcripts from the in-depth interviews. Table 6.2b presents the results (intermediate coding) of a major refinement of the themes and sub-themes that show an intermediate state of the evolution. Final regrouping of the themes and sub-themes and further refinements resulted in an adopted framework (Table 6.2c) for subsequent analysis as presented in the following sections.

Themes and sub-themes Emerged from Interviews (Initial coding)

Themes and Sub-themes	Frequency count by Interview Participants									Total
	B	K	F	C	O	Y	W	A	S	Count
1. Technology										
1.1 Inadequate, not attractive technology Vs convenience of anytime access to information	3	2	6	11	5	6	1	15	2	51
1.2 Distraction, not user friendly / hard to manage / misuse	0	8	0	4	4	0	2	3	0	21
1.3 Change of role for teachers and students	1	1	2	0	0	3	0	11	3	21
1.4 Definition of e-Learning/ online discussions/ blended learning	0	6	3	1	2	2	1	4	1	20
1.5 Insufficient technical support / insufficient training	0	6	1	1	1	0	3	3	3	18
1.6 Impact on students and teachers/ change relationship between them	0	0	0	0	0	0	0	17	0	17
2. Cost / Economy of money and time										
2.1 Time cost, extra workload, save time, avoid paper work	5	6	5	6	4	11	9	3	4	53
2.2 Institution policy / attitude / strategy / support	2	5	1	3	1	11	0	8	8	39
2.3 Learner's transportation cost reduced / cost of time to dealing with paper work	0	1	8	2	3	4	3	1	4	26
2.4 Attitude of teachers	3	3	0	1	1	1	0	2	1	12
2.5 Spending on new technology, aiming to reduce cost of teaching	0	0	1	3	0	0	0	1	6	11
3. Learning culture / Pedagogy Differences										
3.1 Pedagogy	4	1	10	0	0	5	1	22	2	45
3.2 Assessment oriented, indirectly linked (projects) to marks	2	4	11	1	7	5	2	5	1	38
3.3 Prefer self-study Vs Prefer group-study, collaborative learning, interaction with others	8	3	2	2	1	3	7	4	2	32
3.4 Culture: Teacher centered (passively receiving "information") Vs student-centered	3	2	4	2	0	1	1	10	4	27
3.5 Facilitates team teaching, more dynamic teaching	1	2	6	2	0	1	1	0	1	14
3.6 At ease with computer technology but not at ease doing serious academic work online	2	1	3	0	3	2	2	1	0	14
3.7 Greater room for deep thinking / deep learning	2	4	2	0	0	0	3	0	0	11
3.8 Instant gratification, positive reinforcement	1	1	1	0	0	0	2	1	0	6
4. Language										
4.1 English as a second language	0	4	2	2	2	0	5	5	3	23
4.2 Social language Vs Academic language	0	1	2	2	0	2	2	6	3	18
4.3 Local culture of using mixed language	0	2	1	0	0	4	2	3	3	15
4.4 Use of Language tools	0	1	0	0	0	2	1	4	0	8
5. Interactive / Communication										
5.1 More Vs less opportunity for instructions	3	2	1	2	5	4	0	2	1	20
5.2 Helps interaction with learning materials, teachers, other students	1	2	1	0	0	2	3	7	0	16
5.3 Spontaneous interaction Vs carefully prepared communication	0	1	0	0	3	4	5	1	0	14
5.4 More interesting discussions or interaction	2	4	0	0	0	1	1	1	0	9
5.5 Open Vs hidden communication	0	2	1	1	2	0	0	1	0	7
5.6 Speed of communication	0	0	2	2	1	0	0	0	0	5
5.7 Introverts or loners find socializing online easier/ more opportunity for socialization	0	1	0	0	1	0	0	1	1	4
6. Personal & Social Condition										
6.1 Age difference: younger learners [net generation] (more e-learning ready) Vs older learners (less comfortable with new technologies)	2	6	7	2	5	2	3	5	1	33
6.2 Self-disciplined / self-motivated	6	2	2	1	0	1	0	0	0	12
6.3 Family condition – single/ married/ married with (young) children	1	0	2	3	2	1	0	0	0	9
6.4 Home physical environment for study	0	0	0	0	0	4	0	0	1	5
Total Count	52	84	87	54	53	82	60	147	55	674

Table 6.2a Themes and Sub-themes emerging from in-depth interviews (initial coding)

Themes and sub-themes Emerged from Interviews (Intermediate coding)

Themes and Sub-themes	Frequency count by Interview Participants									Total
	B	K	F	C	O	Y	W	A	S	Count
1. Technology										
1.1 **advantage of technology**: efficiency & richness/ time space disassociation/ flexible course materials updating / anytime anyplace access to information / full discussion record/ less paper / great information depository	2	2	6	11	5	6	1	14	2	49
1.2 **disadvantage.**: distraction/not attractive/not user friendly/hard to manage/time-consuming/misuse/PP poison	0	8	0	5	4	0	2	3	0	22
1.3 **changing roles for teachers and students**: resistance to such changes	1	1	2	0	0	3	0	12	3	22
1.4 **definition** of e-Learning: online discussions/ / blending technology in teaching/ optional as add-on only	1	6	3	1	2	2	1	4	1	21
1.5 **barrier**: not technology/insufficient support/lack of e-learning experience/no e-exam/QA issue/no apparent need	0	6	1	1	1	0	3	5	3	20
1.6 **changing relationship;** between students and teachers	0	0	0	0	0	0	0	14	0	14
2. Cost / Economy of money and time										
2.1 to **teachers**: extra workload/ less stable course/efficiency/effectiveness/flexibility gain /no incentives/ /monitoring student work	5	7	5	6	4	11	9	3	4	54
2.2 organization **policy**: implementation strategy/ requirements & support/ reward scheme/ change management	2	4	1	3	1	11	0	7	8	37
2.3 to **learners**: efficiency gain / transportation/ spend more time/ flexibility of time and pace/hard on eyes/ no gain	0	1	8	2	3	4	3	1	4	26
2.4 **teachers and students have different perspectives and views:** on impact and benefits	3	3	0	1	1	1	0	2	1	12
2.5 to **institutions**: investment on technology/ higher cost/ economy of scale/ diversification/ expansion	0	0	1	3	0	0	0	1	6	11
3. Learning culture / Pedagogy Differences										
3.1 **pedagogy differences**: degree of blending of technology/ online work/ choice/ cater for individual's ability	4	0	10	0	0	3	1	22	2	42
3.2 **assessment-oriented:** assessment of online discussions must be compulsory/ all about marks and exams	2	4	11	1	7	5	2	4	1	37
3.3 **prefer face-to-face**: considers a right Vs self-motivated/ parental influence/ lack socialization/ student attitude	5	4	2	2	1	3	7	4	2	30
3.4 **learning culture**: Teacher-centered Vs student-centered/self-directed/different expectations/HK education culture	3	2	4	2	0	2	1	10	4	28
3.5 **facilitates/ expands teaching & learning**: team teaching/ collaborative learning/ constructivist perspective/ effectiveness/ emphasis on course design	2	3	6	2	0	2	1	0	1	17
3.6 **deep learning:** facilitates deep thinking & deep learning/ time to think through	2	6	2	0	0	0	3	0	0	13
3.7 **HK culture**: Chinese culture/ e-learning as add-on / utilitarianism in learning/ pragmatism/f2f more value	2	0	3	0	3	2	2	1	0	13
3.8 **attitude of teachers**: perception of role/utilitarianism in teaching/prior e-learning experience/planning	0	0	5	0	2	0	5	1	0	13
3.9 **positive reinforcement**: instant gratification/ more interesting learning/ improve confidence & performance	2	1	1	0	0	0	2	1	0	7
4. Language										
4.1 **academic language Vs social language**; written Vs oral language proficiency/ both English & Chinese barriers	0	1	2	2	0	2	3	6	3	19
4.2 **English as a second language:** not barrier/use tools/supports globalization/avoid written work/ PPP/handicap	0	3	1	2	0	0	6	6	1	19
4.3 **mixed language:** local culture/ prefer spoken language over written/ social language for online not academic work	0	2	1	0	0	3	2	3	3	14
4.4 **Chinese as an academic language**: lack of high quality online academic resources in Chinese/ harder to input	0	0	0	0	0	1	0	0	0	1
5. Interactive / Communication										
5.1 **carefully prepared communication Vs spontaneous interaction:** less pressure/suit shy students/democratic	0	2	0	1	3	4	6	3	0	19
5.2 **interaction with other students:** more open communication & sharing/ form private study group/ show-off	4	3	1	1	2	3	0	3	0	17
5.3 **interaction with teachers/** use emails/ no motivation / no need/ not cooperating with teachers	0	0	1	1	5	3	1	3	1	15
5.4 **interaction with learning materials:** refer to materials before posting on Forum/ improve reading & thinking	0	2	1	0	0	0	2	1	0	6
5.5 **socializing online:** actually more opportunity for socialization/ find it easier online/ identity less visible	2	1	0	0	1	0	0	1	1	6
5.6 **greater speed and volume of communication**: need good time management/ time-consuming/ no time	0	0	2	2	1	0	0	0	0	5
5.7 **lurking:** missing out on interesting interaction/ hard to express oneself thru a machine	0	1	0	0	0	1	1	1	0	4
6. Personal & Social Condition										
6.1 **age difference**: little difference/ natural for younger learners [Net Generation]/ greater need for socialization/ maturity for online work/ more work experience/ health condition/gender difference/writing skill difference	2	6	7	2	5	2	3	4	1	32
6.2 **motivation & education background**: self-disciplined / self-motivated Vs external motivation/ pressure	7	2	2	1	0	1	0	0	0	13
6.3 **impact on social or family life:** little impact/ some impact/ depends on individuals	0	1	0	2	5	0	0	0	0	8
6.4 **family**: married/ married with (young) children/ women make sacrifice for others/ involve children in learning	1	0	2	1	2	1	0	0	0	7
6.5 **home environment:** suitability for study/ shared use of computer/ broadband connection/ space	0	0	0	0	0	4	0	0	1	5
Total Count	52	82	91	55	58	80	67	140	53	678

Table 6.2b Themes and Sub-themes emerging from in-depth interviews (intermediate coding)

4. A Framework for Analysis - themes and sub-themes that emerged from the interviews

After the conceptual analysis process, those concepts provided by the participants in the form of responses and comments in respect of each of the research issues evolved into 10 themes and 20 sub-themes. Together, 25 individual and unique concepts about e-learning emerged. They formed a simple framework for further enquiry in the form of a follow-up questionnaire survey (the follow-up questionnaire survey). In the follow-up survey, a small cluster of statements relating to each one of these 25 concepts of e-learning were formulated to enquire into the participants' acceptance or rejection of these statements. Summaries of responses of the 25 clusters were regarded as the collective view of the participants towards the 25 concepts. This framework, which is shown in **Table 6.2c *Intermediate coding evolved to framework,*** shows the evolution into a framework as well as the pervasiveness of each key concept among the informants. **Table 6.2d A Framework for Analysis,** presents the final product in a structured form that was used for subsequent analysis and observations for conclusions.

Table 6.2C : Intermediate coding Evoled to Framework

Themes and Sub-themes	Total Count	Framework for Themes and Sub-themes Emerged		
		Research Question	Theme	Sub-theme
1. Technology				
1.2 **advantage of technology**: efficiency & richness/ time space disassociation/ flexible course materials updating / anytime anyplace access to information / full discussion record/ less paper / great information depository	49	Benefits of e-learning	(1) Benefits to the learners (2) Benefits to the teachers	-
1.3 **disadvantage.**: distraction/not attractive/not user friendly/hard to manage/time-consuming/misuse/PP poison	22	Impact or disadvantages of e-learning	(1) Impact on the learners (2) Impact on teachers	-
1.6 **changing roles for teachers and students**: resistance to such changes	22	Barriers to greater adoption of e-learning in HK	General barrier	Teacher and student attitude
1.1 **definition** of e-Learning: online discussions/ / blending technology in teaching/ optional as add-on only	21	Barriers to greater adoption of e-learning in HK	General barrier	Institution readiness
1.4 **barrier**: not technology/insufficient support/lack of e-learning experience/no e-exam/QA issue/no apparent need	20	Barriers to greater adoption of e-learning in HK	General barrier	(1) HK education culture (2) Institution readiness (3) Teacher and studnt attitude
1.5 **changing relationship;** between students and teachers	14	Barriers to greater adoption of e-learning in HK	General barrier	Teacher and student attitude
2. Cost / Economy of money and time				
2.4 to **teachers**: extra workload/ less stable course/efficiency/effectiveness/flexibility gain /no incentives/ /monitoring student work	54	Impact or disadvantages of e-learning	Impact on the teachers	-
2.1 organization **policy**: implementation strategy/ requirements & support/ reward scheme/ change management	37	Barriers to greater adoption of e-learning in HK	General barrier	Institution readiness
2.3 to **learners**: efficiency gain / transportation/ spend more time/ flexibility of time and pace/hard on eyes/ no gain	26	(1) Impact or disadvantages of e-learning (2) Barriers to greater adoption of e-learning in HK	(1) Impact on the learners (2) General barrier	- Teacher and student attitude
2.5 **teachers and students have different perspectives and views:** on impact and benefits	12	(1) Benefits of e-learning (2) Impact or disadvantages of e-learning (3) Barriers to greater adoption of e-learning in HK	(1) Benefits to the learners (2) Benefits to the teachers (3) Impact on the learners (4) Impact on the teachers (5) General Barrier	- - Teacher and student attitude
2.2 to **institutions**: investment on technology/ higher cost/ economy of scale/ diversification/ expansion	11	Benefits of e-learning Impact or disadvantages of e-learning Barriers to greater adoption of e-learning in HK	Benefits to the institutions Impact on the institutions General barrier	- - Institution readiness
3. Learning culture / Pedagogy Differences				
3.5 **pedagogy differences**: degree of blending of technology/ online work/ choice/ cater for individual's ability	42	Benefits of e-learning	Benefits to the learners	-
3.2 **assessment-oriented:** assessment of online discussions must be compulsory/ all about marks and exams	37	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Accuracy and assessment
3.3 **prefer face-to-face**: considers a right Vs self-motivated/ parental influence/ lack socialization/ student attitude	30	Impact or disadvantages of e-learning Barriers to greater adoption of e-learning in HK	Impact on the learners General barrier Special issue - 2 Online discussion and interactions	- (1) HK education culture (2) student attitutde Socializing online

Table 6.2C : Intermediate coding Evoled to Framework (Cont'd)

Themes and Sub-themes		Total Count	Framework for Themes and Sub-themes Emerged		
			Research Question	Theme	Sub-theme
3.1	**learning culture**: Teacher-centered Vs student-centered/self-directed/different expectations/HK education culture	28	(1) Benefits of e-learning (2) Impact or disadvantages of e-learning (3) Barriers to greater adoption of e-learning in HK	(1) Benefits to the learners (2) Benefits to the teachers (3) Impact on the learners (4) Impact on the teachers (5) General Barrier	- - (1) HK education culture (2) Teacher & student attitutde
3.4	**facilitates/ expands teaching & learning**: team teaching/ collaborative learning/ constructivist perspective/ effectiveness/ emphasis on course design	17	Benefits of e-learning	(1) Benefits to the learners (2) Benefits to the teachers	-
3.6	**deep learning**: facilitates deep thinking & deep learning/ time to think through	13	Benefits of e-learning	Benefits to the learners	-
3.7	**HK culture**: Chinese culture/ e-learning as add-on / utilitarianism in learning/ pragmatism/f2f more value	13	Barriers to greater adoption of e-learning in HK	General barrier	(1) HK education culture (2) Teacher & student attitutde
3.9	**attitude of teachers**: perception of role/utilitarianism in teaching/prior e-learning experience/planning	13	Barriers to greater adoption of e-learning in HK	General barrier	(1) HK education culture (2) Teacher attitutde
3.8	**positive reinforcement**: instant gratification/ more interesting learning/ improve confidence & performance	7	Barriers to greater adoption of e-learning in HK	(1) General barrier (2) Special issue 3 - personal and social conditions	Student attitutde Self-motivation
4. Language					
4.1	**academic language Vs social language**: written Vs oral language proficiency/ both English & Chinese barriers	19	Barriers to greater adoption of e-learning in HK	Special issue 1 - Language issue	Academic language Vs social language
4.3	**English as a second language**: not barrier/use tools/supports globalization/avoid written work/ PPP/handicap	19	Barriers to greater adoption of e-learning in HK	Special issue 1 - Language issue	Use of English in e-learning
4.2	**mixed language**: local culture/ prefer spoken language over written/ social language for online not academic work	14	Barriers to greater adoption of e-learning in HK	Special issue 1 - Language issue	Local culture of mixing languages
4.4	**Chinese as an academic language**: lack of high quality online academic resources in Chinese/ harder to input	1	Barriers to greater adoption of e-learning in HK	Special issue 1 - Language issue	Use of Chinese in e-learning
5. Interactive / Communication					
5.1	**carefully prepared communication Vs spontaneous interaction**: less pressure/suit shy students/democratic	19	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Carefully prepared communication Vs spontaneous
5.3	**interaction with other students**: more open communication & sharing/ form private study group/ show-off	17	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Interaction between students
5.2	**interaction with teachers**/ use emails/ no motivation / no need/ not cooperating with teachers	15	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Interaction between students and their teachers
5.4	**interaction with learning materials**: refer to materials before posting on Forum/ improve reading & thinking	6	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Interaction with e-learning materials
5.7	**socializing online**: actually more opportunity for socialization/ find it easier online/ identity less visible	6	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Socializing online
5.5	**greater speed and volume of communication**: need good time management/ time-consuming/ no time	5	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Greater volumn of communication
5.6	**lurking**: missing out on interesting interaction/ hard to express oneself thru a machine	4	Barriers to greater adoption of e-learning in HK	Special issue - 2 Online discussion and interactions	Lurking
6. Personal & Social Condition					
6.1	**age difference**: little difference/ natural for younger learners [Net Generation]/ greater need for socialization/ maturity for online work/ more work	32	Barriers to greater adoption of e-learning in HK	Special issue 3 - personal and social conditions	Age difference
6.4	**motivation & education background**: self-disciplined / self-motivated Vs external motivation/ pressure	13	Barriers to greater adoption of e-learning in HK	Special issue 3 - personal and social conditions	Self-motivation
6.5	**impact on social or family life**: little impact/ some impact/ depends on individuals	8	Barriers to greater adoption of e-learning in HK	Special issue 3 - personal and social conditions	Family condition
6.2	**family**: married/ married with (young) children/ women make sacrifice for others/ involve children in learning	7	Barriers to greater adoption of e-learning in HK	Special issue 3 - personal and social conditions	Gender difference / Family condition
6.3	**home environment**: suitability for study/ shared use of computer/ broadband connection/ space	5	Barriers to greater adoption of e-learning in HK	Special issue 3 - personal and social conditions	Home environment
	Total Count	678			

Research Question	Theme	Sub-theme	Frequency count by Interview Participants									Total
			B	K	F	C	O	Y	W	A	S	Count
Benefits of e-learning	1. Benefits to the institutions		0	0	1	1	0	0	0	1	4	7
	2. Benefits to the learners		9	9	29	12	5	13	9	33	11	130
	3. Benefits to the teachers		4	3	3	3	3	2	0	4	2	24
Impact or disadvantages of e-learning	4. Impact on the institutions		0	0	0	2	0	0	0	0	2	4
	5. Impact on the learners		2	9	0	6	0	0	1	0	0	18
	6. Impact on the teachers		6	7	5	7	8	11	10	7	5	66
Barriers to greater adoption of e-learning in HK	General barriers	7. HK education culture	4	0	2	1	3	4	4	8	0	26
		8. Institution readiness	3	16	5	5	3	13	2	12	12	71
		9. Teacher & student attitude	5	9	14	2	5	7	13	40	5	100
	Special issue 1 – language usage	10. Academic language Vs social language	0	1	2	2	0	2	3	6	3	19
		11. Local culture of mixing languages	0	2	1	0	0	3	2	3	3	14
		12. Use of English in e-learning	0	3	1	2	0	0	6	6	1	19
		13. Use of Chinese in e-learning	0	0	0	0	0	1	0	0	0	1
	Special issue 2 – online discussions and interactions	14. Carefully prepared communication Vs spontaneous interaction	0	2	0	1	3	4	6	3	0	19
		15. Interaction between students	4	3	1	1	2	3	0	3	0	17
		16. Interaction between students and their teachers	0	0	1	1	5	3	1	3	1	15
		17. Accuracy and assessment	2	4	11	1	7	5	2	4	1	37
		18. Interaction with e-learning materials	0	2	1	0	0	0	2	1	0	6
		19. Greater volume of communication	0	0	2	2	1	0	0	0	0	5
		20. Lurking	0	1	0	0	0	1	1	1	0	4
		21. Socializing online	2	2	0	0	1	0	0	1	1	7
	Special issue 3 – personal and social conditions	22. Age difference	2	6	7	2	5	2	3	4	1	32
		23. Gender difference	1	0	2	1	2	1	0	0	0	7
		24. Family condition	0	1	0	2	5	0	0	0	0	8
		25. Home environment	0	0	0	0	0	4	0	0	1	5
		26. Self-motivation	8	2	3	1	0	1	2	0	0	17
			52	82	91	55	58	80	67	140	53	678

Table 6.2d A Framework for Analysis

Part 2 - The follow-up questionnaire survey

Limitations of the interviews

A major limitation of collecting data through in-depth interviews is the time constraint. Most participants are not able or willing to spend too much time with the interviewer to dig deep into the issues. Obtaining agreement from busy academics to participate in long interviews has proven to be difficult. For the present project, the topic of discussion with the participants — benefits, impact and barriers of e-learning — does cover a large space and, unavoidably, each interviewee could touch upon only certain aspects of the issues discussed. Examining the transcript of each interview may give the impression that only a partial picture is being depicted by each participant. However, this does not imply that, given more time, a fuller picture would have emerged from each interview.

Supplementing the interviews with a follow-up survey

Although the average time spent for the nine in-depth interviews at about 95 minutes was not considered short, some of the participants expressed regret that they could not go into the issues deeper or broader as they had other engagements immediately after the interviews. In fact, one of the participants (Mr. A) kindly offered a second appointment to allow sufficient time to discuss the issues that emerged in the interview properly. To supplement and triangulate the results obtained from the in-depth interviews, a follow-up questionnaire survey was therefore introduced to allow each participant the opportunity to express more completely his or her views on issues touched upon by other participants but not covered specifically in their interviews. In this respect, the nine interview participants were regarded as a panel of experts and their collective views on certain issues about e-learning were sought

through a simple questionnaire. This questionnaire survey is referred to as a "follow-up survey" with the interview participants. The survey instrument was developed based on the framework (**Table 6.2c**) distilled and crystallized from the concepts that emerged from the transcripts of the nine in-depth interviews. It is only a follow-up questionnaire survey and the panel members had no opportunity to discuss among themselves and be influenced by each other after expressing their individual views through the questionnaire survey. In other words, there were no iterations through controlled feedback. The complete questionnaire and the accompanying briefing document used in the follow-up survey are in **Appendix K**.

1. Conduct of the follow-up questionnaire survey

In the follow-up survey, each participant was asked to provide a personal assessment of the current state of play of e-learning in Hong Kong by giving an indication of "strongly agree", "agree", "neutral", "disagree" or "strongly disagree" to a list of 101 statements relating to the potential benefits, impact and barriers of e-learning (reworded from the 101 concepts that emerged from the interviews) in the questionnaire. These 101 statements or concepts were grouped under the three main research issues and the 10 themes and 20 sub-themes in accordance with the established framework for analysis (**Table 6.2c**).

2. The extension of the follow-up questionnaire survey with an expanded panel

As explained in the previous section, the follow-up questionnaire survey was extended to an expanded panel. The main purpose of this expansion of enquiry participants was to enhance the representativeness of the results of the process by:

- broadening the views or advice from teacher-researchers; and
- deliberately seeking out teacher-researchers from tertiary educational institutions other than the original three.

A total of 12 additional experts responded and their returns, which included both their views (agreement or disagreement) on the 101 statements and additional comments, were then compiled and analyzed together with results from the original panel. The expanded panel greatly increased the proportion of teacher-researchers, which not only expanded the representativeness of the panel (from three institutions to eight) but also resulted in researchers being the dominating voice (81% of total representation) of the group. The advantages of this skewed distribution between teachers and researchers seem to outweigh the disadvantages. The advantages are obvious:

- The teacher-researchers are likely the more knowledgeable informants in terms of the theories behind e-learning.
- The teacher-researchers are also likely the more knowledgeable informants in terms of the practice of e-learning in the wider context of Hong Kong.
- By the nature of their research work, the teacher-researchers' understanding of e-learning is likely not so limited by what they have experienced at their own institutions.

There are also disadvantages of using researchers as key informants. One of the potential disadvantages could be that the researchers are too heavily influenced by what they learned from the research work of others on certain aspects of e-learning than from their own experience, especially in relation to the Hong Kong context, and become somewhat too theoretical. However, judging from their replies and additional comments, this disadvantage does not appear to be prominent.

3. Background of experts in the expanded panel

Brief descriptions of the background of experts in the expanded panel are presented in **Appendix L**. Backgrounds of the participants in the expanded panel were similar to those of teacher-researchers of the original panel. They all:

- had substantial experience in teaching and research in e-learning
- held doctoral degrees in the related disciplines of education, IT or information science;
- had published extensively in the general area of e-learning, blended learning, or web-based learning;
- were active in academic and professional activities relating to e-learning such as members of editorial boards of refereed journals in e-learning, blended learning, web-based learning, and members of organizing committees or programme committees of international conference on e-learning.

Although most of the participants were holders of doctoral degree and some full professorial positions, in order to reduce the risks of compromising confidentiality of their true identities, they are all addressed as "Mr." or "Ms." in this chapter similar to addressing members of the original panel. The following provides some relevant background information about the 21 informants:

- Female: 4 and Male: 17
- Ethnic Chinese fluent in both English and Chinese: 19

- Holder of doctoral degree: 19
- Holder of full professorship: 3
- Holder of associate professorship: 6
- Director/ deputy director of institution-wide teaching & learning or e-learning centre/Unit: 9
- Experience as editorial board member of journals or conferences on e-learning, blended-learning or computers in education: 16
- Representing eight institutions (six universities and two colleges of tertiary education institutions)

The distribution of their institutions and their involvement in comparison with the original panel are as follows:

Institution	Interviews		Follow-up Questionnaire Survey	
	Teacher	Teacher-researcher	Original panel	Expanded panel
CLL	Mr. B (FT) Mr. C (FT) Ms. W (PT) Mr. O (PT)	Mr. F	Mr. B Mr. C Ms. W Mr. O Mr. F	Mr. Z
University A		Mr. K Mr. S Ms. Y	Mr. K Mr. S Ms. Y	Mr. M
University B		Mr. A	Mr. A	Mr. X
University C				Mr. T Mr. L
University D				Ms. J
University E				Mr. G Ms. V
University F				Mr. P
College G				Mr. R Mr. H Mr. N
Group size	**4**	**5**	**9**	**12**

Table 6.3: Distribution of the Interview Participants as Compared with Survey Participants and Their Association with Tertiary Education Institutions

Analysis and Discussion

Results obtained from the expanded panel were then combined with results of the original panel to form a combined panel of informants consisting of four teachers and 17 teacher-researchers. The returns of the 21 panel members were then compiled and analyzed using the framework shown in **Table 6.2c A Framework for Analysis**. Given the small sample size, data analysis of this combined set of data is limited to simple descriptive statistics of frequency counting on ordinal data provided by the informants (the teacher-researchers) on a scale such as "Strongly agreed, Agreed, Neutral, Disagreed, Strongly Disagreed". (Fink, 1995)

For analysis, their responses are converted into the following 5-point Likert scale:

Strongly agree	5
Agree	4
Neutral	3
Disagree	2
Strongly disagree	1

After conversion of the individual scores, an arithmetic mean was then calculated for each of the 101 statements or concepts to give an indication of the group's collective view on various aspects about e-learning. Standard deviations were also calculated to obtain a measure of dispersion of the scores. Complete scores of the follow-up questionnaire survey of the combined panel, as well as the various subsets of the combined panel, are shown in **Appendix M**.

On the whole, results of the combined panel showed reasonable convergence of views from the 21 panelists. Their responses to each of the 101 statements were then mapped into the following five categories:

Category of views by the group of participants	**Mean value of scores**	% of possible values
Positive	**4.0 – 5.0**	27%
Marginally Positive	**3.4 – 3.9**	15%
Neutral	**2.7 – 3.3**	16%
Marginally Negative	**2.1 – 2.6**	15%
Negative	**1.0 – 2.0**	27%

Table 6.4: Categories of the Mean Values of Scores in the Follow-up Questionnaire Survey

These ranges of mean scores of the five categories were chosen for the following reasons:

- For the two extremes, an average score of 4.0 or above represents an 'average' choice between "Agree" and "Strongly agree". This category, "Positive", was therefore interpreted as a signal of strong convergence of positive views toward or acceptance of the statement.

- Similarly at the opposite extreme, an average score of 2.0 or below represents an 'average' choice between "Disagree" and "Strongly disagree". Therefore, this category, "Negative", was interpreted as a signal of strong convergence of negative views towards or rejection of the statement.

- The remaining values are then divided evenly to form the three intermediate (non-extremes) categories of "Marginally positive", "Neutral" and "Marginally negative".

For the 101 statements or concepts, the overall picture shaped up as follows with different groupings of the 21 participants in the survey:

Category	Grouping of Participants	Combined panel	Original panel	Expanded panel	Teachers	Teacher-Researchers
	Group size	21	9	12	4	17
Positive		28	28	26	69	22
Marginally Positive		57	59	44	26	52
Neutral		16	14	29	6	27
Marginally Negative		nil	nil	2	nil	nil
Negative		nil	nil	nil	nil	nil
Total		101	101	101	101	101
Positive+ Marginally Positive as a % of total		84.2%	86.1%	69.3%	94.0%	73.3%
Group mean		3.7	3.8	3.6	4.1	3.6
Standard deviation		0.38	0.37	0.46	0.37	0.42

Table 6.5: The Overall Picture of the Responses of the Follow-up Questionnaire Survey

In short, through the follow-up questionnaire survey, the combined panel of 21 participants showed fairly clear convergence of views on most of the issues relating to the Benefits, Impact, and Barriers of e-learning. They indicated positive or marginally positive views on 84% of the 101 concepts relating to the three issues. It may therefore be inferred that on the whole, the participants, irrespective whether they participated in the in-depth interviews, were in general agreement with each other on the various views generated from the in-depth interviews.

It may also be observed from the breakdown by different sub-groups of the participants (original panel of 9 versus the expanded panel of 12, and the group of four teachers versus the group of 17 teacher-researchers) that the extent of agreement varies slightly with different groupings. More discussion will be presented towards the end of this chapter.

To compare the degree of convergence of their responses to the individual issues of Benefits and Impact of e-learning, and Barriers based on the framework of analysis shown in Table 6.1, the mean values relating to each of the 25 clusters of concepts are presented in Table 6.6 below. To aid viewing, the mean values of the clusters of values of 3.4 and above (Positive or Marginally Positive values) are shaded grey.

Cluster No.	Survey Question no.	Clusters of concepts	Combined panel	Original panel	Expanded panel	Teachers	Teacher-researchers
1	1-4	Benefits to the institution	4.1	3.8	4.3	4.2	4.0
2	5-17	Benefits to the learners	4.0	4.0	4.0	4.1	4.0
3	18-28	Benefits to the teachers	3.9	4.0	3.9	4.1	3.9
4	29-31	Impact to the institution	3.5	3.6	3.5	3.5	3.5
5	32-36	Impact to the learners	3.1	3.3	2.9	3.7	2.9
6	37-42	Impact to the teachers	3.6	3.9	3.3	4.2	3.4
7	43-44	Hong Kong education culture	3.4	3.2	3.6	3.6	3.4
8	45-54	Institution readiness	3.9	3.9	3.9	4.2	3.8
9	55-63	Teacher and student attitude	3.6	3.7	3.5	4.0	3.5
10	64-66	Academic language Vs. social language	3.7	3.7	3.6	4.3	3.5
11	67	Local culture of mixing languages	3.0	3.4	2.6	3.8	2.8
12	68-70	Use of English in e-learning	3.6	3.6	3.7	3.8	3.6
13	71-72	Use of Chinese in e-learning	3.4	3.5	3.3	3.5	3.3
14	73-76	Carefully prepared communication Vs. spontaneous interaction	3.8	4.0	3.6	4.4	3.6
15	77-78	Interaction between students and their teachers	4.0	4.1	4.0	4.1	4.0
16	79-80	Interaction between students	3.7	3.9	3.5	3.9	3.6
17	81-82	Interaction with e-Learning materials	3.7	3.7	3.8	3.8	3.7
18	83-84	Greater volume of communication	3.7	3.8	3.7	4.5	3.6
19	85-86	Lurking	3.6	4.0	3.3	4.1	3.5
20	87	Socializing online	3.8	3.7	3.9	3.8	3.8
21	88-92	Age difference	3.5	3.7	3.4	4.0	3.4
22	93-95	Gender difference	2.9	3.0	2.9	3.5	2.8
23	96-97	Family condition	3.4	3.6	3.2	4.5	3.1
24	98-99	Home environment	3.4	3.7	3.3	4.3	3.2
25	100-101	Self-motivation	4.1	4.1	4.0	4.6	3.9

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

Table 6.6 Mean Values of 25 clusters of Themes of the 101 Concepts in order of cluster number (by combined panel) on a 5-point scale

Among the 25 clusters of concepts presented in Table 6.6, all but three of the mean values of scores by the Combined Panel fall within the two categories of Positive (4.0 and above) or Marginally Positive (3.4 - 3.9), and the three exceptions indicated a Neutral position of the Combined Panel (2.7 – 3.3). The majority of the mean scores (73%) are in the Marginally Positive category and 15% are in the Positive category. In other words, the combined panel had a high degree of convergence of views as the members agreed or strongly agreed on 88% of the clusters of concepts tested in the Follow-up questionnaire survey. The breakdown of categories for the Combined Panel is as follows:

Category	**No. of cluster of concepts**	As a % of total 25 clusters
Positive	**4**	16%
Marginally Positive	**18**	72%
Neutral	**3**	12%
Marginally Negative	**Nil**	nil
Negative	**Nil**	nil
Total	**25**	100%

Table 6.7: Survey Results of the Combined Panel by Categories

The following more detailed analysis of the survey results will focus on responses from the Combined Panel (or simply referred to as the "Panel"), i.e., the whole group of 21 participants in the survey. Some discussion on comparisons of the results of sub-groups of the full panel will be presented towards the end of this chapter.

1. Concepts relating to the benefits of e-learning (Survey questions 1-28)

For the first theme of the research question – Benefits of e-learning – the responses given by the participants seem to be quite consistent. They showed a stronger convergence of views on suggested benefits to the institutions and to the learners of

e-learning than to the teachers. By and large, their responses indicated that their perception or expectation of benefits of e-learning for the context of Hong Kong is similar to the benefits generally referred in the literature for other regions of the world. The further breakdown by the three clusters showed:

Cluster of suggested benefits	Mean value of individual statements (concepts)			
	Positive	Marginally Positive	Neutral	Sub-total
1. Benefits to the institutions	3	1	0	4
2. Benefits to the learners	10	2	1	13
3. Benefits to the teachers	7	4	0	11
Total	20	7	1	28

Table 6.8: Mean Value of Individual Statements Relating to Benefits of e-Learning

Cluster 1 - Benefits to the institutions (survey questions 1-4)

Benefits to the institutions		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher – Researcher
	Sample size	**21**	4	17
1.	2. E-learning is the future trend of learning and all forward looking institutions should be well prepared to adopt e-learning as a common practice.	4.3	4.0	4.4
2.	1. The potential economy of scale of e-learning is a benefit to the institution.	4.2	4.5	4.2
3.	3. E-learning helps the institution to diversify and extend its reach nationally and internationally (globalization).	4.2	4.5	4.1
4.	4. E-learning helps save paper.	3.6	3.8	3.5
	Cluster mean	4.1	4.2	4.0

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

There was general agreement (all mean values above 3.4) that the informants consider the greater adoption of e-learning is beneficial to the institution concerned. Participants believed e-learning helps the institution in:

- building a positive image of being progressive and forward-looking (statement 2).
- facilitating diversification and globalization because of the breakdown of geographical limitations (statement 3).
- achieving economy of scale (statement 1) (especially in view of the significant initial investment required for the design and development of e-learning courses).

An interesting observation of the results was that the participants only accepted marginally that e-learning helps save paper. In fact, one even commented that e-learning encourages heavier usage of paper as the printing of notes, learning materials, and discussion records becomes more convenient with e-learning.

Cluster 2 - Benefit to the learners (survey questions 5-17)

Benefits to the learners			Sample Mean		
Rank	Statement No. and description		Combined panel	Teacher	Teacher - Researcher
		Sample size	21	4	17
1	7.	Learners gain flexibility of time and pace of learning.	4.5	4.5	4.5
2	8.	E-learning provides students anytime and anyplace access to information (time space disassociation).	4.4	4.3	4.5
3	17.	E-learning allows students to have access to a huge information depository.	4.4	4.3	4.4
4	16.	E-learning provides students with a full record of discussions.	4.2	4.3	4.2
5	6	Learners save time and money from reduction (or total elimination) of transportation to classes.	4.1	4.8	3.9
6	13.	E-learning, in particular asynchronous discussions, allows learners more time to think through problems and therefore facilitates deep learning.	4.1	4.3	4.1
7	5.	Learners gain efficiency and richness in their study.	4.0	3.8	4.1
8	11.	E-learning allows students to have just-in-time training, and to acquire the most update/current knowledge.	4.0	3.8	4.1
9	12.	E-learning allows students to construct their knowledge through forums or online discussion boards.	4.0	4.0	4.1
10	9.	E-learning facilitates collaborative learning.	4.0	4.0	3.9
11	10.	E-learning is more personal and caters for individual's ability.	3.7	4.3	3.5
12	14.	E-learning is more interesting and gives instant gratification to the students.	3.5	3.8	3.5
13	15.	E-learning improves confidence of students of marginal capability.	3.1	3.3	3.1
		Cluster mean	4.0	4.1	4.0

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The participants strongly agreed with almost all the items of benefits to learners as identified in the interviews. Most of the benefits to learners have been well documented in the literature and such benefits seem equally applicable to learners in Hong Kong. They agreed that e-learning has benefits of:

- Efficiency and richness in study (statement 5)
- Saves money from less transportation for classes (statement 6)
- Flexibility of time and pace of learning (statement 7)
- Anytime and anyplace access to information (statement 8)
- Facilitates collaborative learning (statement 9)
- Just-in-time learning (statement 11)
- Knowledge construction through online discussions (statement 12)
- Facilitates deep learning (statement 13)
- Provides a full record of online discussions (statement 16)
- Facilitates access to huge information depository (statement 17)

In addition, they accepted, albeit only marginally, that e-learning caters for the individual's ability (statement 10) and is more interesting (statement 14). They were more or less neutral on the suggestion that e-learning improves the confidence of students of marginal capability (statement 15). Therefore, the overall convergence of views on this theme of benefits to learners seems quite strong.

Cluster 3 - Benefits to the teachers (survey questions 18-28)

Benefits to the teachers		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher – Researcher
	Sample size	21	4	17
1	28. E-learning provides teachers with a full record of discussions.	4.3	4.3	4.3
2	25. E-learning facilities different degree of blending of technology into teaching.	4.2	4.5	4.2
3	27. E-learning facilitates flexible course materials updating for teachers.	4.2	4.3	4.2
4	21. E-learning helps the teachers to monitor their students' work.	4.1	4.3	4.1
5	24. E-learning places greater emphasis on course design and planning.	4.0	4.8	3.9
6	20. Through e-learning, teachers gain flexibility in their teaching.	4.0	4.0	4.0
7	23. E-learning supports constructivist approach to teaching and learning.	4.0	4.3	3.9
8	22. E-learning facilitates team teaching.	3.7	4.3	3.5
9	19. Through e-learning, teachers gain effectiveness in their teaching.	3.6	3.5	3.6
10	26. E-learning gives greater choice of teaching methods.	3.6	3.8	3.5
11	18. In e-learning, teachers gain efficiency in their teaching.	3.4	3.8	3.3
	Cluster mean	3.9	4.1	3.9

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

With a cluster mean value of 3.9, the participants agree strongly on 7 of the 11 suggested benefits to the teachers but only marginally on the remaining 4. More specifically, they were positive towards suggestions of:

- Flexibility in teaching (statement 20)
- Helps teachers to monitor student progress (statement 21)
- Supports constructivist approach to learning (statement 23)
- Course design and planning (statement 24)

- Facilitates different blending of technology into teaching (statement 25)
- Facilitates flexible course materials updating (statement 27)
- Provides a full record of online discussions (statement 28)

However, they only agreed marginally that e-learning helps:

- Gain efficiency in teaching (statement 18)
- Gain effectiveness in teaching (statement 19)
- Facilitates team teaching (statement 22)
- Greater choice of teaching methods (statement 26)

Whilst the participants' views on benefits to learners may be challenged as based on perception rather than personal experience, their views on the benefits of e-learning to teachers should carry a higher degree of validity as all participants are current teachers in local tertiary educational institutions, and therefore their views should be based largely on personal experience.

Comments offered by participants on benefits of e-learning

The following are some comments by the experts on the benefits of e-learning:

Ms. V:

> "E-learning is only a tool, how effective and beneficial it is to student learning depends on how teachers deploy it. E-learning cannot totally replace the teachers or face-to-face instructions, I believe."

Mr. G:

> "Some of the benefit statements are overstated or over-simplified as it all depends on the environment and resource that the learners or the education institutions may have."

Mr. M:

"Another benefit to teachers is that teachers can make use of a wide range of open education resources and/or internet resources to enrich their teaching materials/contents."

"Among many well recognized benefits of e-learning (to learners), I would count the following three are most important : (i) to enrich/enhance the students' learning experience (through a variety of materials, means of delivery, uses of multimedia, etc.), (ii) to promote collaborative learning/knowledge co-building, and (iii) to gain flexibility in time and pace of learning."

"E-learning should not primarily aim for cost saving. Hong Kong learners usually have an impression that e-learning helps institution to save costs. They also count face-to-face learning more "valuable" than e-learning, and therefore expect e-learning courses should be offered at lower tuition fees."

These remarks provided by some of the participants are in harmony with the overall results. Regarding the first comment from Ms. V, the teachers, even with a changing role from one of a sage to one of a facilitator under the e-learning mode, clearly still play a pivotal role in determining the effectiveness of the teaching and learning process and the benefits that their students may obtain. They are by no means replaced but are perhaps in a sense, 'reincarnated' with a new approach to teaching and yet with the very same raison d'être.

Mr. G was of course correct in his comment concerning individual differences among institutions. The degree of realization of the identified benefits obviously depends on the teaching environment that the institution creates and maintains for the teachers and students. But as most institutions in Hong Kong are currently operating, the teachers should have sufficient freedom to utilize e-learning to achieve most of the benefits identified from the Follow-up questionnaire survey.

The last comment by Mr. M on Open Source learning materials available on the Internet is important. Since MIT pioneered the offer of free learning resources online — OCW (MIT Open Courseware) — which includes course outlines, lecture notes, exams, references, and video components, if available, there is a strong movement among leading universities in the world to offer free learning source materials online to all to help make knowledge more accessible to the world.

Typically, a university that offers open source materials would not provide access to their teachers nor would it offer certificates. Therefore it would work as a free information depository just like Wikipedia. Interestingly, the growing access to open sources established by universities is not only of great benefit to students, but also to teachers who can make reference to these open sources to help with the preparation and enrichment of their own teaching. This, of course, will ultimately benefit their students.

Summary of benefits of e-learning

In summary, all the well-known benefits of e-learning are recognized to be equally applicable with respect to HK institutions, leaners and teachers. .

2. Concepts relating to the impact of e-learning (Survey questions 29-42)

In terms of impacts, the panel was less convinced of the suggested impacts of e-learning. The results of the 14 suggested impacts under the three clusters of institutions, learners and teachers showed:

Cluster of suggested impacts	Mean for individual statements (concepts)			
	Positive	Marginally Positive	Neutral	Sub-total
4. Impact to the institutions	0	2	1	3
5. Impact to the learners	0	1	4	5
6. Impact to the teachers	1	4	1	6
Total	1	7	6	14

Table 6.9: Mean Value of Individual Statements Relating to Impact of e-Learning

The following is a closer look at their views on each of the 3 cluster of issues:

Cluster 4 - Impact to the Institutions (survey questions 29-31)

Impact to the institutions		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher – Researcher
	Sample size	**21**	4	17
1	31. Teachers and students have different perspectives and views on impact and benefits of e-learning which created different expectations of learning outcome.	3.8	3.8	3.8
2	29. The high cost of investment on technology is an impact on the institution.	3.5	3.5	3.5
3	30. E-learning is more costly than face-to-face (f2f) teaching.	3.3	3.3	3.4
	Cluster mean	3.5	3.5	3.5

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The participants were not convinced that e-learning is more costly than face-to-face teaching (statement 30) but were in marginally positive agreement over:

- the high cost of e-learning creates impact on the institution (statement 29)
- different expectations of teachers and students on impact and benefits of e-learning also creates impact (statement 31)

Cluster 5 - Impact to the learners (survey questions 32-36)

Impact to the learners		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher - Researcher
	Sample size	**21**	4	17
1	33. E-learning is hard on the eyes because of long hours of looking at the computer display.	3.4	4.0	3.2
2	34. E-learning technology currently in use is not attractive by comparison with technology used by learners elsewhere such as online games.	3.2	4.0	3.0
3	32. It is a distraction to learning when substantial input with heavy typing is involved in online discussions.	3.0	3.5	2.8
4	36. Some of the technologies used in e-learning are not purpose-designed for learning, and therefore are not suitable. E.g. PowerPoint was originally designed for making business presentations but has now conditioned students to learn in brief bullet points only.	3.0	3.5	2.8
5	35. E-learning is more time-consuming for the learner than traditional f2f learning.	2.9	3.5	2.8
	Cluster mean	3.1	3.7	2.9

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The participants were in marginal agreement over statement 33 (e-learning is hard on the eyes because of long hours of looking at the computer screen) but were basically neutral on the remaining four suggested impacts on learners. Namely:

- heavy input in online discussions (statement 32)
- not attractive to learners in terms of its technology (statement 34)
- more time-consuming for the learners (statement 35)
- e-learning is not using appropriate purpose-designed technology (statement 36)

Cluster 6 - Impact to the teachers (survey questions 37-42)

Impact to teachers		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher – Researcher
	Sample size	21	4	17
1	37. E-learning generates extra workload for the teachers.	4.1	4.5	4.0
2	41. HK students nowadays are more demanding. If teachers do not post 'correct' or precise comments online, their students would complain. Therefore, teachers will have to be much more careful with what they post online than what they say in the classroom.	3.8	4.0	3.8
3	40. E-learning is more time-consuming for the teachers as the courses require more frequent updating because contents of external web sites are not stable.	3.5	4.5	3.3
4	38. E-learning courses tend to be less stable than f2f delivered courses for the teachers. E.g. need to check and repair broken links of external references.	3.4	4.0	3.3
5	42. HK students are very passive in their learning. They want the teachers to give them simple notes and to explain the concepts clearly to them. As students do not want to take charge of their own learning, e- learning actually involves much more work for the teachers.	3.4	4.3	3.2
6	39. E-learning is harder to manage than f2f learning.	3.2	4.0	3.0
	Cluster mean	3.6	4.2	3.4

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The participants were positive only on one suggested impact – e-learning generates extra workload for the teachers (statement 37) and were neutral on one — e-learning is harder to manage than traditional face-to-face learning (statement 39). They were in marginal agreement with the remaining four concepts:

- e-learning courses are less stable than face-to-face courses (statement 38)
- e-learning is more time-consuming (statement 40)
- HK students are more demanding nowadays. If teachers do not post 'correct' or precise comments online, their students would complain. Therefore, teachers will have to be much more careful what they post online than what they say in the classroom (statement 41).
- HK students are very passive in their learning. As students do not want to take charge of their own learning, e-learning actually involves more work for the teachers (statement 42)

Summary on impact of e-learning

To summarize, the group accepted marginally that e-learning leads to less stable courses, is more time-consuming, demands greater attention in posting online discussions, and passive students generate more work for them. But they were convinced that e-learning generates extra workloads for them and is clearly an impact. Regarding potential impact on their students, they accepted that e-learning might be harder on the eyes, but were not sure about e-learning generating heavier input, being unattractive and more time-consuming, and using inappropriate technology. They accepted marginally that high cost of e-learning and different expectations of the teachers and the students might become an impact on the institution.

Comments offered by participants on impacts of e-learning

Some experts also provided the following comments on the impacts of e-learning:

Ms. V:

"Some of the questions about updating are irrelevant as all good teachers will and should update their teaching materials and learning activities in order to help students achieve the stated learning outcomes."

Mr. T:

"Nowadays, e-learning is a common practice for higher education institutes in the world. It supplements traditional classroom face-to-face learning. It helps teachers to distribute teaching materials quickly, and helps students [in] getting responses from their coursework submission quickly. In fact, there is so much information on the web such that it is much easier for students to learn by themselves when compared with decades ago. As a result, teachers become facilitators rather than information providers. In other words, a teacher's role is to help students understand and apply teaching materials, not just providing teaching materials, which can be downloaded in the internet. In general, hybrid learning is a common practice in teaching because it combines f2f classroom learning with e-learning."

Mr. O:

"for statement 41, I think and believe that teachers would have to be equally careful with what they say in class as well as with what they write in an email or any forum of communication involving dissemination of knowledge to students. However, in a classroom in front of students, the teachers might not have the time to cover the 'subject' in depth, if he or she would be required to give an instantaneous response within a brief moment. But, when posting materials online, the teachers should have plenty of time to deal with the 'subject' or 'query' or any 'issue' in greater depth and breadth since he or she

would be working at his or her own time and pace without [being] under pressure or time-risk. Therefore, I disagree with the statement."

Ms. W:

"It seems that e-learning will save time for teachers in travelling from home to school. E-learning will be more time-consuming and demanding for teachers because they will have to check and reply to student's work from time to time. But, on the other hand, for f2f, teacher just walks into classroom at specific time, presenting the materials, give feedback instantly."

Ms. J:

"It is hard to give meaningful answers to a lot of these questions because they depend on a lot of different factors, including whether e-learning is seen as an add-on extra by the teacher's institution."

Mr. M:

"On Question 29: E-learning usually requires a high cost on initial investment. Decision makers of Hong Kong's institutions emphasize the short-term/immediate cost-effectiveness of e-learning (lacking a vision at a longer-term and ignoring non-monetary benefits). For this reason, the high cost of investment is somewhat considered as an impact to an institution."

"Another known disadvantage of e-learning: Lack of chance for learners (Hong Kong's learners) to practice oral presentations and spoken communications."

"It is studied in the literature that [an] excellent teacher of traditional f2f-learning may not be good at teaching in the e-learning mode. For this reason,

specialized training is required for teachers to practice e-learning. There is a lack of such training in Hong Kong."

"In Hong Kong's universities, where emphasis is usually placed on teachers' research performance instead of teaching performance, university teachers do not have strong incentives to improve their teaching. Moreover, as e-learning generates extra workloads for the teachers (Questions 37, 39 and 40), the teachers would not spend more time and efforts for e-learning."

These remarks provided by the group of participants on impacts of e-learning reflected the somewhat diverse opinions they gave against the 14 suggested impacts (grouped into three clusters) which implies a low convergence of views. It is important to note that many of them seemed to be taking a position that hybrid learning or blended learning (blending face-to-face with e-learning) is the only way to embrace e-learning. In other words, they believe that e-learning should only be blended into the conventional approach of face-to-face teaching but not as a replacement alternative. Their position is supported by a study by Bails et al. (2011) who studied the comparative effectiveness of e-learning, face-to-face learning and blended learning with a group of orthodontic undergraduates and found that blended learning is likely more effective than either face-to-face learning or e-learning alone. A similar study carried out by Lipman et al. (1999) comparing a traditional classroom course in clinical ethics with the same course supplemented by internet-based online discussions showed similar results — the students' understanding of ethical analysis was significantly higher for the class with the internet component than the traditional face-to-face class.

One participant also pointed out that without face-to-face components, students would miss the opportunity to practice their oral English. In view of the common complaint of declining standards of English of Hong Kong students, this concern about lack of opportunity of practicing oral English might be one of the important unstated concerns of this group of Hong Kong educators and perhaps to some extent reflects a common concern of the general teaching profession regarding e-learning.

A lack of appropriate incentives for teachers is identified by some experts as a major concern. That is a complicated issue as different institutions have different policies on the reward system for teachers, especially with respect to part-time teachers. No doubt as one or two of them emphasized, research remains the top priority for full-time teachers in the universities. Naturally, if e-learning is seen to be more time-consuming than face-to-face teaching and to be in direct competition for their time for research, the lack of incentives will be regarded as a negative impact. If not appropriately addressed by their institutions, no wonder such lack of incentives will become a barrier to e-learning diffusion.

3. Concepts relating to barriers to greater diffusion of e-learning in Hong Kong (Survey questions 43-101)

The participants had a fairly clear convergence of views on the general barriers to greater diffusion of e-learning in Hong Kong. Of the 21 suggested general barriers, they were either positive or marginally positive to all the suggested barriers except two to which the panel had a diverse view.

Clusters of general barriers	Positive	Marginally Positive	Neutral	Sub-total
7. HK Education culture	nil	2	nil	2
8. Institution readiness	3	7	1	11
9.Teacher & student attitude	nil	7	1	8
Total	3	16	2	21

Table 6.10: Survey Results of the General Barriers to e-Learning

They were more positive (strongly agreed with) on the following suggested barriers:

- Teacher's lack of prior e-learning experience is a barrier to greater adoption of e-learning in HK (statement 44).
- E-learning is misused when the institution or teacher forced everything online regardless of suitability (statement 61).
- Technology is not the barrier but the lack of sound planning and design in employing technology is; e.g. e-learning is not suitable for laboratory-based courses (statement 63).

They were marginally positive on 16 of the 21 general barriers. These 16 barriers are related to one of the HK education culture, institution readiness, or teacher and learner attitudes. The panel's view on the suggested barriers under these three clusters is as follows:

Cluster 7 - HK education culture (survey questions 43-44)

Hong Kong Education Culture			Sample Mean		
Rank	Statement No. and description		Combined panel	Teacher	Teacher - Researcher
		Sample size	21	4	17
1	44	The HK education culture of teacher-centred with low student self-directedness is a barrier.	3.5	3.8	3.5
2	43	The HK education culture of assessment-centric (all about marks and exams) is a barrier.	3.3	3.5	3.3
		Cluster mean	3.4	3.6	3.4

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

Regarding the HK education culture, the panel agreed (marginally positive) that the teacher-centred culture with low student self-directedness prevalent in HK is a barrier to e-learning diffusion, but was neutral on the suggestion of assessment-centric culture being a barrier. The latter may be interpreted as the panel considered an assessment-centric culture would not impact on the attractiveness of e-learning either positively or negatively.

Cluster 8 - Institution readiness (survey questions 45-54)

Institution readiness		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	54. Technology is not the barrier but the lack of sound planning and design in employing technology is, e.g. e-learning is not suitable for laboratory-based course.	4.1	4.5	4.1
2	52. E-learning is misused when the institution or teacher forced everything online regardless of suitability.	4.1	4.5	4.1
3	46. Teacher's lack of prior e-learning experience is a barrier to greater adoption of e-learning in HK.	4.1	4.3	4.1
4	51 The lack of incentives for the teachers in the existing reward system is a barrier.	3.9	4.0	3.9
5	49 The lack of an appropriate institution-wide e-learning implementation strategy is a barrier.	3.9	4.3	3.8
6	45. Insufficient administrative or technical support to the teacher is a barrier for greater diffusion of e-learning in HK.	3.9	4.3	3.8
7	50 The lack of a good institutional change management strategy and process is a barrier.	3.9	4.3	3.8
8	53. Learners have not been given proper familiarization of the e-learning technology before they start engaging in e-learning.	3.7	4.0	3.6
9	47. The current absence of satisfactory means to conduct e-assessment is a barrier.	3.7	4.3	3.5
10	48 The current lack of a good quality assurance system for e-learning is a barrier.	3.5	4.0	3.4
	Cluster mean	3.9	4.2	3.8

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

Regarding institutional readiness, or the lack of it, the panel strongly agreed that the lack of sound planning in deploying technology (statement 54), misuse of e-learning by forcing everything online regardless of suitability (statement 52) and teacher's lack of prior experience with e-learning (statement 46) are indeed barriers to e-learning diffusion.

The panel also agreed, albeit not as strongly, to the remaining seven suggested barriers, namely:

- The lack of incentives for the teachers in the existing reward system
- The lack of an appropriate institution-wide e-learning implementation strategy
- Insufficient administrative or technical support to the teacher
- The lack of a good institutional change management strategy and process
- Learners have not been given proper familiarization with the e-learning technology before they start engaging in e-learning
- The absence of satisfactory means to conduct e-assessment
- The lack of a good quality assurance system for e-learning

In particular, whilst accepting that the lack of a satisfactory e-assessment system and a good quality assurance system may hinder diffusion of e-learning, the panel did not see these as crucial as other forms of institutional readiness such as issues of adequate institutional planning, implementation, and management for the adoption of e-learning. This stand is generally in harmony with Nichols' (2008) six important factors for successful embedding for e-learning.

Cluster 9 - Teacher and student attitudes (survey questions 55-63)

Teacher and student attitudes			Sample Mean		
Rank	Statement No. and description		Combined panel	Teacher	Teacher - Researcher
		Sample size	21	4	17
1	55	The teachers' or the students' sceptical attitude about the need for e-learning is a barrier.	3.8	4.5	3.6
2	56	Effective e-learning requires acceptance of role changes for teachers and students but currently there is a general resistance to such changes among teachers and students in HK.	3.8	4.3	3.7
3	58	Student's attitude of preferring f2f learning is a barrier.	3.7	3.8	3.6
4	57	Changing roles of teachers and students in e-learning will also lead to changing relationship between the teachers and the students. Resistance to such change is a barrier to the greater adoption of e-learning.	3.6	4.0	3.5
5	61.	Student's attitude of seeking to get through a course with minimal work (utilitarianism in learning) is a barrier.	3.6	4.0	3.5
6	62.	Parents'/students' belief that e-learning is only a money saving alternative to f2f teaching for the institution is a barrier.	3.6	4.0	3.5
7	59.	Parents' or students' belief that f2f learning is a better mode of learning is a barrier.	3.5	3.8	3.4
8	63.	Teachers' attitude of delivering the instructions with minimal work (utilitarianism in teaching) is a barrier.	3.4	4.0	3.3
9	60.	Student's belief that e-learning lacks socialization is a barrier.	3.3	3.8	3.2
		Cluster mean	3.6	4.0	3.5

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

In general, the panel subscribed to eight of the suggested nine barriers relating to the attitudes of teachers and students towards e-learning. They were neutral on the suggestion that students' belief that e-learning lacks socialization is a barrier.

What they agreed were:

- Sceptical attitude of teachers' or students' about e-learning (score 3.8)
- Resistance to role changes for teachers and students (score 3.8)
- Students' attitude of preferring face-to-face learning (score 3.7)
- Resistance to change of relationship between teachers and students (score 3.6)
- Students' attitude of seeking to get through a course with minimal work (score 3.6)
- Parents'/students' belief that e-learning is only a money-saving alternative to face-to-face teaching for the institution (score 3.6)
- Parents' or students' belief that face-to-face learning is a better mode of learning (score 3.5)
- Teachers' attitude of delivering the instructions with minimal work (score 3.4)

These figures suggested agreement on most of the general barriers raised in the interviews in relation to HK education culture, institutional readiness, and attitudes of teachers and students. Also, although the HK education culture may have some bearing on the successful diffusion of e-learning, the key potential barriers to greater diffusion of e-learning are the three main stakeholders of learners, teachers, and institutions. More importantly, perhaps, is the belief that some of these suggested barriers can be overcome with proper institutional planning and support, whereas

more challengingly for the remaining barriers, it requires a change of attitude on the part of teachers and learners.

In short, the panel of experts seemed to believe some serious misunderstanding existed about e-learning and its application by the students in Hong Kong and to some extent also by their teachers. Such misunderstanding may have incubated strong prejudice in the minds of some students such as believing that e-learning is not as good as face-to-face learning, or e-learning is only a money-saving alternative to face-to-face learning, and in general being sceptical about its effectiveness. However, the students do not mind if e-learning is offered as an add-on on top of their 'entitled' face-to-face classes because any reduction of face-to-face teaching is seen as the institution's ploy to save money rather than to achieve pedagogical purposes.

As the participants were only marginally warm to the two suggested barriers somewhat unique to the HK education culture — namely, assessment-centric and teacher-centredness — it seems the system-wide education environment of Hong Kong cannot be blamed, at least not in a major way, for failure of e-learning diffusion in Hong Kong. However, it is possible that some of the informants might have interpreted the meanings of assessment-centric and teacher-centredness differently. It is unclear, for example, without a discussion among them, whether they truly had a diverse view on whether Hong Kong has an assessment-centric culture, or whether, although they were in agreement about the existence of an assessment-centric culture in Hong Kong, they do not see it as a barrier to greater diffusion of e-learning.

Regarding the two suggested barriers inherent in the current stage of development in e-learning; namely, the current absence of satisfactory means to conduct e-assessment

(survey question 47), and the current lack of a good quality assurance system for e-learning (survey question 48), any progress to overcome these problems would largely hinge on the speed of development of e-learning globally and not just locally. As reported in the May issue of *Quality Update International* (UK, Quality Assurance Agency for Higher Education, 2011), several promising developments are taking place internationally, among them:

1. In the USA, the Sloan Consortium, which is a group of institutions with a commitment to quality online learning, recently endorsed a 'quality scorecard' for the administration of online education programmes. The scorecard includes 70 quality indicators to help identify and to demonstrate to accrediting bodies, strengths and weaknesses in online learning programmes.
2. In Europe, the European Commission Lifelong Learning programme launched a Self-Evaluation of Quality in Technology-Enhanced Learning project in April 2011.
3. In the UK, the consultative group of the Open Educational Quality Initiative (OPAL) managed by Open University, UK UNESCO, European Foundation for Quality in E-Learning, and International Council for Open and Distance Education (ICDE) began its business in May 2011 to focus on 'how to support educational practices and to promote quality and innovation in teaching and learning'.
4. The emergence of more matured instruments for measurements of online learning environment (OLE) quality (Zhang, 2004).

Over time, the emergence of a more satisfactory quality assurance system for e-learning and an effective means to conduct e-assessment would seem imminent.

Comments on general barriers

Some of the participants offered the following comments on general barriers:

Mr. T:

> "Not every student likes e-learning. In particular, most HK students are passive learners. If they do not learn much in class, they will put the blame on the teachers. E-learning needs self-motivation, which is hard for them. As a result, teachers either force them to do online e-learning exercises by assessment credits marking on the outcome of exercises. Otherwise, the feedback is most likely very poor. An alternative is to make e-learning more interesting to them, such as using game approach for learning. Nevertheless, some good students will acquire much information in their learning subjects by themselves. To these students, teacher's role is to help them filter out irrelevant information. In general, passive learning attitude is the greatest barrier to e-learning on the students."

Mr. M:

> "For Questions 55 and 56: Not only parents and students but also the general public (including employers) in Hong Kong believe that face-to-face learning is a better mode of learning. For example, full-time f2f graduates are better than part-time f2f graduates, than e-learning, and distance learning graduates."

These two remarks offered by Mr. T and Mr. M are quite true in the context of the Hong Kong community. Firstly, higher education students are not used to being self-directed in their learning. They tend to be passive learners and rely entirely on their teachers for what to learn and how to learn. They are largely assessment-driven and motivated by exams and marks rather than by the pursuit of knowledge because of

curiosity. In this sense, maybe they are greatly influenced by their parents and the community as a whole to be 'pragmatic'. In other words, utilitarianism in learning by seeking to get through a course of study with minimal work seems quite wide-spread.

Secondly, the general public of Hong Kong, including employers, students and parents, tends to have a sceptical attitude towards any form of self-learning such as distance learning or e-learning. Although the engagement in lifelong learning is respected, the Hong Kong public sees it (by its many shades such as lifelong education, continuing education, or adult education) as second-rate to traditional face-to-face learning.

The School of Professional and Continuing Education of the University of Hong Kong conducts periodic surveys on the demand of continuing education in Hong Kong and one of the questions in the surveys is about preference of teaching and learning modes. In 2007, in terms of attitude towards online learning, only 40.4% of the respondents showed positive attitudes to online learning whereas 50.7% of the respondents gave a definite negative response to online learning. However, 83.9% of the respondents indicated a preference for a blended learning mode with the largest percentage of them willing to go for a 50-50 mix of online and face-to-face learning. Somewhat unexpectedly, two years later when a similar survey was conducted (HKU SPACE, 2010a), in terms of attitude towards online learning, whilst about the same percentage (40.5%) of the respondents showed positive attitudes to online learning, the percentage of respondents showing negative attitudes actually increased slightly to 51.9%. In other words, with passage of time, the popularity of e-learning did not improve even with greater accessibility of the Internet and familiarity with online information resources.

In 2009, a similar survey was conducted among HKU SPACE alumni (HKU SPACE, 2010b); that is, those who have had substantial experience of taking continuing education courses. When asked a similar question on preference of teaching and learning mode, a clear majority of 82% among the 8,510 respondents indicated a 'definitely yes' and 16% 'probably yes' to face-to-face instruction only. For blended learning, only 21% said 'definitely yes' and 53% said 'probably yes'. For purely online learning, only 6% indicated 'definitely yes' and 19% indicated 'probably yes'. As HKU SPACE has arguably the largest alumni base in Hong Kong (well over one million) , and since the School has been promoting e-learning since 2001, the low acceptance of e-learning and strong preference of face-to-face learning seem fairly representative of the general attitude of the public towards any alternative mode of learning to face-to-face learning.

This apparent student and employer attitude towards e-learning against traditional face-to-face learning may also be connected to the Screening Hypothesis, which theorizes that employers pay more attention to the reputation of the institutions where qualifications are gained rather than to the specific human capital skills acquired through learning. In their study of China's university graduate survey undertaken in 2003, Li et al. (2008) tested the screening hypothesis for the graduate job market by investigating the relationship among job search channels, educational level, and the job search results. Their finding that those at a lower educational level are more likely to choose informal channels supports the screening theory, as those with higher educational level have a stronger signal and therefore have weaker motivations to use informal channels.

In Hong Kong, e-learning and distance education in general, tend to be more actively deployed by the newer universities and lower tier institutions rather than the established research-led universities, perhaps because these institutions are more eager to signal being 'innovative' in order to gain an edge in attracting students. However, the students and the employers may associate such deployment of more flexible learning modes as being second rate rather than being innovative and therefore believe more face-to-face contact with the professors in the classrooms is a superior 'value-for-money' learning mode. Yuen et al. (2011) investigated the reasons for student drop-out in the Open University of Hong Kong (OUHK), a primarily distance learning institution and found among the reasons, three of them are associated with the perception of distance learning/ self-study being inferior to face-to-face learning:

- Dislike the distance learning study mode
- OUHK was not as prestigious as other universities
- Enrolled in a programme offered by another institutions

This negative attitude towards e-learning echoes one of the observations made in the Web surveys presented in the previous chapter. The very same point was also repeatedly mentioned by teachers and teacher-researchers in the in-depth interviews. They observed that their students were interested in accessing course learning materials online only when forced to do so or to watch online videos of tutorials or lectures when they missed the corresponding face-to-face ones. Similarly, if participation was on a voluntary basis, the participation rate for online Chat or Forum would be low. The reason given was that HK students are pragmatic and assessment-centric. They will put an effort into participating in the prescribed learning activities only if their participation will be assessed by the teachers. Those teachers who commented on this area consistently stressed that some form of assessment was

necessary to motivate students to participate in online discussions. In other words, findings in the OUHK surveys, the Web survey results, and the observations the teachers made in the in-depth interviews seemed to be in agreement with each other.

Summary on General barriers (HK culture, institution readiness and Attitudes)

In summary, institution readiness and negative attitude of students and teachers towards e-learning in comparison with face-to-face learning may be two of the strongest barriers to the diffusion of e-learning in Hong Kong.

Special issue of barriers – Language usage (Survey questions 64-72)

On the nine suggested barriers relating to language usage in Hong Kong, the panel's position was generally in agreement but not overly strong in their views. Breakdown by the four clusters is as follows:

Clusters of barriers relating to language usage	Marginally Positive	Neutral	Sub-total
10. Academic language Vs. social language	3	nil	3
11. Local culture of mixing languages	nil	1	1
12. Use of English in e-learning	3	nil	3
13. Use of Chinese in e-learning	1	1	2
Total	7	2	9

Table 6.11: Survey Results of the Language as a Barrier to e-Learning

The following section takes a closer look at the panel's view on the suggested barriers under these four clusters.

Cluster 10 – Academic language Vs. Social language (survey questions 64-66)

Academic language Vs. social language		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	64. Although Hong Kong students are comfortable with English for academic purpose, they are far less comfortable with English for social purpose. They prefer to switch back to Chinese for non-superficial social interactions.	3.9	4.3	3.8
2	65. In Hong Kong, students prefer to use Chinese in classroom discussions although English is the official medium of instructions. The dominance of written communications in e-learning makes e-learning less popular with students because it is easier for the teachers to enforce the institution's medium of instruction (in English) policy in an online forum.	3.6	4.3	3.5
3	66. The requirement of more frequent written (either in English or in Chinese) communication (for online discussions) in e-learning makes it less popular with HK students because they believe oral discussion in f2f learning is less work to them.	3.4	4.3	3.2
	Cluster mean	3.7	4.3	3.5

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The panel marginally agreed to the suggestion of English being the widely adopted academic language (mostly for written communications) with Chinese remaining both the preferred social language and the academic language for oral discussions in the classroom, makes e-learning less popular.

In other words, they agreed that whilst mix-coding of English and Chinese is quite popular with Hong Kong students, the students would prefer Chinese for social interactions. They also agreed that e-learning had its advantage for learners using

English as a second language. They also supported the notion that use of English in e-learning is somewhat limited to Academic purpose whilst Chinese is preferred for social purpose. At the same time, the dominance of written communications in e-learning makes e-learning less popular with students because it is easier for the teachers to enforce the institution's medium of instruction (in English) policy in an online forum. This makes e-learning less popular with HK students because they believe oral discussion in f2f learning is less work than online written communication.

Cluster 11 – Local culture of mixing languages (survey question 67)

Local culture of mixing languages		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher - Researcher
	Sample size	**21**	4	17
1	67. Although students in HK tend to mix English with Chinese in social occasions (mix coding) but doing academic work online using a mixed language in written form is actually harder for them. For this reason, e-learning is less popular with students.	3.0	3.8	2.8
	Cluster mean	3.0	3.8	2.8

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The informants are basically neutral to the suggestion that the popular practice of mixing English with Chinese words (mixed-coding) in academic work in a written form is harder for students and is therefore a barrier to e-learning.

Cluster 12 – Use of English in e-learning (survey questions 68-70)

Use of English in e-learning		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	68. Although English is a second language to most students, it is less of a barrier in e-learning than f2f learning because e-learning gives them the extra time and pace to use language tools (such as dictionary, thesaurus) to refine their communications.	3.8	4.0	3.7
2	69. The advantage of students being able to take their time in preparing contributions in online discussions improves their quality of work. (e.g. to use dictionary or check out references, and to cut and paste relevant materials)	3.7	4.0	3.6
3	70. As e-learning requires students to do more written work in online discussions, it helps to improve students' English writing ability.	3.4	3.5	3.4
	Cluster mean	3.6	3.8	3.6

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The use of English as the medium for instructions in e-learning was not considered a problem by the panel as they agreed that whilst English is a second language to most Hong Kong learners, the learners have the advantages of making use of language aids for online communications, which is not as convenient in a classroom. There is also the additional advantage of being able to take time in preparing contributions in online discussions to improve the quality of online communications, and to improve English writing ability.

Cluster 13 – Use of Chinese in e-learning (survey questions 71-72)

Use of Chinese in e-Learning		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	72. Many HK students find Chinese characters harder to input than English alphabets [characters] and this is one of the barriers to greater diffusion of e-learning.	3.4	3.8	3.4
2	71. There is a lack of high quality online academic resources in the Chinese language.	3.3	3.3	3.3
	Cluster mean	3.4	3.5	3.3

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The panel marginally agreed on the question of use of Chinese in e-learning that as many HK students find Chinese characters harder to input than English letters, this is one of the barriers to greater diffusion of e-learning.

However, they were largely neutral on whether there is a lack of high quality online academic resources in Chinese, which therefore became a barrier. The latter may reflect their different appreciations of availability of quality online academic resources in the Chinese language. It is also possible that they do not believe that a lack of high quality online academic resources presents a problem in e-learning diffusion because they see little demand for e-learning using Chinese as the medium of instruction in Hong Kong.

Summary on language issues as a barriers

In summary, the participants generally agreed that language usage in Hong Kong (two official languages) could be a barrier to e-learning diffusion except that the students'

habit of mixing English and Chinese was not a real problem to e-learning. Neither did they believe that there is a lack of high quality online academic resources in Chinese.

Comments offered on language usage

The following comments were offered on the language issues:

Mr. T:

> "In HK, most university students can communicate with both written English and Chinese. However, they seldom speak in English because it is not a common practice in HK. Similarly, Mainland Chinese students prefer to speak their fluent Putonghua rather than English or Cantonese. Nevertheless, language skill is essential for students' education. As a result, teachers need to promote English speaking and writing as much as possible in HK. No wonder most tertiary education institutes adopted English as the official language for both teaching and learning. Some students like to purchase Chinese translation of English text books, which is very harmful to their language skill even though it is more economical to buy Chinese books."

Mr. M:

> "For Question 66: Spoken English/Chinese is easier than written English/Chinese for learners. As e-learning generally requires more written communication, it may be a barrier for learners who are weak in languages."

The two additional comments offered by Mr. T and Mr. M seem to be reinforcing a general view that the language issues in Hong Kong may be unique potential barriers to diffusion of e-learning. However, there are insufficient data to make any stronger inference on this subject. The somewhat uncertain position of the panel may be due to

a lack of expertise in the field of linguistics. Further investigation into this issue could certainly be an interesting and worthwhile topic for future research.

Special issue of barriers – Online discussions and interactions (Survey questions 73-87)

As mentioned in the previous chapter, the infrequent engagement in online discussions and interactions is one of the puzzling questions about the current usage of e-learning in Hong Kong. One plausible explanation is that Hong Kong students and teachers enjoy better conditions for face-to-face interactions and communications. Two of the supporting arguments for that suggestion are:

- Most e-learning courses in Hong Kong still retain face-to-face classes
- Given the convenience of public transport in Hong Kong, meeting face-to-face is not too difficult.

Under this area of online interactions as potential barriers, there were 15 potential issues suggested in the survey.

Clusters of barriers relating to online discussions and interaction	Positive	Marginally Positive	Sub-total
14. Carefully prepared Vs. spontaneous interaction	1	3	4
15. Interaction between students and teachers	1	1	2
16. Interaction between students	1	1	2
17. Interaction with e-learning materials	nil	2	2
18. Greater volume of communication	nil	2	2
19. Lurking	nil	2	2
20. Socializing online	nil	1	1
Total	3	12	15

Table 6.12: Survey Results of Online Discussions and Interaction as Barriers to e-Learning

The survey results show that, on the 15 suggested potential issues, the combined panel had a fairly high degree of agreement (100% 'Positive' or 'Marginally Positive'). These 15 issues suggested in the survey (as questions in the survey) may be grouped under the seven broad clusters for a closer look at the issues involved:

Cluster 14 – Carefully prepared communication Vs. Spontaneous interactions (survey questions 73-76)

Carefully prepared communication Vs. spontaneous interaction		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher - Researcher
	Sample size	**21**	4	17
1	73. E-learning is more suitable to shy students as they are under less pressure to contribute spontaneously in online discussion. They can quietly prepare their postings for online discussions and join in when they are ready.	4.0	4.3	3.9
2	74. E-learning is more democratic as online discussion forum would not be dominated by a small number of more out-spoken and quick-witted students.	3.9	4.5	3.7
3	76. There are more open communication & thoughtful sharing of ideas in online discussions than f2f discussions.	3.7	4.5	3.5
4	75. The quality of online discussions tends to be better than f2f discussions because students can carefully prepare their postings using tools and checking references.	3.6	4.5	3.4
	Cluster mean	3.8	4.4	3.6

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

On the issue of carefully prepared communication versus spontaneous interaction, the panel strongly agreed that e-learning is more suitable to shy students as they are under less pressure to contribute spontaneously in online discussions than in a face-to-face class. In other words, shyness is not a barrier in e-learning.

They also agreed that e-learning is more democratic as online discussion forums would not be dominated by a small number of more out-spoken and quick-witted students; and there is more open communication and thoughtful sharing of ideas in online discussions than f2f discussions. In other words, online discussions in e-learning are less susceptible to the problem of having dominant students in the discussions, and therefore is more democratic and conducive to open and thoughtful communication.

Cluster 15 - Interaction between students and teachers (survey questions 77-78)

Interaction between students and their teachers		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher – Researcher
	Sample size	**21**	4	17
1	78. There is a lack of incentives for the teachers to spend time in a forum if e-learning is only an optional component of the course.	4.1	4.3	4.1
2	77. Interactions between students and their teacher in a forum in e-learning is more conducive to good learning than just emails between a student and the teacher as an open forum will also encourage student to student interactions.	3.9	4.0	3.9
	Cluster mean	4.0	4.1	4.0

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

In terms of interaction between student and their teachers, the panel, whilst agreed that online interactions in e-learning is conducive to good learning, strongly agreed that there is a lack of incentives for the teachers to spend time on it if e-learning is only an optional component of the course. In this sense, a lack of adequate incentives for the teachers would become a barrier to the diffusion of e-learning as the teachers might be less motivated to spend time in online discussions.

Cluster 16 - Interaction between students (survey questions 79-80)

Interaction between students		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher – Researcher
	Sample size	**21**	4	17
1	80. Assessment of online discussions is necessary to motivate students to participate.	4.0	4.3	3.9
2	79. Students are more careful with their written remarks in online discussions as they know the accuracy and validity of their remarks can be checked by others, as full records are kept by the learning management system, and there is no denial of who said what and when. Therefore online discussions tend to be more focused and of higher quality academic contents.	3.4	3.5	3.4
	Cluster mean	3.7	3.9	3.6

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

On the issue of interaction between students, the panel strongly agreed that assessment is necessary to motivate students to participate in online discussions but only

marginally agreed that online discussions tend to be more focused and of higher quality than face-to-face discussions.

Cluster 17 – Interaction with e-learning materials (survey questions 81-82)

Interaction with e-learning materials		Sample Mean		
Rank	**Statement No. and description**	**Combined panel**	Teacher	Teacher - Researcher
	Sample size	**21**	4	17
1	81. It is more convenient for students to check and make reference to the course materials in e-learning when they are preparing their postings to online discussions. It is harder (usually not sufficient time) to do so in a classroom discussion.	3.9	4.0	3.9
2	82. As e-learning makes cross-referencing of course materials easier it would encourage students to spend more time with their course materials and therefore improve their comprehension of the course materials.	3.6	3.5	3.6
	Cluster mean	3.7	3.8	3.7

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

In terms of interaction with e-learning materials, there was general agreement among the panel members that it is more convenient for students to check and make reference to the course materials when preparing online forum postings and therefore would encourage students to spend more time with the learning materials.

Cluster 18 – Greater volume of communication (survey questions 83-84)

Greater volume of communication		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	83. As online discussions do not have the same time limitation as f2f discussions, it could generate a large volume of postings and might even become intimidating. Therefore students need to develop good time management skills to cope.	3.8	4.5	3.6
2	84. It is more time-consuming to participate in online discussions as more time is needed for written input than verbal input. Also there are more rigid time limitations in f2f sessions.	3.7	4.5	3.5
	Cluster mean	3.7	4.5	3.6

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The panel agreed that online discussion tends to generate a large volume of postings and might become intimidating. Students need to develop good time management skills to cope. Because of the large volume of postings in online discussions, it is perhaps more time-consuming without the benefit of time limitations, unlike the situation of face-to-face discussions.

Cluster 19 – Lurking (survey questions 85-86)

Lurking		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	85. Some students prefer to lurk instead of contributing to the online discussions because they find it hard to express themselves through a machine and without the human touch.	3.8	3.8	3.8
2	86. In online discussions, it is harder for the teachers to detect whether the silent students are actually lurking or simply absent. Whereas in f2f discussions, there are signs to help the teacher to determine whether the silent students are paying attention to the ongoing discussions.	3.4	4.5	3.2
	Cluster mean	3.6	4.1	3.5

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

"Lurking" describes the common behaviour of people who only read but do not contribute to the discussion in an online forum. The panel agreed that whilst it is unavoidable, some students would not feel comfortable engaging in a discussion and prefer just to be a lurker, and it is harder for teachers to differentiate lurkers from those simply absent in an online discussion. In other words, without the benefits of seeing the students, an online discussions tend to result in higher non-participation rates among students.

Cluster 20 – Socializing online (survey question 87)

Socializing online		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	87. Some students actually find it easier to socialize online because their identity is less visible.	3.8	3.8	3.8
	Cluster mean	3.8	3.8	3.8

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

On the issue of whether e-learning lacks socialization opportunities, the panel agreed that some students actually find it easier to socialize online because their identity is less visible. Perhaps as the younger students become more and more in tune with the online world, they are comfortable with socialization online and see no disadvantage of e-learning in this regard.

Summary on online discussions and interactions issues as barriers

In summary, the group of participants in the Follow-up questionnaire survey indicated general agreement to all seven clusters of issues relating to online discussions in e-learning. Some of which may be regarded as potential barriers. They strongly agreed that: online discussions helped shy students to participate, there was a lack of incentives for teachers to spend time on online discussions, and online discussions must be assessed in order to motivate participation. They generally agreed that online discussions are less likely to be dominated by a small number of out-spoken students and are more open. The quality tends to be better with more carefully prepared postings by students, more convenient referencing and cross-checking of study materials. However, there is a danger that a large volume of information and

time-consuming written input can be intimidating. Some students might resort to lurking to cope, which makes it harder for teachers to determine whether the silent students are simply lurking or absent. Students may find it easier to socialize online.

Comments offered by participants on the special issue of online discussions

Some comments by experts on online discussions and interaction issues were as follows:

Mr. T:

> "My personal experience in open forum e-learning discussion is not good due to very poor response. I guess most students believe that it wastes their time. As a result, open forum discussion is effective only before coursework submission and examination because students need to have quick answers for their questions."

Mr. M:

> "I strongly agree that e-learning enhances "interactions" — among students themselves, and between students and teachers. There were three distinctive advantages of e-learning over face-to-face learning in this aspect: (i) e-learning encourages interactions anytime and anywhere; (ii) e-learning encourages collaborative learning, through some tools such as co-building mind-map, sharing of tag; (iii) discussion and sharing are well recorded in written form."

These two remarks provided by Mr. T and Mr. M are in harmony with the collective view of the group. Online discussions are not popular with Hong Kong students. This may be a result of the other barriers identified in the Follow-up questionnaire survey such as student's sceptical attitude toward e-learning, being assessment-

focused, and also a lack of teacher participation in the online discussions (because of the teachers' sceptical attitude).

Special issue of barriers – Personal and social conditions (Survey questions 88-101)

As reported earlier, the interview participants were asked what they generally saw were the barriers to greater adoption of e-learning in Hong Kong and more specifically, whether age was a barrier. During the interviews, in addition to the age factor, 14 issues on personal or social factors were suggested as potentially having a negative impact on the learners which could become barriers to e-learning diffusion.

The interpretations of views expressed on these 14 issues were then grouped into five clusters of potential issues which may evolve into barriers. On the whole, the response of the combined panel showed a fairly diverse view on the five clusters of personal or social conditions that might have an effect on the diffusion of e-learning in Hong Kong. In summary, their responses were as follows:

Clusters of barriers relating to personal and social conditions	Positive	Marginally Positive	Neutral	Sub-total
21. Age difference	nil	4	1	5
22. Gender difference	nil	nil	3	3
23. Family conditions	nil	1	1	2
24. Home environment	nil	2	nil	2
25. Self-motivation	1	1	nil	2
Total	1	8	5	14

Table 6.13: Survey Results of Personal and Social Conditions as Barriers to e-Learning

The following is a closer look of their responses with respect to these five clusters of potential issues related to personal or social conditions:

Cluster 21 - Age difference (survey questions 88-92)

Age difference		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	89. E-learning is more natural for the younger learners [the so-called Net Generation].	3.9	4.0	3.8
2	92. Health conditions would be less of a concern to learners in e-learning.	3.8	4.3	3.6
3	88. Age is not a handicap nor would it make much difference in e-learning.	3.4	3.5	3.4
4	91. More mature persons are more suitable for e-learning.	3.4	4.5	3.1
5	90. Younger learners have a greater need for socialization and would resist pure e-learning because it is too 'lonely'.	3.1	3.8	3.0
	Cluster mean	3.5	4.0	3.4

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

On the question of whether age difference could become a barrier in e-learning, the panel agreed marginally that age is not a handicap nor would it make much difference in e-learning; e-learning is more natural for the younger learners [the so-called Net Generation]; more mature persons are more suitable for e-learning; and health conditions would be less of a concern to learners in e-learning.

However, they were divided on whether younger learners have a greater need for socialization and would resist e-learning because it is too 'lonely'.

In responding to the suggested issues relating to age, there may be a problem of definition; e.g. age is not a handicap but up to what age? There is no simple answer to the question "How old is old age?" Obviously, if health is not a concern, a learner could be effective at an older age. As reported in Chapters Two and Five, for the purpose of this study, old age is defined as age 50 or above, following the usual definition of a Third Age person (Laslet, 1996). But in the pursuit of knowledge, especially in lifelong learning at the higher education level, age 50 may not be regarded as old age at all, considering health conditions of the general public in Hong Kong are improving with the noticeable improvement of medical services in recent years. This perhaps points to the weakness in the research design of a lack of a discussion(s) phase among the participants. Had there been more time allowed to build in extra steps for discussions and clarifications, the panel might have arrived at a consensus on the question of age difference.

Cluster 22 - Gender difference (survey questions 93-95)

Gender difference		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	94. Female students are more articulate in verbal communication (especially in English) than male students and therefore enjoy f2f discussions more than online discussions.	3.1	3.8	3.0
2	95. Male students are less resistant to technology than female students and tend to have a higher level of acceptance for e-leaning, e.g. male students tend to participate more in online discussions than female students.	2.9	3.5	2.7
3	93. Female students prefer f2f learning over technology-based learning.	2.8	3.3	2.7
	Cluster mean	2.9	3.5	2.8

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

Basically the panel took a neutral stand on all three of the suggested issues concerning gender difference as potential barriers to e-learning. This to some extent challenged the conventional wisdom that male students are handier with technology. One might derive, therefore, that male students would be more in tune with technology-based learning. Apparently, the group did not subscribe to that notion. Neither did they subscribe to the notion that female students were more articulate in verbal communication (especially in English) than male students and therefore enjoyed face-to-face discussions more than online discussions. In short, they did not see gender differences as a significant factor in e-learning.

Cluster 23 - Family condition (survey questions 96-97)

Family condition		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	96. Married women would find it harder to cope with e-learning at home than married men as women are expected to make sacrifice for their family, e.g. do more house work, give other family members priority in using the family computer.	3.4	4.5	3.1
2	97. Married learners with young children would find it harder to cope with e-learning as once at home they need to spend time with their children as young children could be quite demanding for attention.	3.3	4.5	3.1
	Cluster mean	3.4	4.5	3.1

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

Of the two suggested issues concerning family conditions as potential barriers to e-learning, the group accepted marginally that married women would find it harder to cope with e-learning at home than married men because women are expected to sacrifice for their family (e.g. do more house work, give other family members priority in using the family computer) but took a neutral position on the question of whether married learners with young children would find it harder to cope with e-learning, because once at home they need to spend time with their children as young children could be quite demanding for attention. Therefore, it may be interpreted that collectively the group of informants did not believe family conditions are an important factor as a barrier to e-learning diffusion.

Cluster 24 - Home environment (survey questions 98-99)

Home environment		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	98. Many learners' home environment (no private space) is not suitable for long hours of self-study such as e-learning.	3.4	4.0	3.3
2	99. Many learners find e-learning difficult to cope with because they need to share-use one family computer at home.	3.4	4.5	3.2
	Cluster mean	3.4	4.3	3.2

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

The panel accepted marginally (mean scores of 3.4 in both cases) the two suggested home environment issues, namely lack of private space and having to share use of a family computer, as potential barriers. Perhaps the experts were not sure that their students were facing poor home conditions to the extent of affecting their engagement in e-learning at home (statement 98). Likewise, maybe they did not believe that their students would be without the exclusive use of a personal computer at home (statement 99). It may be the case based on their personal experience; their students are not so underprivileged or underequipped with computing devices necessary for engaging in e-learning. This interpretation is in harmony with the finding of Hong Kong's technological readiness for e-learning in terms of penetration rate of personal computers and broadband connections as reported in ***Chapter Two, Context of Enquiry***. Therefore, it may be concluded that home environment is not a significant barrier to greater diffusion of e-learning at the tertiary level in Hong Kong.

Cluster 25 - Self-motivation (survey questions 100-101)

Self-motivation		Sample Mean		
Rank	Statement No. and description	Combined panel	Teacher	Teacher - Researcher
	Sample size	21	4	17
1	100. E-learning demands greater self-discipline and self-motivation in a learner.	4.5	4.8	4.5
2	101. Learners with more work experience are better motivated in e-learning than in traditional learning.	3.6	4.5	3.4
	Cluster mean	4.1	4.6	3.9

Note: Mean values of 3.4 or above which indicate "Marginally Positive" or "Positive" are shaded.

With a mean score of 4.5, the panel apparently agreed strongly that e-learning demands greater self-discipline and self-motivation in a learner. It may be argued that this observation is to be expected as self-motivation should be important in any mode of learning and not just in e-learning. Perhaps the sentiment being expressed by the panel is that self-motivation is even more important in e-learning because in order to enjoy the full potential benefits of e-learning the learners must be willing to study more independently without the usual face-to-face contact — thus without prompting — from their teachers and peers.

On the question of whether learners with more work experience are better motivated in e-learning than in traditional learning, they agreed only marginally.

Comments offered by the panel on the issues of personal and social conditions

The following specific comments on personal and social conditions related issues were offered:

Mr. T:

"As people become older every day, i.e. more senior citizens in the future, e-learning is effective in lifelong learning. In other words, people realize that they need to keep update [sic] with the world by learning new things, or receive new information on the internet. However, they need new skill to acquire the knowledge. As a result, e-learning can help them improve their technical skills. No wonder there are so many senior adult centres run by Government to entertain them because most of them enjoy learning at their leisure. Face-to-face teaching is expensive. Therefore, e-learning is a popular solution to solve the problem. In summary, e-learning is supplementary to personal social life. It should be part of one's life in the future soon."

Mr. M:

"According to various statistics (from education institutions and census), the proportion of female students keeps increasing, especially in the continuing education sector (around 1: 1.4 for Male: Female). It is shown that girls are more eager to study than boys. Besides, girls seem to have greater self-discipline than boys in the learning processes. As e-learning demands greater self-discipline (Question 100), e-learning is relatively more easily accepted by girls than boys."

"For Questions 93 and 95: Given that technology becomes more and more user-friendly and easy to use, technology is no longer a barrier for female students."

"For Question 94: It is a general impression that female learners usually have better language/communication skills (both written and oral) than male learners. Female learners would have relatively lesser [sic] difficulties in written communications (e.g. in discussion forum) in e-learning."

"For Questions 96 and 97: I agreed that married women have greater family commitment that makes them difficult to find spare time for study. However, compared to face-to-face learning, e-learning provides more flexibility in time and space for married women to learn."

The additional remarks offered by the experts on the potential effect of personal and social conditions on e-learning were quite diverse in nature. Mr. T was quite positive about the role of e-learning in lifelong learning for the older learners. He believed that e-learning can supplement a person's social life and should be part of everyone's life in the future. The suggestion that male students may have an advantage in technology-enhanced e-learning was strongly rejected. Mr. M believed the opposite is true; that is, female students have an advantage over their male counterparts in e-learning because of their superior language skills.

Summary on Barriers to e-learning

The key research question of this study is to investigate the teacher-researchers' view on the barriers to e-learning in HK. It is therefore important to take stock of the analysis of survey results at this point, focusing on what the barriers identified from the above analysis are. From the mean scores of the combined panel of 101 statements, those at 3.4 or above (Agreed or Strongly Agreed) are listed in Tables 6.14a-d below.

Cluster No.	Statement No. and description		Mean of Combined Panel	Mean of cluster
7	**Hong Kong Education Culture**			3.5
	44	The HK education culture of teacher-centred with low student self-directedness is a barrier.	3.5	
8	**Institution Readiness**			3.9
	46	Teacher's lack of prior e-learning experience is a barrier to greater adoption of e-learning in HK.	4.1	
	52	E-learning is misused when the institution or teacher forced everything online regardless of suitability.	4.1	
	54	Technology is not the barrier but the lack of sound planning and design in employing technology is, e.g. e-learning is not suitable for laboratory-based course.	4.1	
	45	Insufficient administrative or technical support to the teacher is a barrier for greater diffusion in HK.	3.9	
	49	The lack of an appropriate institution-wide e-learning implementation strategy is a barrier.	3.9	
	50	The lack of a good institutional change management strategy and process is a barrier.	3.9	
	51	The lack of incentives for the teachers in the existing reward system is a barrier.	3.9	
	47	The current absence of satisfactory means to conduct e-assessment is a barrier.	3.7	
	53	Learners have not been given proper familiarization of the e-learning technology before they start engaging in e-learning.	3.7	
	48	The current lack of a good quality assurance system for e-learning is a barrier.	3.5	
9	**Teacher and Student Attitudes**			3.6
	55	The teachers' or the students' sceptical attitude about the need for e-learning is a barrier.	3.8	
	56	Effective e-learning requires acceptance of role changes for teachers and students but currently there is a general resistance to such changes among teachers and students in HK	3.8	
	58	Student's attitude of preferring f2f learning is a barrier.	3.7	
	57	Changing roles of teachers and students in e-learning will also lead to changing relationship between the teachers and the students. Resistance to such change is a barrier to the greater adoption of e-learning.	3.6	
	61	Student's attitude of seeking to get through a course with minimal work (utilitarianism in learning) is a barrier.	3.6	
	62	Parents'/students' belief that e-learning is only a money saving alternative to f2f teaching for the institution is a barrier.	3.6	
	59	Parents' or students' belief that f2f learning is a better mode of learning is a barrier.	3.5	
	63	Teachers' attitude of delivering the instructions with minimal work (utilitarianism in teaching) is a barrier.	3.4	

Table 6.14a: Strongly Agreed and Agreed (mean scores of 3.4 and above) survey results of the combined panel on culture, readiness and attitude barriers in descending order of mean scores

As shown in Table 6.14a, the panel agreed that the teacher-centred and low student self-directedness education culture of HK is a barrier to e-learning diffusion. They agreed strongly that the lack of institutional readiness in terms of strategic planning and implementation, change management of an adequate administrative system, and technical support to e-learning is a barrier. They also agreed that the lack of incentives for teachers in the reward system and the absence of satisfactory e-assessment and quality assurance system are barriers. Inadequate familiarization programmes for the students of the e-learning technology employed is also a barrier to diffusion.

Another major barrier to e-learning diffusion is the prevalent negative attitudes of teachers and students in HK towards e-learning. The panel sees a general sceptical attitude about the need for e-learning on the part of some teachers and students. There is a strong preference for traditional face-to-face learning, and therefore any reduction of contact hours resulting from the introduction of e-learning is seen as a ploy to save money. Those students who seek to get through their studies with minimal effort dislike e-learning because it means more work for them. Furthermore, reluctance to accept the required role and relationship changes for the teachers and students necessitated by e-learning (requiring students to take greater responsibilities for their learning) also leads to resistance to e-learning.

Such attitudes may have been fostered unintentionally by misunderstanding but are nevertheless strong as a barrier to students' acceptance of e-learning.

Cluster No.	Statement No. and description		Mean of Combined Panel	Mean of Cluster
10	**Academic Language Vs. Social Language**			3.6
	64	Although Hong Kong students are comfortable with English for academic purpose, they are far less comfortable with English for social purpose. They prefer to switch back to Chinese for non-superficial social interactions.	3.9	
	65	In Hong Kong, students prefer to use Chinese in classroom discussions although English is the official medium of instructions. The dominance of written communications in e-learning makes e-learning less popular with students because it is easier for the teachers to enforce the institution's medium of instructions (in English) policy in an online forum.	3.6	
	66	The requirement of more frequent written (either in English or in Chinese) communication (for online discussions) in e-learning makes it less popular with HK students because they believe oral discussion in f2f learning is less work to them.	3.4	
13	**Use of Chinese in e-Learning**			3.4
	72	Many HK students find Chinese characters harder to input than English alphabets and this is a barrier to greater diffusion of e-learning.	3.4	

Table 6.14b: Strongly Agreed and Agreed (mean scores of 3.4 and above) survey results of combined panel on language barriers in descending order of mean scores

Another area of potential barriers for HK learners, albeit not as serious as the three previously mentioned barriers, is the two official languages policy and the culture of mixed-code. The preference for Chinese as a social language coupled with the requirement of mainly written communications in e-learning, makes e-learning unpopular with students as they would find it easier to communicate orally in a mixed-code fashion in face-to-face discussions than in online discussions. The more difficult methods for inputting Chinese characters into a computer further exacerbated the unpopularity of e-learning with students,

Cluster No.	Statement No. and description		Mean of Combined Panel	Mean of Cluster
15	**Interaction Between Students and their Teachers**			4.1
	78	There is a lack of incentives for the teachers to spend time in a forum if e-learning is only an optional component of the course.	4.1	
16	**Interaction Between Students**			4.0
	80	Assessment of online discussions is necessary to motivate students to participate.	4.0	
18	**Greater Volume of Communication**			3.8
	83	As online discussions do not have the same time limitation as f2f discussions, it could generate a large volume of postings and might even become intimidating. Therefore students need to develop good time management skills to cope.	3.8	
	84	It is more time-consuming to participate in online discussions as more time is needed for written input than verbal input. Also there are more rigid time limitations in f2f sessions.	3.7	
19	**Lurking**			3.6
	85	Some students prefer to lurk instead of contributing to the online discussions because they find it hard to express themselves through a machine and without the human touch.	3.8	
	86	In online discussions, it is harder for the teachers to detect whether the silent students are actually lurking or simply absent. Whereas in f2f discussions, there are signs to help the teacher to determine whether the silent students are paying attention to the ongoing discussion.	3.4	

Table 6.14c: Strongly Agreed and Agreed (mean scores of 3.4 and above) survey results of combined panel on online communication barriers in descending order of mean scores

The heavy reliance on online discussions for interactions between students, teachers and the learning materials is another cause for resistance to e-learning. The huge volume of postings and need for conducting assessment for such a volume of student work are putting a heavy burden on the conscientious teachers, especially if there is a lack of incentives or compensation to them. Large volumes of postings in an online forum could also be time-consuming and even intimidating to some students, particularly once they begin to fall behind in reading and participating in the

discussions. Some teachers dislike e-learning because, without the face-to-face contact, they find it harder to notice students who are merely lurking and not engaging in the discussions.

Cluster No.	Statement No. and description		Mean of Combined Panel	Mean of Cluster
23	**Family Condition**			3.4
	96	Married women would find it harder to cope with e-learning at home than married men as women are expected to make sacrifice for their family, e.g. do more house work, give other family members priority in using the family computer.	3.4	
24	**Home Environment**			3.4
	98	Many learners' home environment (no private space) is not suitability for long hours of self-study such as e-learning.	3.4	
	99	Many learners find e-learning difficult to cope because they need to share-use one family computer at home.	3.4	
25	**Self-motivation**			4.5
	100	E-learning demands greater self-discipline and self-motivation in a learner.	4.5	

Table 6.14d: Strongly Agreed and Agreed (mean scores of 3.4 and above) survey results of combined panel on personal and social conditions barriers in descending order of mean scores

The last category of barriers stems from personal social conditions of the learners. As mentioned in ***Chapter Two, Context of the Enquiry,*** HK is a congested city where most of the inhabitants live in relatively cramped space with little private space for learning at home. Such limitations also bring about related problems for e-learning diffusion such as having to share-use a computer and for married women doing homework at home. Whilst the panel agreed marginally that this could become a barrier, they agreed strongly that e-learning demands greater self-discipline and self-motivation in a learner. In other words, the lack of necessary self-discipline and self-motivation is considered a stronger barrier by the panel.

Summary of Open Comments

In addition to the answers provided by the panel of teachers and teacher-researchers, additional input was provided by individual panel members in the form of written comments. Most of their written comments were already incorporated into the discussions of each cluster of concepts in the preceding sections. A summary of the distribution of all 30 comments received is as follows:

		Interview Participants							
Cluster No.	Clusters of concepts	Ms. V	Mr. G	Mr. M	Mr. T	Mr. O	Ms. W	Ms. J	Sub-total
3	Benefits to the teachers	1	1	6					8
6	Impact to the teachers	1		4	1	1	1	1	9
7	Hong Kong education culture			2					2
9	Teacher and student attitude				1				1
10	Academic language Vs. social language			1	1				2
15	Interaction between students and their teachers			1	1				2
16	Interaction between students			1					1
21	Age difference				1				1
22	Gender difference			3					3
23	Family condition			1					1
	Sub-total	2	1	19	5	1	1	1	30

Table 6.15 Summary of written comments provided by individual panel members

As the above summary shows among the 25 clusters, only 10 had additional comments from the panel of which Benefit to the teachers (Cluster 3) and Impact to the teachers (Cluster 6) seem to have triggered more comments. Perhaps being at the forefront of learning implementation in their respective institutions, the panel members have more personal experiences to share.

4. Issues arising from the expansion of panel of experts in the Follow-up Questionnaire Survey

This phase of the enquiry, which was anchored upon the results from a set of in-depth interviews and through a follow-up questionnaire survey, built up to a set of collective views on e-learning from a combined panel of four teachers and 17 teacher-researchers from eight different institutions in Hong Kong. Such a design of the research project has its drawbacks and issues.

Three obvious questions come to mind. First, whilst expanding the group of informants from nine to 21 should strengthen the representativeness of the sample and also enhance the validity of the results, did the additional 12 teacher-researchers significantly alter the results established by the original nine informants? Second, was there any significant difference of views between the group of four teachers and the group of 17 teacher-researchers? Third, how serious was the omission of the discussions, controlled feedback, and iteration steps for the panel of experts on the final results? The following paragraphs will attempt to address these questions.

4.1 Has the expanded panel shifted the assessments by the original panel?

To answer this question, survey results from the original nine experts were compared with the survey results from the expanded panel:

Category	Grouping of Participants	Combined panel	Original panel	Expanded panel
	Group size	21	9	12
Positive		28	28	26
Marginally Positive		57	59	**44**
Neutral		16	14	**29**
Marginally Negative		nil	nil	2
Negative		nil	nil	nil
Total		101	101	101
Positive + Marginally Positive as a % of total		84.2%	86.1%	69.3%
Neutral as a % of total		15.8%	13.9%	30.7%
Group mean		3.7	3.8	3.6
Standard deviation		0.38	0.37	**0.46**

Table 6.16: Comparison of the Survey Results between the Original Panel and the expanded panel

These figures show that, overall, the expanded panel of 12 teacher-researchers had a more diverse view than the original panel of nine with a higher standard deviation at 0.46. They took a neutral position on approximately 30% of the various issues raised in the Follow-up questionnaire survey compared with 13.9% for the original panel. Also, whilst the original panel was positive or marginally positive towards 86.1% of the issues, the expanded panel was only positive or marginally positive towards 69.3%.

This may be due to the lack of discussion and therefore clarification opportunities for the expanded panel members who gave their views solely based on the Follow-up questionnaire survey questionnaire, whereas members of the original panel had a chance to clarify their understanding of the various concepts through the in-depth interviews in which they participated. Indeed, each of them contributed part of the 101 concepts through the interviews.

Interestingly, whilst no negative or marginally negative stands were expressed by the original panel collectively, the expanded panel actually took a marginally negative stand on (that is, rejected) two of the suggested impact and barriers, namely:

- E-learning is more time-consuming for the learners than traditional face-to-face learning.
- Doing academic work online using a mixed language in written form is actually harder for the students.

However, the combined effect of all 21 responses is a neutral position. Nevertheless, it shows these two suggested impacts and barriers were less convincing to them.

4.2 Did the teacher-researchers give very different views than the teachers?

The second question is about how differently the two categories of different background of informants, teachers and teacher-researchers, responded to the survey.

For the 101 statements or concepts, the overall picture shaped up as follows:

Category	Grouping of Participants	Combined panel	Teachers	Teacher-Researchers
	Group size	21	4	17
Positive		28	69	22
Marginally Positive		57	26	52
Neutral		16	6	27
Total		101	101	101
Positive+ Marginally Positive as a % of total		84.2%	94.1%	73.3%
Group mean		3.7	4.1	3.6
Standard deviation		0.38	0.37	0.42

Table 6.17: The Overall Survey Results of the Follow-up questionnaire survey

The group of four teachers clearly seemed to be much more positive towards the concepts with a group mean of 4.1 (or expressing "Positive" or "Marginally Positive" views to 94.1% of the concepts) than the 17 teacher-researchers with a group mean of 3.6 (or expressing "Positive" or "Marginally Positive" views to 73.3% of the concepts). Conversely, the teacher-researchers were collectively neutral on many more of the 101 concepts (26.7% Vs. 5.9%).

Comparing the two groups in terms of their responses to the 25 clusters of concepts draws similar conclusions. In fact, by cluster of concepts, the teachers were positive or marginally positive to all 25 of them but the teacher-researchers were neutral on six, namely:

- impact to learners
- local culture of mixing languages
- use of Chinese in e-learning
- gender difference
- family condition
- home environment

One plausible explanation may be that the teacher-researchers, whilst being more realistic about potential benefits and impact of e-learning, were less concerned with the various suggested impacts and barriers. Perhaps because of their knowledge of what was happening outside their own institutions as far as e-learning diffusion goes, they were more positive about the future of e-learning in Hong Kong. Therefore, as a group, the teacher-researchers were actually more optimistic about the chance of successful diffusion of e-learning in Hong Kong. It should be noted, however, for some of them (as indicated through their comments), their opinion was based on the assumption that the genre of e-learning was blended learning instead of the pure form of e-learning, whereas the group of teachers did not indicate such assumptions and might not be aware of the technical difference between the two.

This shows that by expanding the original panel with more teacher-researchers, the net effect was the expanded panel of informants showed a weaker agreement on the suggested barriers and therefore perhaps signaled a more optimistic view regarding e-learning diffusion in Hong Kong. It may also be interpreted that with more members in a panel, the collective views tends to be more diverse.

Also, it may be observed that the enlargement of the original panel with an expanded panel resulted in some shifting of categories for some of the statements between "Positive", "Marginally Positive" and "Neutral" but in all cases, by no more than one category. Whilst the shift was mostly from "Positive" to "Marginally Positive" or form "Marginally Positive" to "Neutral", there were some exceptions. For example, the expanded panel was in stronger agreement on some of the suggested benefits.

The overall effect is a decrease in the general "Positive" position for the combined panel. Also, it seems the pattern of the assessments by the combined panel is more consistent with that of the expanded panel than the original panel. Therefore, the expanded panel, because of its sheer number and internally consistent voting, had successfully and consistently shifted the combined panel's views on the issues.

In short, without the expansion of the group of informants by the 12 additional teacher-researchers, the conclusion would have been a weaker agreement on the potential benefits of e-learning for Hong Kong; a stronger agreement on the potential impacts; and a weaker agreement on the suggested barriers to e-learning diffusion.

This is perhaps not entirely unexpected, since these 101 statements represented a summary of views expressed by the original panel; at least some of the members could identify with these views and vote to adopt them in the subsequent survey. Another explanation for this phenomenon would be the effect of having discussed these issues during the in-depth interviews; members of the original panel were more familiar with the context of these statements and might find it easier to take a position on them, whereas members of the expanded panel, when unsure of the question, might tend to take a neutral position. Additionally, members of the expanded panel might find it difficult to take a position on some of these statements without an understanding of their context and specific references. As a result, they chose to take a "Neutral" stand on such statements. The net effect then would naturally be an increase in the "Neutral" category and a decrease in the "Positive" categories.

4.3 How serious was the omission of group discussions in the Follow-up questionnaire survey?

To some extent, the above analysis could also be relevant to the third question; that is, how serious was the impact created by the omission of discussions, controlled feedback, and iteration steps from the Follow-up questionnaire survey? Had there been a discussion phase in the simplified Follow-up questionnaire survey, on the one hand members of the original panel would have been able to share their understanding of the background and context of these statements with members of the expanded panel. With improved understanding of the context, members of the expanded panel might be more willing to take a position on those statements that they 'gave up' by choosing "Neutral". Through discussions and negotiation, a dominant view with respect to individual statements might emerge that could also enhance the chance of convergence of views by the whole panel. On the other hand, it is also possible that in group decision process, sometimes a few strong-minded and dominating members can exert great pressure and influence on others to push their ideas or views. Especially in time-sensitive situations, e.g. when time is too short for a thorough debate, people would just 'go along' with the dominating figures (provided there is no personal gain or loss involved) and compromise their own views or position.

Based on the findings in this chapter, certain inferences and conclusions will be made in the next and final chapter of this thesis.

Chapter Seven

Conclusion

This chapter presents a summary of conclusions that may be drawn based on the analysis and data presented in the previous chapters, given particular reference to the research questions of this study as outlined in Chapter One (The Research Focus, p. 21). Findings of this study are also compared with those reported in the literature on where the gaps are. This chapter contains the following sub-sections:

1. A "Helicopter View"[9]
2. The extent the research questions have been answered
3. Contributions to knowledge
4. Implications for policy and/ or practice
5. Limitations
6. Suggestions for further research
7. Reflections on the study
8. Final observations

1. A "Helicopter View"

As argued in the first chapter of this thesis (*Chapter 1, The Purpose of the Research, pp. 18- 21)*, despite Hong Kong's apparent readiness to embrace e-learning as implied by Hong Kong's excellent Internet technology infrastructure with its high availability of broadband networks and widespread ownership of laptop computers, e-learning has

[9] Helicopter view:

(a) A general survey of something; an overview. (*Oxford Dictionary)*

(b) A general description or opinion of a situation, rather than a detailed one. (*Cambridge Business English Dictionary)*

not been nearly as popular as expected by educators and educational policy makers. Against this background, this research examined certain aspects of e-learning as a change agent in tertiary education in Hong Kong in the minds of the *key* change agents in any educational endeavour — the *teachers*. The research question was, therefore, "How do teachers, in particular those with greater appreciation of the potentials and limitations of e-learning, that is, the teacher-researchers in tertiary education, see the benefits and impact of, and most importantly, barriers to diffusion of e-learning in Hong Kong?"

The observations made in this study lead to the conclusion that although e-learning is strongly embraced by the institutions and promoted by educational policy makers in Hong Kong, its penetration in an average course of study is relatively superficial. Despite strong recognition of the great potential benefits of e-learning (with little impact on the institutions, learners and teachers) by teachers and students, only the more basic e-learning features such as online announcements, online assignment submission, use of search engines and online course materials are relatively widely in use in the tertiary institutions in HK. Notably, utilization of online discussions is extremely low. There is strong resistance to the adoption of e-learning if it means a

reduction of face-to-face classroom contact hours. In other words, students do not mind if e-learning is offered as an optional component on top of the regular classes.

Based on the survey results of learners, teachers, and researchers, since the potential benefits of e-learning are basically the same as those enjoyed by students all over the world; why, then, cannot e-learning enjoy the same popularity in HK as elsewhere? What would the main barriers be to the acceptance and diffusion of e-learning in HK? The answers provided by the teacher-researchers in the surveys can be summarized under the following four dimensions:

1.1 Institutional readiness

Institutions are not ready when lacking in strategic planning, implementation, change management, administrative and technical support, and adequate incentives for the teachers in the reward system for e-learning.

1.2 Attitudes and HK Culture

There is a prevalent sceptical attitude among teachers and students towards e-learning that may stem from their reluctance in accepting a role and relationship change toward the e-learning pedagogy of student-centeredness and self-

directedness. Some students' belief that *face-to-face* learning is of greater value for money and their attitude of seeking to get through a course with minimal work (utilitarianism in learning) are also barriers to the acceptance of e-learning. Some teachers' attitude of delivering instruction with minimal work (utilitarianism in teaching) is also a barrier.

1.3 Language and online interaction

Perhaps not as serious as the two previous areas of barriers, the unique teaching language policy in HK tertiary institutions is also a source of hindrance to e-learning diffusion. HK Students are used to mixed-coding Chinese and English in oral communication. However, their preference for Chinese as a social language, coupled with the requirement of written communications in English in higher education, makes e-learning unpopular as interactions in e-learning are mostly done online and in written form. The more difficult inputting of Chinese characters adds to e-learning's unpopularity.

1.4 Personal and social conditions

Whilst crowded home condition for learners can be a barrier to e-learning, the most important barrier identified by the informants is a lack of self-discipline and

self-motivation in a learner. Unfortunately, such qualities are essential in a learner within an e-learning pedagogy that requires self-directedness. By comparison, other personal conditions such as age, gender, and family status all seem to be negligible barriers to e-learning.

In summary, although HK students and teachers clearly recognize the potential benefits of e-learning, their reluctance to embrace it as an alternative to face-to-face learning is rooted in their sceptical attitude and a culture of teacher-centeredness and utilitarianism in learning. The e-learning pedagogy that demands self-directedness and student-centeredness becomes the main barrier to e-learning diffusion in HK. To a lesser extent, the mixed-language culture and the requirement of heavy written communication in English also contribute to e-learning's unpopularity in HK.

2 The extent the research questions have been answered

As stated in the first chapter, "The proposed research project aims to explore the benefits and impact of e-learning through the eyes of the teachers and researchers of e-learning in tertiary education in Hong Kong. More importantly, the study also aims to examine their views on the barriers to greater adoption of e-learning in Hong Kong." (*Chapter 1: Introduction – the Purpose of the Research, p. 21).* The results of the

web surveys, in-depth interviews and the Follow-up questionnaire survey provided the answers to these three main questions.

2.1 Benefits of e-learning to the institutions, learners and teachers in HK

In general, benefits of e-learning to Hong Kong learners are not dissimilar to those experienced in other places. In terms of benefits to the learners, the important advantages of time, space, pace, and independence in learning that facilitate interactive learning, collaborative learning, and knowledge building are equally applicable to the Hong Kong context despite it being a small but densely populated city. Providing a full record of online discussions and facilitating access to a huge information depository are seen as strong advantages over conventional face-to-face learning.

In terms of benefits to teachers, the flexibility in teaching and providing a full record of discussions that helps monitor student progress are seen as the major advantages of e-learning. It is seen to provide support for a constructivist approach to learning, course design and planning, and facilitates flexible course materials updating and differential blending of technology into teaching. It also

helps teachers gain some efficiency and effectiveness in teaching, facilitates team teaching, and allows greater choice of teaching methods.

In terms of institutional benefits, e-learning can help the institutions build a progressive image, help in diversification and globalization, and to some degree help in economies of scale.

However, it should be noted that the key benefits of e-learning have generally been recognized to be the enhancement of learning effectiveness with a richer learning experience for the students rather than financial benefits. High quality e-learning is not a cheaper option to the face-to-face mode of instruction. Not only is a significant initial investment required in developing learning materials for online delivery, there are also additional recurring costs in the ongoing maintenance of the course contents and websites. It may be possible to realize some savings in the longer term in the running costs, especially if operating on a large scale. Learners may gain some minor savings in reduced transportation costs but that does not seem to be a major consideration.

2.2 Impact of e-learning to institutions, learners and teachers of in HK

The impact of e-learning in the Hong Kong context is not as obvious as its benefits. The informants do not find that e-learning, other than some concerns like looking at computer screens for long hours might be hard on the eyes, has any greater impact on students than conventional face-to-face learning does.

However, the experts do see that e-learning generates more workload for the teachers, particularly in monitoring and participating in online discussions. They also find e-learning courses somewhat less stable, more time-consuming, requiring more attention to handle, and involving more work. They also agreed that the perceived high costs of e-learning create an impact, and the different expectations of teachers and students also create an impact on the institutions.

2.3 Barriers to greater adoption of e-learning in Hong Kong

The answers provided by the informants through the in-depth interviews and the follow-up surveys can be grouped under four categories.

a. Institutional readiness

The absence of institutional readiness as manifested in blindly forcing everything online, insufficient support for teachers, and lack of (a) e-assessment means (b) a good quality assurance system (c) implementation and change management strategy, and (d) incentives for teachers are all identified as barriers to diffusion in Hong Kong.

b. Teacher and student attitude and HK culture

In terms of Hong Kong education and culture, whilst the teacher-centred culture with low student self-directedness is a concern, the assessment-centric culture is not. However, negative attitudes of teachers and students are clearly barriers. Negative attitudes might be skepticism, preference for face-to-face learning, resistance to change of role and relationship, delivering the instruction with minimal work, or simply perceptions of more work in e-learning. Based on the online surveys, both students and teachers do see benefits in e-learning, but they would still prefer to retain the face-to-face elements in a course with e-learning as add-ons. There is a strong feeling of preference of traditional face-to-face learning and belief that any alternative mode of learning is inferior and not 'value-for-money'. In short,

uunfavourable perceptions and negative attitudes towards e-learning are the strongest barriers to e-learning diffusion in the Hong Kong context

c. Language and online interactions

Closely related to the language issue is the question whether the use of English as the medium of learning is dampening the enthusiasm of students to participate in online discussions. First, the experts strongly believe that the lack of incentives for teachers to spend time on online discussions is a barrier to diffusion. Second, they also strongly believe that assessment of online discussion is necessary, and therefore the lack of it becomes a barrier.

On the one hand, they supported the notions that online discussions are more suitable for shy students, have high quality, are more open and thoughtful, easier for cross-referencing with course materials, and facilitated lurking; but on the other hand they also accepted that online discussions could be time-consuming, and even become intimidating requiring good time-management skills, and are harder for the teachers to monitor.

a. Personal and social conditions

In terms of personal and social conditions, the panel did not see age or gender as barriers to e-learning. Although they agreed in general that family situation and home environment could make a difference, they agreed strongly that lack of self-discipline and self-motivation can be a serious barrier.

In summary, on the one hand, none of the barriers identified and subscribed by the experts seems particularly unique to Hong Kong. On the other hand, of those suggested barriers that are more unique to Hong Kong (mixed-coding, Chinese characters input, assessment-centric, cramped home conditions and teacher-centeredness) the panel of experts only mildly supported some of them. However, the strongest barrier seems to be the unfavourable perception and negative attitude of students and employers towards any form of flexible learning such as e-learning and distance learning. Therefore it may be concluded that e-learning diffusion in Hong Kong faces fairly similar problems as other parts of the world.

Supplementary research questions

The research also aimed to enquire into a number of related smaller questions (*Chapter 1: Introduction – the Purpose of the Research, p. 22-23).* These questions and a brief recap of the answers derived from the data are as follows:

Question 1:

Are there differences between older and younger learners in Hong Kong in terms of their perceived benefits to be derived from e-learning? Are the older Chinese learners in Hong Kong less receptive to e-learning because of the technological barrier?

Answer:

This study began with the suspicion that old age might be a significant barrier to the diffusion of e-learning and, compared with the younger generation, older people might be less attuned to technology and would therefore find it harder to embrace e-learning. The views of the teacher-researchers refuted this assumption and opined strongly that age is not a significant factor in diffusion. Their view correlates strongly with views expressed by students and teachers in the web surveys.

Question 2:

To what extent or whether the predominant language of the Internet, English, has been a barrier (or help) to Hong Kong learners through e-learning?

Answer:

On the language issue, the experts do not see major problems. Whilst they see some

advantages as well as disadvantages of online learning with English being the students' second language, the experts are only mildly convinced that language usage in Hong Kong could be a barrier. However, they do not accept that the students' habit of mixing languages is a barrier, nor do they believe that e-learning based on the Chinese language is a problem.

Question 3:

Are there any personal or social conditions that likely facilitate or hinder learning in e-learning?

Answer:

On the issues of personal and social conditions as potential barriers, the experts have a fairly diverse view. Clearly they do not see age being a barrier, nor gender difference. Poor home environment and certain family conditions could become barriers to some extent but the lack of self-motivation would be much more crucial.

Question 4:

Are interactions among students and between students and their teachers any different in e-learning?

Answer:

In terms of barriers, several potential barriers such as the mixed coding of two languages, assessment-centric culture, the teacher-centred tradition and several

personal and social conditions were all found to contribute to hindering diffusion only in a small way.

Question 5:

Is the lack of socialization in e-learning a major barrier to e-learning in Hong Kong?

Answer:

No, the informants do not see lack of socialization in e-learning as a barrier in HK.

3 Contribution to knowledge

By enquiring into the teacher-researchers' view on the potential benefits, impacts, and barriers to e-learning diffusion in tertiary education in Hong Kong, this study provided an experts' view on the current state of e-learning development in Hong Kong regarding these three key aspects. The conclusions drawn from the data collected will hopefully enhance understanding of the nature of resistance to e-learning for educational planners and policy makers in Hong Kong and lead to improvement of practice in the field.

4 Implications of findings on policy and practice

Based on the conclusions drawn from the study, certain implications may be derived on policy and practice for teaching and learning, and institutional management

4.1 Overcoming teacher resistance

Obviously, teachers' attitude is pivotal to the successful implementation of e-learning and diffusion. In any institution, there will be some teachers who are sceptical. Regardless of the reasons for such skepticism, development of e-learning should be carefully planned, with particular attention given to deal with the concerns of the more sceptical teachers.

The key to overcoming teacher resistance is to provide adequate support and recognition to ensure their buy-ins. A major part of support involves providing appropriate training for teachers such as workshops on use of new technologies, and techniques in online tutoring and discussion moderation. In addition, providing timely and appropriate support to teachers in developing e-learning materials and online-tutoring skills is also vitally important. Teachers will require technical support relating to educational technologies (e.g. graphic design, instructional design, and interface programming) and the e-learning platform. It is particularly important that someone can be called upon – a hotline for assistance, for example – when hardware or software problems occur.

Also, suitable training for relevant staff in the administrative and technical support services will need to be provided to support teachers in maintaining the course website.

4.2 Revamping the reward system for teachers

Perhaps the most important support needed by teachers is a change in institutional reward systems that will give due recognition to excellent teaching and development of teaching materials. The fundamental issue is how contributions in enhancing teaching excellence through the use of e-learning should be recognized and rewarded. Appropriate rewards for teachers must go beyond mere monetary rewards. Would proper recognition such as promotion in academic ranks be much more important than monetary rewards?

Traditionally in an academic community, the road leading to recognition is by research and publication only. Good effort invested in developing learning materials has not been widely recognized, as 'teaching excellence' has not been on a par with 'research excellence'. Given it is more time-consuming to deliver instruction through e-learning than traditional face-to-face learning, busy academics have few incentives to invest extra time and effort to enrich his or her

teaching with e-learning if the traditional reward system in academia remains unchanged.

There is another issue relating to the reward system. This is, what would be an appropriate reward system for those part-time teachers in continuing education? These part-time are sessional and are mostly paid by a fixed sum based on either hours of work or number of course credits. Unlike traditional classroom discussion, which is limited by the time allocated, the added effort and time in managing online discussions can be quite substantial and, ironically, more successful (enthusiastic) online discussions will lead to even more work for teachers. What would be a proper recognition in the reward system for the extra effort in enriching e-learning courses for the part-time teachers? Without a career path before the part-time teachers, it would seem even harder to gather a critical mass of enthusiastic teachers to realize an institution-wide e-learning diffusion.

4.3 Overcoming student prejudice

One major barrier to the diffusion of e-learning is the presently prevalent prejudice of students. Measures must be taken to overcome their fear of losing

out when e-learning is blended into their learning scheme. Perhaps the best strategy to promote e-learning is not to promote e-learning *per se*. The best practice in teaching should start with the design of an appropriate pedagogy for certain learning aims. It stands to reason that in order to realize such pedagogy, it may be necessary to blend suitable educational technology into the teaching and learning process. Whether a label of e-learning should be stuck on the process would not seem crucially important, but *that* label might influence student perceptions and consequently its eventual outcome of success or failure. Therefore, since there is currently a stigma among students about e-learning, perhaps avoiding the label would be a simple and pragmatic approach. That may be the precise reason that two of the informants emphasized that what their institutions practiced was Blended Learning rather than 'old fashioned' e-learning.

An alternative to this approach, is simply "just do it" without drawing any attention to the adopted pedagogical approach. The great variety of labels of pedagogical approaches should only be important to the teachers. If such labels distract the learners' attention to the real learning process for reasons of negative perceptions or biased attitudes, the better choice might be just to drop the labels

and concentrate on motivating the learners to overcome their over-reliance on the teachers for their learning and to buy in to the more self-directed learning.

5 Limitations

Undertaking a research project of this nature unavoidably has its limitations of scope, and constraints of time and other resources. The following were the more salient ones.

5.1 Limitation on the application of the Grounded Theory Approach

Thomas and James (2006) summarized that grounded theory had been criticized largely on its status as theory on the notion of 'grounding' and on the claim to use and develop inductive knowledge. They suggested that it was impossible to free oneself of preconceptions in the collection and analysis of data in the way that Glaser and Strauss said was necessary, although they also suggested it was worth keeping the constant comparative method of grounded theory. In other words, it is not possible for the researcher to be completely free of preconceived notions while attempting to be completely open minded and led by the data.

Goulding (2002) pointed out that even if the researcher followed the set of procedures suggested by Strauss and Corbin on data collection, it might not

automatically lead to the development of a theory. She stressed that the researcher needed to remain flexible and open, and be prepared to sample across several groups and possible locations before the data started to make sense — and it was not uncommon for researchers to give up at this point. She emphasized that grounded theory should be used to develop fresh theoretical interpretations of the data rather than explicitly aim for any final or complete interpretation of it and, therefore, it is crucial that when new relevant data are available, the inductively derived theory can be modified.

5.2 Limitation of small size sample of the in-depth interviews

The sample size of nine informants for the in-depth interviews is relatively small. This is due to difficulties in obtaining consent from some suitable participants. There are only a limited number of researchers in e-learning in Hong Kong who, by nature of their dual role of teacher and active researcher, are extremely busy academics. Furthermore, it became obvious that there are weaknesses in relying on data collected from in-depth interviews alone. The practical difficulties of obtaining a large number of informants agreeing to grant an interview, together with subsequently working with the vast volume of data (mainly in text form)

generated from the interviews, make it very difficult, if not impossible, to manage a research project with a limited timeframe and scope.

To overcome this limitation, a mixed method approach was adopted that entailed augmenting the representativeness of the nine interview participants with additional participants through a subsequent Follow-up questionnaire survey. Having them participate in the questionnaire survey was relatively easier because of the perceived reduced time commitment of doing a questionnaire.

As recruiting participants for the interview was very difficult, a 'snowball' technique was employed in reaching more researchers by asking those researchers who already participated in the survey to introduce other researchers (Snowball Sampling). Through the professional network already established by the initial researchers, more researchers were willing to participate in the Follow-up questionnaire survey.

5.3 Limitations of the follow-up questionnaire survey

As Lanford (cited in Loughlin, 1977) pointed out, the form of questions in a questionnaire survey could exert too great an influence on the panel. When

implemented as a questionnaire survey, the wording and phrasing of individual questions coupled with the selection and sequencing of the questions could influence the judgment and evaluations of individual panel members in an undesirable way. Poorly formulated questions may produce self-fulfilling prophecies. To address this limitation, pre-testing the questionnaire was carried out using two of the interview participants. Their feedback helped reduce some of these problems significantly. However, as the questionnaire used in the survey was not an established instrument with extensive field-testing, the validity of the instrument is obviously fairly limited.

5.4 Limitation of data collected from the in-depth interviews

Although all nine interviews basically followed the same set of questions prepared beforehand, different angles and emphases were taken on the same questions by different participants due to the limited time for the interviews. For example, the gender issues were of particular interest to only one of the female participants but that does not necessarily mean the other participants had no position on the subject at all. The absence of any mentioning of gender issues by the other participants could very well result from insufficient time when other issues had taken up more time during the interviews.

Based on the impressions formed during the interviews and the transcripts generated from them, one can sense how each participant stands individually on each question but it is difficult to formulate a collective view for the group. Also, the different choice of words and context make it difficult to be sure of convergence of views even when the same issues were covered by more than one interviewee. Lastly, even with a majority of the nine participants agreeing on a certain issue, the representativeness of any conclusion thus derived may be questioned due to the small sample size.

The Follow-up questionnaire survey was precisely intended to address this limitation. As all the issues mentioned in the interviews were collated and put to all interview participants and the expanded panel of teacher-researchers for response, the extent of having similar views on each issue could be quantified and therefore measured.

5.5 Limitation of using only teachers and students of CLL as informants

The selection of informants in the in-depth interviews was a crucial step in the research design. The project was originally designed to rely on CLL students and

teachers as key informants. However, during the analysis of results of the three rounds of online surveys, it became apparent that the level of understanding of what e-learning really was varied greatly among students and teachers. Their uneven knowledge about e-learning led to certain misunderstanding about the potential benefits and impact of e-learning, which might distort the findings of the study. Moreover, since all the teachers and students were from CLL and therefore likely heavily limited by their experience with the in-house e-learning platform called SLMS, their views could be distorted and not sufficiently represent the general situation of Hong Kong.

To address this limitation, teacher-researchers from other institutions in Hong Kong were deliberately sought for the in-depth interviews and the subsequent Follow-up questionnaire survey.

5.6 Limitation in the Follow-up Questionnaire Survey

As explained previously, this follow-up questionnaire survey without the panel discussions and iterations has its particular drawback. One participant commented that it was difficult to take a position regarding the issues raised because insufficient background information or context was provided with the

questionnaire. This is understandable. A discussion among the panel members could have remedied this problem to some extent. However, such discussions or clarifications by a group of academics could easily lead to time-consuming debates, which may result in an impasse without any conclusions. Furthermore, a discussion process may easily be dominated by certain more outspoken panel members, which may defeat the purpose of obtaining a balanced view on the topic. After experiencing some difficulties in obtaining responses to the questionnaire survey from busy teachers and researchers, setting up several discussion sessions with the whole panel of experts, which implies demanding substantially more time commitments from them, would not seem feasible.

6 Suggestions for further research

In the previous section, a number of limitations to this study were identified. A starting point for any further research would be to investigate the feasibility of improving the research design to overcome some of the limitations.

6.1 A larger sample size for the interviews and subsequent survey

An obvious improvement would be to enlarge the sample size of informants; namely, teacher-researchers in order to strengthen the results of the study.

However, given the limited number of researchers in e-learning in Hong Kong, scope for this may be fairly limited.

6.2 Adding a group discussion and iteration phase

Another obvious suggestion for further study but perhaps very difficult to implement in practice would be to strengthen the enquiry process with the addition of a discussion phase (or phases) to allow feedback and iteration of the views among the panel of experts. Through face-to-face discussions and debates, the panel may reach yet a higher degree of convergence of views on the subject and generate new ideas, bearing in mind perhaps the shortcomings of such a process as mentioned in Section 5.6 above (e.g. dominance of certain more outspoken panel members).

6.3 Contrasting the views of teachers with those of the researchers

The original panel of nine seems to be in reasonable agreement on most of the issues raised to support a claim of convergence of views. However, given the small number of participants involved (nine) and teachers from only three higher educational institutions were involved, it begs the question of how representative these results are in the context of Hong Kong's higher education sector as a

whole. For this reason, more extensive analysis was performed with results obtained from the combined panel. However, the primary aim of the research project was not to contrast and compare the different perspectives on e-learning of teachers and teacher-researchers but rather to obtain the collective views of a group of teachers consisting both of the regular teachers and the more knowledgeable teacher-researchers . Therefore, for the purpose of this research project, no substantial attempt was made to isolate the views of the teacher-researchers from the teachers, although this could be an interesting topic for a follow-up research project.

6.4 e-learning under Web 2.0 or Cloud Computing environment

Because the nature of the study concerns deployment of technologies in teaching and learning, there is a risk of dealing with a moving target with the relatively fast changing technological environment. One of the informants made a very interesting comment about the implication of the new Web 2.0 technology on e-learning. His question was essentially how e-learning would be conducted outside a centralized LMS and with mobile learning such as smart phones.

What he raised is an important Web technology development trend affecting the future of e-learning; that is, the Web 2.0 concept of computing. Web 2.0 technology is a relatively new development that has become popular since late 2004 with the Web 2.0 Conference hosted by O' Reilly Media. However, strictly speaking, Web 2.0 is not about any tangible technological advancement in Web technology but rather it is a term defined in Wikipedia as:

> "..... commonly associated with web applications that facilitate interactive systemic biases, interoperability, user-centered design, and developing the World Wide Web. A Web 2.0 site allows users to interact and collaborate with each other in a social media dialogue as consumers of user-generated content in a virtual community, in contrast to websites where users (prosumers) are limited to the active viewing of content that they created and controlled. Examples of Web 2.0 include social networking sites, blogs, wikis, video sharing sites, services, web, mashups and folksonomies. "
>
> (http://en.wikipedia.org/wiki/Web_2.0 downloaded on 20 December 2010)

While more and more social networking sites such as Facebook, Twitter, Wiki and Blogs are becoming popular, learners are no longer limited to e-learning through the centralized e-learning platform of an institution. Teachers and students can make use of these free social networking sites to channel their learning activities such as online discussions and sharing learning source materials to achieve the learning objectives. The learning community will not be limited to students enrolled on the same course but could be much bigger. An interesting area for further research would be to investigate how such new technological environments would change the teaching and learning context and what adjustments the institutions and teachers need to make for such changes.

7 Reflections on the Study

7.1 Triangulation and reliability of data

As explained previously, this study is guided by the Grounded Theory approach, which means the research direction was led by the data and shifted direction as necessary. One of the problems of having taken this approach and shifting research focus is the extended data collection time. For these reasons and because of other problems encountered, the data collection stage of this research project spanned over a rather long period of six years. I often wonder whether it was worthwhile to have collected so much data and prolonged the duration of data collection. Clearly there are both pros and cons to an extensive data collection period.

On reflection, I can see advantages to this extensive data collection in terms of data reliability. Based on results from the online surveys, a high degree of agreement (please see Chapter 5) existed between the three rounds of surveys, which perhaps reflect a high degree of inter-rater reliability (Palys, 1997) of the inferences being drawn. In addition, the threat of maturation (of the informants) to the internal validity is unlikely to be significant because the long span of five years over which the three rounds of Web surveys took place (2005-2009) would have greatly reduced the likelihood of the same informants participating in more than one round of the surveys.

That means, although the online surveys of the learners and teachers were conducted in different years, their views are remarkably similar and consistent. Furthermore, the results from the online surveys are by and large in harmony with results obtained in the in-depth interviews and in the follow-up questionnaire survey. The three-stage data collection design has helped with triangulating the results and thus strengthening the reliability of the conclusions drawn.

Similarly, there are also validity and reliability implications in collecting data from a follow-up questionnaire survey after collecting data from teachers and teacher-researchers through the in-depth interviews. On the question of validity, as the research project aimed to explore what the teachers and teacher-researchers see as benefits, impact of and barriers to e-learning, involving practising teachers-researchers as informants in the interviews and subsequent follow-up survey obviously enhanced the validity of data collected from the Web teacher surveys. But more important is that triangulation of data collected from the processes: Web surveys, the interviews and the follow-up questionnaire survey — together — greatly enhanced the reliability of the research results.

Attempts were made to obtain a greater number of teacher-researchers for interview and the follow-up survey in order to further enhance the reliability but it was found far more difficult to achieve than anticipated.

7.2 Is e-learning a threat to the central role of teachers?

A common criticism of any form of independent study such as e-learning is what Evans and Nation (1989) warned about — the "separation of teacher and student, the disempowerment of students from making decisions about their own learning" (p. 246). In pure e-learning, learners often experienced isolation and loneliness. The lack of face-to-face contact in an e-learning environment is likely to heighten such feelings of separation. In Hong Kong, not only students tend to dislike such separation but teachers would also resist such distancing that makes the teaching and learning less personalized between them and their students. Such 'de-personalization' of the learning process may be the greatest barrier to diffusion. The popularity of blended learning in Hong Kong gives strong evidence that Hong Kong students and teachers value face-to-face contact very much, and that the only way they would accept e-learning is that there is no reduction of face-to-face contact (with e-learning only an add-on).

However, a major drawback exists in adopting the blended learning mode or introducing e-learning as add-ons; that is, the additional workload placed on teachers. This additional workload must be adequately resourced to sustain the courses in the blended learning mode. In other words, a new process of resource reallocation should take place within the institution rather than merely expecting those enthusiastic teachers to 'absorb' the additional workload; otherwise, other duties such as research output would suffer. The institutions would then face tough choices such as whether to reduce teaching load or to reduce class size. Either case will inevitably lead to the need to hire more teachers, which should not threaten the importance of teachers.

8 Concluding remarks

The heading of a recent article in *USA Today* reads:

> "Web-based teaching degrees skyrocket
>
> 1 in 16 education awards from 1 of 4 online schools"
>
> (USA Today, 9 August 2012)

This somewhat sensational piece of statistics reported in the media perhaps in some way illustrates the revolutionary changes that have been taking place in higher education since the 1990s. Such changes are brought about by, among other agents of change, the Internet, web and multimedia technologies, and the changing needs of learners (Rowley et al., 1998). Whilst it is not the intention to argue here the virtues

or otherwise of such changes, the impact of web-based learning in today's education system seems to deserve greater attention. Academia is facing a strategic choice: either to embrace such changes and re-invent itself, or to be left behind. Bates (2001) argued that not only were educational institutions seriously examining the benefits and impact of e-learning on teaching and learning, but educational policy makers were also particularly keen to investigate using e-learning as a change agent for the education system. He opined:

> "It is not surprising then that **governments in a number of countries are looking at e-learning as one possible means for making post-secondary education more cost-effective, more learner-centred and more economically relevant.**" (Emphasis in original text) (2001, p. 72)

As D. J. Clarke observed: "History is littered with failed attempts to 'revolutionize' learning through innovative technology. Fortunately, these struggles have taught us one very important lesson: in order for technology to improve learning, it must 'fit' into students' lives .... Not the other way around. As a result, e-learning is born." (Clarke, 2002, cited in Romiszowski, 2004)

~ End ~

References

Annand, D. (2007) Re-organizing universities for the information age. *International Review of Research in Open and Distance Learning, Vol. 8, No. 3, November 2007, pp. 1-9.*

Australian Department of Education, Sciences and Training (2005a) *National E-learning Indicators.* Australian Flexible Leaning Framework publications.

Australian Department of Education, Sciences and Training (2005b) *E-learning Indicators.* Australian Flexible Leaning Framework publications.

Australian Department of Education, Sciences and Training (2007a) *2007 E-learning Benchmarking Project: Student Survey.* Australian Flexible Leaning Framework publications.

Australian Department of Education, Sciences and Training (2007b) *2007 E-learning Benchmarking Project: Teacher and Trainer Survey.* Australian Flexible Leaning Framework publications.

Australian Department of Education, Sciences and Training (2008a) *2007 E-learning Benchmarking Project: Student Survey.* Australian Flexible Leaning Framework publications.

Australian Department of Education, Sciences and Training (2008b) *2008 E-learning Benchmarking Project: Teacher and Trainer Survey.* Australian Flexible Leaning Framework publications.

Australian Department of Education, Sciences and Training (2008c) *2008 E-learning Benchmarking Project: Final Report.* Australian Flexible Leaning Framework publications.

Bains, M., Reynolds: A., McDonald, F. & Sherriff, M. (2011) Effectiveness and acceptability of face-to-face, blended and e-learning: a randomized trial of orthodontic undergraduates, *European Journal of Dental Education,* Vol. 15 (2011), pp. 110-117.

Barajas, M. & Gannaway, G. J. (2007) Implementing e-learning in the traditional higher education institutions. *Higher Education in Europe,* Vol. 32, No. 2, pp. 111-119.

Barro, R. & Lee, J. (2010) *A New Data Set of Educational Attainment in the World, 1950-2010.* NBER Working Paper No. 15902, [Online] Available from: http://www.barrolee.com/. [Accessed 14/07/10]

Bates, A. W. (1995) *Technology, Open and Distance Education.* New York/London: Routledge.

Bates, A. W. (2001) National Strategies for E-learning in Post-secondary Education and Training. UNESCO: International Institute for Educational Planning, Paris 2001.

Bates, A. W. & Pool, G. (2003) Effective Teaching with Technology in Higher Education: Foundations for Success. San Francisco: Jossey-Bass.

Biggs, J. (1988) Approaches to learning and to essay writing. In R. R. Schmeck (Ed.), *Learning strategies and learning styles,* Vol. 1, pp. 368, Spring Street, New York: Plenum Press.

Biggs, J. (1992) Why and How do Hong Kong Students Learn? Using the Learning and Study Process Questionnaires. Education Paper No. 14, Faculty of Education, The University of Hong Kong, Hong Kong.

Biggs, J. (1996) Western Misperceptions of the Confucian-heritage Learning Cultural. In Watkins, D. & Biggs, J. (ed.) *The Chinese Learner: Cultural, Psychological and Contextual Influences,* Hong Kong: CERC & ACER, pp. 45-68.

Biggs, J. & Watkins, D. (1993a) The Nature of student learning: a conceptual framework. In Biggs, J & Watkins, D. (eds.) *Learning and Teaching in Hong Kong: What is and what might be,* Education Paper No. 17, Faculty of Education, The University of Hong Kong, Hong Kong, pp. 3-34.

Biggs, J. & Watkins, D. (1993b) What might these studies mean for the theory and practice of education in Hong Kong? In Biggs, J & Watkins, D. (eds.) *Learning and Teaching in Hong Kong: What is and what might be,* Education Paper No. 17, Faculty of Education, The University of Hong Kong, Hong Kong, pp. 203-222.

Biggs, J. & Watkins, D. (1996) The Chinese Learner in Retrospect. In Watkins, D. & Biggs, J. (ed.) *The Chinese Learner: Cultural, Psychological and Contextual Influences,* Hong Kong: CERC & ACER, pp. 269-285.

Birch, D. & Burnett, B. (2009) Bringing academics on board: encouraging institution-wide diffusion of e-learning environments, *Australasian Journal of Educational Technology,* Vol. 25, No. 1, 2009, pp. 117-134.

Bond, M. H, & Hwang, K. K. (1986) The social psychology of the Chinese people. In Bond, M. H. (ed.) (1986) *The Psychology of the Chinese People,* Hong Kong: Oxford University Press, pp. 213-266.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (eds.) (2000) *How People Learn: Brain, Mind, Experience, and School (Expanded edition).* Washington, DC, USA, National Academies Press, c2000, [Online] Available from: [http://site.ebrary.com.eproxy1.lib.hku.hk/lib/hkulibrary/docDetail.action?docID=10038789] [Accessed 23/01/11]

Carley, K. (1994) Content Analysis. In R. E. Asher (ed.), *The Encyclopedia of Language and Linguistics,* Oxford: Pergamon Press.

Carr, S. (2001) Is anyone making money on distance education? *The Chronicle of High Education*, February 16, 2001: A41.

Census and Statistics Department (2009) *Hong Kong as an Information Society,* The Government of Hong Kong Special Administrative Region, People's Republic of China. (http://www.statistics.gov.hk/publication/stat_report/commerce/B11100062009AN09B0100.pdf captured 8th Aug 2011)

Census and Statistics Department (2011) *Hong Kong Census Statistics - May 2010,* The Government of Hong Kong Special Administrative Region, People's Republic of China..

Chan, A. C. M., Philips, D. R. & Fong, F. M. S. (2005) An Exploratory Study of Older Persons' Computer an Internet Usage in Hong Kong, *APAIS Monograph Series No.* 3, Lingnan University, Hong Kong.

Chan, H. K. (1993) The effect of English medium in the primary school years on late achievement. In Biggs, J & Watkins, D. (eds.) *Learning and Teaching in Hong Kong: What is and what might be,* Education Paper No. 17, Faculty of Education, The University of Hong Kong, Hong Kong, pp. 89-100.

Chan, K. (2003) Hong Kong teacher education student's epistemological beliefs and approaches to learning, *Research in Education*, Vol. 69, pp. 36-50.

Charles, C. M. & Mertler, C. (2002) *Introduction to Educational Research.* 4th Edition, Pearson Education.

Cheng, B. (1993) Teaching history in the mother tongue. In Biggs, J & Watkins, D. (eds.) *Learning and Teaching in Hong Kong: What is and what might be,* Education Paper No. 17, Faculty of Education, The University of Hong Kong, Hong Kong, pp. 101-112.

Coyle, J. & Williams, B. (2000) An exploration of the epistemological intricacies of using qualitative date to develop a quantitative measure of user vies of health care. *Journal of Advanced Nursing*, 31 (5), pp. 1235-1243.

Creswell, J. W. (1998) *Qualitative Inquiry and Research Design –Choosing Among Five Traditions.* Thousand Oaks: Sage.

Creswell, J. W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* Thousand Oaks: Sage.

Crossan, E. (2003) Research philosophy: towards an understanding. *Nurse Researcher,* 11 (1), pp. 46-55.

Cusack, S. (2000) Critical Educational Gerontology and the Imperative to Empower. In F. Glendenning (ed.) *Teaching and Learning in Later life: Theoretical Implications,* Hants: Ashgate.

Da Gong Bao [大公報]（2011）通識新世代, 香港長者上網率倍增 Feb 25th p.C03.

Deng, L. & Yuen, A. H. K. (2007) Connecting adult learners with an online community: challenges and opportunities. *Research and Practice in Technology Enhanced Learning*, Vol. 2, No. 3 (2007), 195-212.

Education and Manpower Bureau (2005) *Developing Hong Kong as the Regional education Hub,* CR 1/9/2041/93, Hong Kong Government, Hong Kong: Author.

Evans, T. & Nation, D. (1989) Critical Reflections in Distance Education, In T. Evans & D. Nation (Eds.), *Critical Reflections on Distance Education*, London: Falmer. pp. 237-263.

Fan, F. H. K. (1993) How examinations affect students' approaches to writing. In Biggs, J & Watkins, D. (eds.) *Learning and Teaching in Hong Kong: What is and what might be,* Education Paper No. 17, Faculty of Education, The University of Hong Kong, Hong Kong, pp. 67-76.

Fink, A. (1995) *How to Analyze Survey Data.* Thousand Oaks: Sage Publication.

Fung, Y. Y. H. (2000) Student participation in online discussion: patterns, intentions and barriers. Paper presented at the *14th AAOU Annual Conference*, Manila, Philippines.

Fung, Y. Y. H. (2004) Collaborative online learning: interaction patterns and limiting factors, *Open Learning.* Vol. 19, No. 2, June 2004, pp. 136-149.

Glaser, B.G. (1992) *Basics of Grounded Theory Analysis: Emergence Vs Forcing.* Mill Valley, CA: Sociology Press.

Glaser, B.G. & Strauss, A. (1967) *Discovery of Grounded Theory: Strategies for Qualitative Research.* New York: Aldine.

Glendenning, F. (2000) Some Critical Implications. In F. Glendenning (ed.) *Teaching and Learning in Later life*: Theoretical Implications, Hants: Ashgate.

Goulding, C. (2002) *Grounded Theory: A Practical Guide for Management, Business and Market Researchers.* London: Sage.

Gow, L. Balla, J. Kember, D. & Hau, K. T. (1996) The learning approaches of Chinese People: a function of socialization processes and the context of learning? In Bond, M. H. (ed.) *The Handbook of Chinese Psychology,* Hong Kong: Oxford University Press, pp. 109-123.

Harasim, L., Hiltz, S. R., Teles, L. & Turoff, M. (1995) *Learning Networks: A Field Guide to Teaching and Learning Online,* Cambridge, Mass: The MIT Press.

Hartshorne, R. Ajjan, H. & Ferdig, R. E. (2010) Faculty use and perceptions of Web 2.0 in higher education. In H. Yang & S. Yuen (eds.) *Handbook of Research on Practices and Outcomes in E-learning: Issues and Trends*, IGI Global, pp. 241-259.

HKU SPACE (2008) *Survey on the Demand for Continuing Education in Hong Kong 2007/2008: Comparison and Analysis.* No. 002.2008, Centre for Research in

Continuing Education and Lifelong Learning, HKU SPACE, University of Hong Kong, Hong Kong.

HKU SPACE (2010a) *Survey on the Demand for Continuing Education in Hong Kong 2009/2010: Comparison and Analysis.* No. 002.2010, Centre for Research in Continuing Education and Lifelong Learning, HKU SPACE, University of Hong Kong, Hong Kong.

HKU SPACE (2010b) *Survey on the Study Needs and Plans of HKU SPACE Alumni Members (2009).* No. 001.2010, Centre for Research in Continuing Education and Lifelong Learning, HKU SPACE, University of Hong Kong, Hong Kong.

Ho, J. W. Y. (2007) Code-mixing: Linguistic form and socio-cultural meaning. *The International Journal of Language Society and Culture*, 21, 2007.

Ho, S. S. (2010) Learning online or in the classroom? Preference of working adults in Hong Kong. *Proceedings of ICT2010*, 30 June, Singapore, pp. 56-62.

Hong Kong Government (2000) *The 2000 Policy Address,* The Government of the Hong Kong Special Administrative Region, People's Republic of China.

Hong Kong Government (2001) *The 2001 Policy Address,* The Government of the Hong Kong Special Administrative Region, People's Republic of China.

Howe, K. R. (1988) Against the quantitative-qualitative incompatibility thesis or dogmas die hard. *Educational Researcher,* November, 1988, pp. 10-16.

Internet World Stats (2010) *Usage and Population Stats,* http://www.internetworldstats.com/stats3.htm, captured on 13 July 2010)

Jarvis: (1995) *Adult and Continuing Education: Theory and Practice*. London: Routledge/Falmer.

Jarvis: (2001) *Learning in Late Life*. London: Kogan Page.

Jochems, W., van Merrienboer, J. & Koper, R. (2004) An introduction to integrated e-learning. In W. Jochems, J. van Merrienboer, & R. Koper (eds.) *Integrated e-Learning: Implications for Pedagogy, Technology & Organization.* London: Routledge/Falmer, pp. 1-11.

Johnson, R. B. & Onwuegbuzie, A. J. (2004) Mixed methods research: a research paradigm whose time has come. *Educational Researcher*, Vol. 33, No. 7, pp14-26.

Johnson, R. K. & Ngor, A. Y. S. (1996) Coping with second language texts: the development of lexically-based reading strategies. In D. A. Watkins & J. B. Biggs (ed.) The Chinese Learner: Cultural, Psychological and Contextual Influences, Hong Kong: CERC and ACER, pp. 123-140.

Karrer, T. (2007) *Understanding e-Learning 2.0*. Learning Circuits: ASTD. (http://www.astd.org/LC/2007/0707_karrer.htm) [Accessed 21/02/12]

Keats, D. & Schmidt, J. P. (2007) The genesis and emergence of Education 3.0 in higher education and its potential for Africa. In *Firstmonday,* 12. [Online] Available from: http://www.firstmonday.org/issues/issue12_3/keats/index.html. [Accessed 23/01/11]

Keller, C. & Cernerud, L. (2002) Students' perceptions of e-learning in university education. *Journal of Educational Media*, Vol. 27, Nos. 1-2, 2002, pp. 55-67.

Kember, D. (2000) Misconceptions about the learning approaches, motivation and study practices of Asian students, *Higher Education,* Vol. 40, pp. 99-121.

Kember, D., & Gow, L. (1990) Cultural specificity in approaches to study. *British Journal of Educational Psychology,* Vo. 60, pp. 356-363.

Kember, D., & Murphy, D. (1990) Alternative New Directions for Instructional Design. *Education Technology,* 30(8), 42-47.

Kirby, J. R., Woodhouse, R. A. & Ma, Y. (1996) Studying in a second language: the experience of Chinese students in Canada. In D. A. Watkins & J. B. Biggs (ed.) The Chinese Learner: Cultural, Psychological and Contextual Influences, Hong Kong: CERC and ACER, pp. 141-158.

Knowles, M. S. (1980) *The Modern Practice of Adult Education: From Pedagogy to Androgogy,* Cambridge Adult Education, Englewood: Prentice Hall.

Knowles, M. S. & Associates (1984) *Androgogy in Action*, San Francisco: Jossey-Bass.

Knowles, M. S. (1990) *The Adult Learner: A Neglected Species,* 4th edition, Houston: Gulf Publishing.

Knowles, M. S. (1995) *Designs for Adult Learning,* Alexandria: American Society for Training and Development.

Legislative Council (2006) *Official Records of Proceedings,* No 3893, 1821 June January 2006, Legislative Council of Hong Kong.

Lam, J. & Cheung, K. S. (2008) Comparing Views on E-learning between Full-time and Part-time Learners. *Proceedings of the International Conference on ICT in Teaching and Learning,* Hong Kong: Open University of Hong Kong, 2008, pp. 119-128.

Lam, J., Lau, N., Yau, F. K. & Cheung, K. S. (2009) A Survey on the Readiness in Adopting e-Learning among Teachers and Students. In J. Fong et al. (eds.), *Hybrid Learning: The New Frontier,* Hong Kong: City University of Hong Kong Press, pp. 143-158.

Laslett: (1996) *A Fresh Map of Life: The Emergence of the Third Age*, 2nd ed., London: Macmillan.

Lau, S. K. & Kuan, H. C. (1988) *The Ethos of the Hong Kong Chinese.* Hong Kong: The Chinese University Press. .

Laurillard, D. (1993) *Rethinking University Teaching: A Framework for the Effective Use of Education Technology.* New York/London: Routledge.

Lê, Thao & Shi, Li (2006) Chinese Background Students' Learning Approaches. Australian Educational Researcher, AARE, Nov- Dec, 2006.

Lee, A. T. (2001) Cultural barriers to the learning organization in Chinese society. *Proceedings of the Fourth International Conference for Organizational Learning and Knowledge Management,* June 2001, Ivey School of Business, London, Ontario, pp. 1-10.

Lee, W. O. (1996) The cultural context for Chinese learners: conceptions of learning in the Confucian tradition. In D. A. Watkins & J. B. Biggs (ed.) *The Chinese Learner: Cultural, Psychological and Contextual Influences*, Hong Kong: CERC & ACER, pp. 25-42.

Leung, L. (2002) Loneliness, self-disclosure, and ICQ ("I seek you") use. *Cyber Psychology & Behavior,* Vol. 5, Number 3, 2002, pp. 241-251.

Li, D. C. S. (2000) Cantonese-English code-switching research in Hong Kong: a Y2K review. *World Englishes,* Vol. 19, No. 3, 2000, pp. 305-322.

Li, F., Ding, X. & Morgan, W. J. (2008) Job search channels and educational level in China: Testing the screening hypothesis, *China: An International Journal,* Vol. 6, No. 2, September 2008, pp. 261 – 277.

Lin, A. M. Y. (2000) Deconstructing "Mixed Code". In Li, D. C. S., Lin, A. M. Y., & Tsang, W. K. (eds.), *Language and Education in postcolonial Hong Kong,* Hong Kong: Linguist Society of Hong Kong.

Lipman, A. J., Sade, R. M., Glotzbach, A. L., Lancaster, C. J. & Marshall, M. F. (1999) The incremental value of internet-based instructions: a prospective randomized study, *Academy of Medicine 2001*; Vol. 76, No. 10, pp. 72-76.

Litwin, M. S. (1995) *How to Measure Survey Reliability and Validity.* Thousand Oaks: Sage.

Litwin, M. S. (2003) *How to Assess and Interpret Survey Psychometrics (2nd edition).* Thousand Oaks: Sage.

Loughlin, K. G., (1977) *The Use of "Delphi" Technique in Conjunction with Activity Analysis to Obtain Congruency of Objectives and Activities within an Academic Medical Department. U*npublished thesis (MSc), University of British Columbia.

Ma, W. W. K. & Yuen, A. H. K. (2008) News writing using wiki: impacts on learning experience of student journalists. *Educational Media International,* Vol. 45, No. 4, December 2008, pp. 295-309.

Mason, J. (1996) *Qualitative Researching.* London: SAGE Publications.

Mason, R. (1994) Distance Education Across National Borders. In M. Thorpe & D. Grugeon, (eds.) *Open Learning in the Mainstream,* Harlow, Essex: Longman Group Limited pp. 297–308. In World Bank Global Distance eDUCATIONET. [Online] Available from: (http://wbweb4.worldbank.org/DistEd/Policy/Global/coll-03.html [Accessed 03/05/07]

Miles, M. B. & Huberman, A. M. (1994) *Qualitative Data Analysis – an expanded source book (2nd ed.),* Thousand Oaks, Sage Publications.

Mok, J. K-H., & Currie, J. (2002) Reflections on the impact of globalization on educational restructuring in Hong Kong. In J. K-H. Mok & D. K-K. Chan (Eds.). *Globalization and Education: The quest for quality education in Hong Kong (pp. 259-278). Hong Kong: Hong Kong University Press.*

Morris, D. (2008) Economies of scale and scope in e-learning. *Studies in Higher Education,* Vol. 33, No. 3, June 2008, pp. 331-343.

Muilenburg, L. Y. & Berge, Z. L. (2005) Student barriers to online learning: a factor analytic study. *Distance Education,* Vol. 26, No. 1, May 2005, pp. 29-48.

Mungania: (2003) *The Seven E-learning Barriers Facing Employees.* Masie Center, e-Learning Consortium, October 2003.

Newman, I. & Benz C. R. (1998) *Qualitative-Quantitative Research Methodology: exploring the interactive continuum,* Southern Illinois University Press, Carbondale, USA.

Newton, R. (2003) Staff attitudes to the development and delivery of e-learning. *New Library World,* Vol. 104, No. 11193-2003, pp. 412-425.

Ng, K. C. (2000) Cost and effectiveness of online courses in distance education. *Open Learning,* Vol. 15, No. 3, 2000, pp. 301-308.

Ng, K. C., Murphy, D. & Jenkins, W. (2002) The teacher's role in supporting a learner-centred learning environment: voices from a group of part-time postgraduate students in Hong Kong. *International Journal of Lifelong Education,* Vol. 21, No. 5, September-October 2002, pp. 462-473.

Nichols, M. (2008) Institutional perspectives: the challenges of e-learning diffusion. *British Journal of Educational Technology,* Vol. 39, No. 4, 2008, pp. 598-609.

Office of the Government Chief Information Officer (2007) 2008 *Digital 21 Strategy,* Commerce and Economic Development Bureau, The Government of the Hong Kong Special Administrative Region, People's Republic of China. (http://www.digital21.gov.hk/download/2008D21S-booklet-en.pdf)

Pajo, K. & Wallace, C. (2001) Barriers to the uptake of Web-based technology by university teachers. *The Journal of Distance Education,* Vol. 16, No. 1, pp. 70-84.

Palys, T. (1997) *Research Decisions: Quantitative and Qualitative Perspectives.* Harcourt Brace, Canada.

Pan, L. C. (2006) *No Pain, No Gain: An Investigation of the Concept of Persistence in Learning in a Taiwanese College Program.* Unpublished thesis (EdD), Australian Catholic University, Fitzroy, Australia, July 2006.

Panda, S. & Mishra, S. (2007) E-learning in a mega open university: faculty attitude, barriers and motivators. *Educational Media International,* Vol. 44, No. 4, December 2007, pp. 323-338.

Parker, J. T. & Taylor: G. (1980) *The Follow-up questionnaire survey: CBAE through the Eyes of Leading Educators.* Fearon Pitman Publishers Inc: Belmont, California.

Ponterotto, J. G. (2005) Qualitative research in counseling psychology: a primer on research paradigms and philosophy of science. *Journal of Counseling Psychology,* 2005, Vol. 52, No. 2, pp. 126-136.

Postman, N. (1992) *Technopoly: The Surrender of Culture to Technology.* New York: Vintage Books.

Redecker, C. (2009) *Review of Learning 2.0 Practices: Study on the impact of Web 2.0 innovations on education and training in Europe.* Joint Research Centre: European Commission. (http://ftp.jrc.es/EURdoc/JRC49108.pdf) [Accessed 21/02/12]

Roberts, R. (2010) The digital generation and Web 2.0: e-learning concern or media myth? In H. Yang & S. Yuen (eds.) *Handbook of Research on Practices and Outcomes in E-learning: Issues and Trends*, IGI Global, pp. 93-115.,

Rogers, A. (2002) *Teaching Adults*, 3rd edition, Buckingham: Open University Press.

Rogers, E. M. (2003) *Diffusion of Innovations.* 5th edition, New York: The Free Press.

Romiszowski, A. (2004) How's the e-learning baby? : Factors leading to success or failure of an educational technology innovation. *Education Technology,* January-February 2004, Vol. 44, No. 1, pp. 5-27.

Rosenberg, M. J. (2001) *E-learning: Strategies for Delivering Knowledge in the Digital Age.* McGraw-Hill.

Rowley, D. J., Lujan, H. D. & Dolence, M. G. (1998) *Strategic Choices for the Academy: How Demand for Lifelong Learning will Re-create Higher Education.* San Francisco: Jossey-Bass.

Schaie, K. W. (2005) *Developmental Influences on Adult Intelligence – The Seattle Longitudinal Study.* New York: Oxford University Press.

Schuller, T., Preston, J., Hammond, C., Brassett-Grundy, A. & Bynner, J. (2004) *The Benefits of Learning – The Impact of Education on Health, Family Life and Social Capital.* London: Routledge/Falmer.

Shin, N. & Chan, J. K. Y. (2004) Direct and indirect effects of online learning on distance education. *British Journal of Educational Technology,* Vol. 35, No. 3, 2004 pp. 275-288.

Strauss, A. & Corbin, J. (1990) *Basis of Qualitative Research: Grounded Theory Procedures and Techniques.* California: Sage.

Strauss, A. & Corbin, J. (1990) *Basis of Qualitative Research: Grounded Theory Procedures and Techniques.* California: Sage.

Tang, C. & Biggs, J. (1996) How Hong Kong students cope with assessment, In Watkins, D. & Biggs, J. (ed.) *The Chinese Learner: Cultural, Psychological and Contextual Influences,* Hong Kong: CERC & ACER, pp. 159-182.

Thomas, G. & James, D. (2006) Reinventing Grounded Theory: Some Questions about Theory, Ground and Discovery. *British Education Research Journal,* Vol. 32, No. 6, 2006, pp. 767-795

Turner, E. (2005) Managing an Ageing Problem. *South China Morning Post*, April 9.

Tyan, K. J. (2003) *Diffusion Barriers to e-learning in Corporate Taiwan: A Factor Analysis of Practitioners' perspectives (China).* Unpublished thesis (PhD), Indiana University.

United Kingdom, Quality Assurance Agency for Higher Education (2011) *Quality Update International,* May 2011, Gloucester, QAA.

Wallhaus, R. A. (2000) E-Learning: From Institutions to Providers, from Students to Learners. In R. N. Katz & D. G. Oblinger (Eds.) *The ''E'' is for Everything,* San Francisco: Jossey Bass.

Watkins, D. (1996) Learning theories and approaches to research: A cross-cultural perspective. In D. A. Watkins & J. B. Biggs (eds.) *The Chinese Learner: Cultural, Psychological and Contextual Influences,* Hong Kong: CERC & ACER, University of Hong Kong, pp. 3-24.

Watkins, D., & Biggs, J. eds., (1996) *The Chinese Learner: Psychological and Pedagogical perspectives,* Hong Kong: CERC & ACER, University of Hong Kong.

Watkins, D., & Biggs, J. eds., (2001) *Teaching the Chinese Learner: Cultural, Psychological and Contextual Influences,* Hong Kong: CERC & ACER, University of Hong Kong.

Weber, R. P. (1990) *Basic Content Analysis.* 2nd edition, Newbury Park, CA: SAGE Publications.

Webopedia (2011) *Web 2.0,* [Online], Available from: [Accessed 03/03/11] www.webopedia.com/TERM/W/Web_2_point_0.html.

Wilson, G. & Stacey, E. (2004) Online interaction impacts on learning: Teaching the teachers to teach online. *Australian Journal of Educational Technology,* 2004, Vol. 20, No. 1, pp. 33-48.

Wong, A. L. S (2007) Cross-cultural Delivery of e-Learning Programmes: Perspectives from Hong Kong. *International Review of Research in Open and Distance Learning*, Vol. 8, No 2, 2007.

Woodruff, E., Brett, C., & Macdonald, R. (1998) Participation in Knowledge-Building Communities to Promote Teaching Competency in Mathematics. *Paper presented at the Annual Meeting of the Canadian Society for Studies in Education*, Ottawa, May 1998.

Yuen, A. H. K., Law, N., Lee, M. W. & Lee, Y. (2010) *The Changing Face of Education in Hong Kong.* Centre for Information Technology in Education, The University of Hong Kong, Hong Kong.

Yuen, A., Fox, R., Sun, A. & Deng, L. (2009) Course management systems in higher education: understanding student experiences. *Interactive Technology and Smart Education,* Vol. 6, No. 3, 2009, pp. 189-205.

Yuen, K. S., Lee, S. W., & Tsang, E. (2011) Reasons for dropping out in distance learning, *International Journal of Continuing Education and Lifelong Learning*, Vol. 3, No. 2, pp. 25-42.

Zhang, L. F. (2000) University students' learning approaches in three cultures: an investigation of Bigg's 3P model. *The Journal of Psychology*, Vol. 134, No. 1, pp. 37-55.

Zhang, W. Y. (2004) Quality assurance online: development, validation, and utilization of the Online Learning Environment Scales (PLES), *Distance Education in China,* 2004, pp. 173-184.

Zhang, W. Y. & Perris, K. (2004) Researching the efficacy of online learning: a collaborative effort amongst scholars in Asian open universities. *Open Learning,* Vol. 19, No. 3, November 2004, pp. 247-264.

List of Appendices

Appendix A

Sample Invitation to teachers to participate in the Web survey & questionnaire

Dear Colleagues,

May I invite you to participate in a research project that investigates the impact and benefits of e-learning. Please share your views on what impact and benefits, if any, have had on your students and yourself that you think can be attributed to e-learning.

You will need about 10 minutes to complete the questionnaire. The information you provided will only be used for statistical analysis and will be treated with the strictest confidence.

Thank you.

Sincerely,
Andrew Wong,
CIO, HKU *SPACE*

P.S. In addition, I am interested in obtaining a deeper understanding of your views on the impact and benefits of e-learning and would like to have a short interview with you. If you would be willing to have a chat with me about your experience with e-learning, please let me have your contact information.

Name: _____

Tel No.: _____

E-mail address: _____

Thank you very much!

各位老師：

本人誠邀閣下參與一項有關網上學習的研究計劃。是項調查的目的，是研究網上學習對學員的影響，以及其如何令學員受惠。如閣下最近有網上教學的經驗，並從教學過程中了解到其對學生所帶來的影響，希望閣下願意與我們分享有關經驗。

完成問卷調查的時間約需五分鐘。閣下所提供的資料會作統計分析用途，並會被嚴格保密。

謝謝！

香港大學專業進修學院
資訊總監
黃立生謹啟

另外我亦有意較深入了解閣下學員有關網上學習的得益和影響, 如閣下願意與我分享有關經驗, 請提供通訊資料作聯絡之用。

姓名:_____

電話:_____

電郵: _____

Part I. Personal Information

第一部分 - 個人資料

1. **Your age is:**
   你的年齡組別是:

Below 25 25 歲以下	25-49 25 至 49 歲	50 & above 50 歲或以上
☐	☐	☐

2. **Which subject area that you have recently taught?**
   你最近正教授哪個科目?
   (pull-down menu)
   - O BUSINESS & MANAGEMENT
     工商管理
   - O MARKETING, COMMUNICATIONS & JOURNALISM
     市場推廣及傳播
   - O LOGISTICS, TRANSPORT & SUPPLY CHAIN MANAGEMENT
     物流、運輸及供應鏈管理
   - O ACCOUNTING
     會計
   - O FINANCE, INVESTMENT & INSURANCE
     財務、金融投資及保險
   - O LAW & PUBLIC ADMINISTRATION
     法律及公共行政
   - O EDUCATION & SOCIAL SCIENCE
     教育及社會科學
   - O INFORMATION TECHNOLOGY STUDIES & APPLICATIONS
     資訊科技及應用
   - O ARCHITECTURE & INTERIOR DESIGN
     建築及室內設計
   - O CONSTRUCTION, OCCUPATIONAL SAFETY & ENVIRONMENTAL SCIENCE
     建造環境、職業安全及環境科學
   - O ART & DESIGN
     藝術及設計
   - O MUSIC, DANCE & PERFORMING ARTS
     音樂、舞蹈及表演藝術
   - O LIVING & LEISURE
     生活消閒
   - O LANGUAGE, LITERATURE & TRANSLATION
     語言、文學及翻譯
   - O CHINESE MEDICINE
     中醫藥
   - O HEALTH & MEDICAL SCIENCE
     醫藥與健康
   - O Others
     其他
     Please specify:
     請說明: ☐

3. **The class size of your course/subject is:**
   你所教授的課程/學科的學生人數是:

Below 20 20 人以下	21-40 21 至 40 人	41 & above 41 人或以上
☐	☐	☐

Part II. Your Experience with e-Learning as a Teacher

第二部分 - 在教學期間使用網上學習的經驗

1 = very rarely / never 甚少/從不使用
2 = occasionally 間中使用
3 = regularly 通常使用
4 = very frequently 經常使用

4. In your teaching, you have made use of the following e-Learning tools to:
你在教學過程中，使用以下的網上學習工具於:

		1	2	3	4
a)	Provide course materials online 網上提供課程資料	☐	☐	☐	☐
b)	Provide additional online learning resources [e.g. Websites or e-Journals] 提供額外網上學習資源 [如: 網頁或網上期刊]	☐	☐	☐	☐
c)	Communicate with learners by e-mails 利用電郵與學生通訊	☐	☐	☐	☐
d)	Use Conference or Forum to engage learners in online discussions (asynchronously) 使用會議或論壇讓學生參加網上討論(離線)	☐	☐	☐	☐
e)	Use Chat Room to engage learners in online discussion (synchronously) 使用聊天室讓學生參加網上討論(同步在線)	☐	☐	☐	☐
f)	Provide online videos of lectures/tutorials [e.g. e-lecture] 提供網上錄影的演講/講解[如: e-lecture]	☐	☐	☐	☐
g)	Accept online assignments submission 接受網上提交作業	☐	☐	☐	☐
h)	Provide course announcement or other course-related information online 提供課程告示或其他有關的資料	☐	☐	☐	☐

Other uses or comments
其他用途或意見:

1 = strongly disagree 非常不同意
2 = disagree 不同意
3 = no opinion 沒有意見
4 = agree 同意
5 = strongly agree 非常同意

5. How do you describe your experience in using SOUL in your teaching?
你在教學中使用 SOUL 的網上學習工具,有以下的經驗:

		1	2	3	4	5
a)	Using SOUL makes me feel more connected to the course. 使用 SOUL 令我覺得更加與課程連在一起	☐	☐	☐	☐	☐
b)	Using SOUL in my courses meets my needs. 使用 SOUL 迎合我的需要	☐	☐	☐	☐	☐
c)	Using SOUL in my courses meets my expectations. 使用 SOUL 能達到我的期望	☐	☐	☐	☐	☐
d)	Using SOUL in my courses has increased my interest in teaching topics. 使用 SOUL 增加我對所教授課題的興趣	☐	☐	☐	☐	☐
e)	Using SOUL in my courses helps me to teach more efficiently. 使用 SOUL 幫助我更有效率地教學	☐	☐	☐	☐	☐
f)	Using SOUL enhances my teaching experience. 使用 SOUL 增加我的教學經驗	☐	☐	☐	☐	☐
g)	I need more training in using SOUL. 我需要多些使用 SOUL 的訓練	☐	☐	☐	☐	☐

Comments
意見:

Part III. Your Prior Experience with e-Learning as a Learner

第三部分 – 在過去作爲學員時的網上學習經驗

1 = very rarely / never 甚少/從不使用
2 = occasionally 間中使用
3 = regularly 通常使用
4 = very frequently 經常使用

6. In your own learning in the past, you have used the following e-Learning tools to:
你在過去學習過程中，使用以下的網上學習工具於:

		1	2	3	4
a)	Receive course materials online 網上接收課程資料	☐	☐	☐	☐
b)	Have access to a collection of reference materials online [such as reference Web sites, articles, e-Journals, books, etc] 使用網上學習資源 [如:網頁、網上期刊或參考書籍]	☐	☐	☐	☐
c)	Communicate with Professors/teachers and/or fellow students online (one to one) 與老師和/或同學網上通訊 (一對一)	☐	☐	☐	☐
d)	Participate in an online discussion forum (asynchronously) 使用會議或論壇參加網上討論(離線)	☐	☐	☐	☐
e)	Chat or discuss with Professors/teachers and/or fellow students through an online Chat Room (synchronously) 使用聊天室與老師和/或同學進行網上討論(同步在線)	☐	☐	☐	☐
f)	View online videos of lectures/tutorials [e.g. e-lecture] 觀看網上錄影的演講/講解[如: e-lecture]	☐	☐	☐	☐
g)	Submit assignments online 網上提交作業	☐	☐	☐	☐
h)	Receive course announcements or other course-related in formation online 網上接收課程告示或其他有關的資料	☐	☐	☐	☐

Other uses or comments
其他用途或意見:

1 = strongly disagree 非常不同意
2 = disagree 不同意
3 = no opinion 沒有意見
4 = agree 同意
5 = strongly agree 非常同意

7. **Comparing e-learning [or online learning] with the traditional face-to-face mode of learning, you believe:**
你相信以新的教學模式 - 網上教學和傳統面授式教學相比:

		1	2	3	4	5
a)	E-learning made my learning more interesting 網上學習令我的學習更加有趣	☐	☐	☐	☐	☐
b)	E-learning made my learning easier 網上學習令我的學習更加容易	☐	☐	☐	☐	☐
c)	E-learning allowed me to learn at my own pace 網上學習容許我以自己的進度去學習	☐	☐	☐	☐	☐
d)	E-learning created more incentives for me to study 網上學習能夠推動我去學習	☐	☐	☐	☐	☐
e)	E-learning is more personalized 網上學習比較個人化	☐	☐	☐	☐	☐
f)	E-learning fostered my personal responsibility for learning 網上學習能夠培養我對學習的責任感	☐	☐	☐	☐	☐
g)	E-learning provided more feedback opportunities 網上學習讓我有更多回應的機會	☐	☐	☐	☐	☐
h)	E-learning promoted greater participation and interaction in class 網上學習促進在課堂上的參與和互動	☐	☐	☐	☐	☐
i)	Fellow students and I were encouraged to seek additional resources/reference materials online. 網上學習促使我們在網上搜尋額外學習資源或參考資料	☐	☐	☐	☐	☐
j)	E-learning helped us outside classroom. 網上學習能夠協助課堂以外的學習	☐	☐	☐	☐	☐
k)	E-learning helped us to work together as a group. 網上學習能夠促進同學之間的合作	☐	☐	☐	☐	☐
l)	E-learning helped teachers to be more successful. 網上學習能夠令老師的教學更加成功	☐	☐	☐	☐	☐

Comments
意見:

Part IV. Other e-Learning Platforms

第四部分 – 其他網上學習工具

8. Which e-Learning tools/Learning Management Systems that you have used other than SOUL?
你曾使用哪些其他網上學習工具:
(Multiple selection is allowed)

- ☐ None
- ☐ WebCT™
- ☐ Blackboard ™
- ☐ Moodle ™
- ☐ Lotus Learning Space ™
- ☐ FirstClass ™
- ☐ Others
  其他
  Please specify:
  請說明: _____

If the answer of Q.8 is None, please go to Question 11.
如沒有, 請跳至第五部分。

9. How long have you used this/these e-Learning tools/Learning Management Systems?
曾使用這些網上學習工具多久?

- O 1-6 months
- O 6-12 months
- O 1-2 years
- O 2-3 years
- O 3 years or more

10. Comparing SOUL with other e-Learning tools, what features you found them useful but not available on the SOUL system?
以 SOUL 和其他網上學習工具比較，請列出哪一些輔助工具能支援你的教學，而不能在 SOUL 找到?

Part V. Other Comments

第五部分 – 其他意見

11. Other views on e-Learning or SOUL System
你對網上學習或 SOUL 系統的其他看法:

- End -

Thank you once again for completing this questionnaire. All the information provided by you will be kept confidential. It will be used for statistical analysis only.

謝謝完成此問卷。閣下所提供的資料會被嚴格保密，並只作統計分析用途。

Appendix B

Sample Invitation to students to participate in the Web survey & questionnaire

Dear Students,

You have recently been engaging in a programme of learning. May I invite you to participate in a research project that investigates the impact and benefits of e-learning to learners. Please share your views on what impact and benefits, if any, have had on you that you think can be attributed to this recent learning experience through e-learning.

The information you provided are for statistical analysis and will be treated with the strictest confidentiality.

Thank you.

Sincerely,
Andrew Wong,
CIO, HKU *SPACE*

P.S. In addition, I am interested in obtaining a deeper understanding of your views on the impact and benefits of e-learning and would like to have a short interview with you. If you would be willing to have a chat with me about your experience with e-learning, please let me have your contact information.

Name: _____

Tel No.: _____

E-mail address: _____

Thank you very much!

各位學員：

得悉閣下正修讀持續進修課程，故誠邀閣下參與一項相關的研究計劃。是項計劃的目的是研究網上學習對學員的影響，以及其如何令學員受惠。如閣下最近有網上學習的經驗，並從學習過程中得益或感受到網上學習帶來的影響，希望你願意與我分享有關經驗充實此研究計劃內容。

閣下所提供的資料會作統計分析用途，並會被嚴格保密。

謝謝！

香港大學專業進修學院
資訊總監
黃立生謹啟

另外我亦有意較深入了解閣下有關網上學習的得益和影響，如閣下願意與我分享有關經驗，請提供通訊資料作聯絡之用。

姓名:_____

電話:_____

電郵: _____

Part I. Personal Information

第一部分 - 個人資料

12. Your age is:
你的年齡組別是:

Below 25 25 歲以下	25-49 25 至 49 歲	50 & above 50 歲或以上
☐	☐	☐

13. Which subject area that you have recently studied?
你最近正修讀哪個科目?
(pull-down menu)

- O BUSINESS & MANAGEMENT
  工商管理
- O MARKETING, COMMUNICATIONS & JOURNALISM
  市場推廣及傳播
- O LOGISTICS, TRANSPORT & SUPPLY CHAIN MANAGEMENT
  物流、運輸及供應鏈管理
- O ACCOUNTING
  會計
- O FINANCE, INVESTMENT & INSURANCE
  財務、金融投資及保險
- O LAW & PUBLIC ADMINISTRATION
  法律及公共行政
- O EDUCATION & SOCIAL SCIENCE
  教育及社會科學
- O INFORMATION TECHNOLOGY STUDIES & APPLICATIONS
  資訊科技及應用
- O ARCHITECTURE & INTERIOR DESIGN
  建築及室內設計
- O CONSTRUCTION, OCCUPATIONAL SAFETY & ENVIRONMENTAL SCIENCE
  建造環境、職業安全及環境科學
- O ART & DESIGN
  藝術及設計
- O MUSIC, DANCE & PERFORMING ARTS
  音樂、舞蹈及表演藝術
- O LIVING & LEISURE
  生活消閒
- O LANGUAGE, LITERATURE & TRANSLATION
  語言、文學及翻譯
- O CHINESE MEDICINE
  中醫藥
- O HEALTH & MEDICAL SCIENCE
  醫藥與健康
- O Pre-Associate Degree
  副學士先修課程
- O Others
  其他
  Please specify
  請說明: ☐

14. Your highest educational attainment is:
你的最高學歷程度是:

F.3 & below 中三或以下	F.4 – F.7 中四至中七	Post-Secondary 專上學位	University 學士學位	Master / PhD 碩士/博士學位
☐	☐	☐	☐	☐

Part II. Use of e-Learning Tools During Study

在學習期間使用網上學習工具

1 = very rarely / never 甚少/從不使用
2 = occasionally 間中使用
3 = regularly 通常使用
4 = very frequently 經常使用

15. In your study, you have made use of the following e-Learning tools to:
你在學習中使用以下的網上學習工具:

		1	2	3	4
i)	Surf the internet and use search engines for information 瀏覽網頁和使用查尋引擎	☐	☐	☐	☐
j)	Communicate with teacher or other student by E-mails 利用電郵與老師或其他學生通訊	☐	☐	☐	☐
k)	Use Conference or Forum to participate in online discussions (asynchronously) 使用會議或論壇參加網上討論(離線)	☐	☐	☐	☐
l)	Use Chat Room to participate in online discussion (synchronously) 使用聊天室參加網上討論(同步在線)	☐	☐	☐	☐
m)	Study course material online 網上閱讀課程資料	☐	☐	☐	☐
n)	Watch online videos of lectures/tutorials [e.g. e-lecture] 觀看網上錄影的演講/講解[例如: e-lecture]	☐	☐	☐	☐
o)	Hand in assignments online 網上提交作業	☐	☐	☐	☐
p)	Receive course announcements or other course-related information online 網上接收課程告示或其他有關的資料	☐	☐	☐	☐

Other uses or comments

其他用途或意見:

16. **How do you describe your experience in using SOUL in your study?**
你在學習中使用 SOUL 的網上學習工具,有以下的經驗:

1 = strongly disagree 非常不同意
2 = disagree 不同意
3 = no opinion 沒有意見
4 = agree 同意
5 = strongly agree 非常同意

		1	2	3	4	5
h)	Using SOUL makes me feel more connected to the course. 使用 SOUL 令我覺得更加與課程連在一起	☐	☐	☐	☐	☐
i)	Using SOUL in my courses meets my needs. 使用 SOUL 迎合我的需要	☐	☐	☐	☐	☐
j)	Using SOUL in my courses meets my expectations. 使用 SOUL 能達到我的期望	☐	☐	☐	☐	☐
k)	Using SOUL in my courses has increased my interest in learning topics. 使用 SOUL 增加我對學習課題的興趣	☐	☐	☐	☐	☐
l)	Using SOUL in my courses helps me to study more efficiently. 使用 SOUL 幫助我更有效率地學習	☐	☐	☐	☐	☐
m)	Using SOUL enhances my learning experience. 使用 SOUL 增加我的學習經驗	☐	☐	☐	☐	☐
n)	I need more training in using SOUL. 我需要多些使用 SOUL 的訓練	☐	☐	☐	☐	☐

Comments
意見:

Part III. Impact and Benefits of Learning in general and particularly e-Learning

1 = strongly disagree 非常不同意
2 = disagree 不同意
3 = no opinion 沒有意見
4 = agree 同意
5 = strongly agree 非常同意

17. As a result of your learning, you actually gained the following benefits:
你從學習獲得的益處:

		1	2	3	4	5
a)	It helped me got prepared for my career development / changed my career 幫助我發展我的事業 / 幫助我改變了事業	☐	☐	☐	☐	☐
b)	It helped me gained a good salary / a salary raise 幫助我獲取一個好薪酬 / 幫助我獲取了加薪	☐	☐	☐	☐	☐
c)	It helped me broadened my knowledge 幫助我擴展了我的知識	☐	☐	☐	☐	☐
d)	It helped improved myself 幫助我改進自已	☐	☐	☐	☐	☐
e)	It helped me expanded social network 幫助我擴闊了社會圈子	☐	☐	☐	☐	☐
f)	It helped raised my self-esteem 幫助我提升自我評價	☐	☐	☐	☐	☐
g)	It helped me communicated better with family 幫助我與家庭有更好的溝通	☐	☐	☐	☐	☐
h)	My learning has benefited people around me 我的學習令周邊的人得益	☐	☐	☐	☐	☐
i)	My learning has impact on people around me 我的學習對周邊的人有影響	☐	☐	☐	☐	☐
j)	People around me treat me differently 我的學習令周邊的人對我的態度有轉變	☐	☐	☐	☐	☐
k)	People around have more respect for me 我的學習令周邊的人對我更加尊重	☐	☐	☐	☐	☐

Comments
意見:

18. Comparing the new mode of study called e-learning [or online learning] with the traditional face-to-face mode of learning, you believe:
新的學習模式 – 網上學習和傳統面授式教學的比較:

	1	2	3	4	5
m) E-learning made my learning more interesting 網上學習令我的學習更加有趣	☐	☐	☐	☐	☐
n) E-learning made my learning easier 網上學習令我的學習更加容易	☐	☐	☐	☐	☐
o) E-learning allowed me to learn at my own pace 網上學習容許我以自己的進度去學習	☐	☐	☐	☐	☐
p) E-learning created more incentives for me to study 網上學習能夠推動我去學習	☐	☐	☐	☐	☐
q) E-learning is more personal 網上學習比較個人化	☐	☐	☐	☐	☐

	1	2	3	4	5
v) E-learning helped us outside classroom. 網上學習能夠協助課堂以外的學習	☐	☐	☐	☐	☐
w) E-learning helped us to work together as a group. 網上學習能夠促進同學之間的合作	☐	☐	☐	☐	☐
x) E-learning helped teachers to be more successful. 網上學習能夠令老師的教學更加成功	☐	☐	☐	☐	☐
r) E-learning fostered my personal responsibility for learning 網上學習能夠培養我對學習的責任感	☐	☐	☐	☐	☐
s) E-learning provided more feedback opportunities 網上學習提供更多回應的機會	☐	☐	☐	☐	☐
t) E-learning promoted greater participation and interaction in class 網上學習促進在課堂上的參與和互動	☐	☐	☐	☐	☐
u) Fellow students and I were encouraged to seek additional resources/reference materials online. 網上學習促使我們在網上搜尋額外學習資源或參考資料	☐	☐	☐	☐	☐

Comments
意見:

19. Real difficulties you have encountered in adjusting your study are:
在修讀課程時遇到真正的困難:

		1	2	3	4	5
a)	Hard to follow 在控制課程進度時感到困難	☐	☐	☐	☐	☐
b)	Do not understand the study material 不明白課程資料	☐	☐	☐	☐	☐
c)	Not comfortable studying using computers 透過電腦學習並不方便	☐	☐	☐	☐	☐
d)	Felt helpless during the studying 不知如何求助	☐	☐	☐	☐	☐
e)	Your age has been a handicap to you in doing e-learning 你的年齡對於網上學習是一種障礙	☐	☐	☐	☐	☐

Please skip this question if your mother tongue is English.
如你以英文為母語,毋須回答以下問題。

20. As a Chinese living in Hong Kong using English as the medium of learning, you consider:
作為住在香港的中國人用英語學習, 你認為:

		1	2	3	4	5
a)	There are greater disadvantages embedded in the learning process of e-learning 網上學習的模式會令學習更困難	☐	☐	☐	☐	☐
b)	The language barriers in the learning process of e-learning is greater 在網上學習過程中語言障礙更大	☐	☐	☐	☐	☐
c)	There are cultural barriers in the learning process of e-learning 在網上學習過程中有文化障礙	☐	☐	☐	☐	☐
d)	Comparing with e-learning, it is harder to learn in classroom (face-to-face) using English in the medium of information 相對網上學習, 在課堂中用英語學習更為困難	☐	☐	☐	☐	☐

Part IV. Other e-Learning Platforms

第四部分 – 其他網上學習工具

21. Which e-Learning tools/Learning Management Systems that you have used other than SOUL?
你曾使用哪些其他網上學習工具:
(Multiple selection is allowed)

- ☐ None
- ☐ WebCT
- ☐ Blackboard ™
- ☐ Moodle ™
- ☐ Lotus Learning Space ™
- ☐ FirstClass ™
- ☐ Others
  其他
  Please specify:
  請說明: _____

If the answer of Q.10 is None, please go to Question 13.
如沒有, 請跳至第五部分。

22. How long have you used this/these e-Learning tools/Learning Management Systems?
你曾使用這些網上學習工具多久?

- O 1-6 months
- O 6-12 months
- O 1-2 years
- O 2-3 years
- O 3 years or more

23. Comparing SOUL with other e-Learning tools, what features you found them useful but not available on the SOUL system?
以 SOUL 和其他網上學習工具比較，請列出哪一些輔助工具能支援你的教習，而不能在 SOUL 找到?

Part V. Other Comments

第五部分 – 其他意見

24. Other views on e-Learning or SOUL System
你對網上學習或 SOUL 系統的其他看法:

- End -

Thank you for completing this questionnaire once again, all the information provided by you will be kept confidential and need only for statistical analysis.

謝謝完成此問卷, 閣下所提供的資料，將作統計分析用途，並會被嚴格保密。

Appendix C

Schedule of Web surveys

Schedule of online web surveys

Teacher surveys

Survey year	2005	2007	2009
Survey period	Dec 9, 2005 - Jan 16, 2006	Dec 21, 2006 – Feb 21, 2007	Jan 20, 2009 – Feb 22, 2009
Invitations sent to target participants	185	666	538
Valid returns	96	85	78
Response rate	51.9%	12.8%	14.5%
Age 50 & above	3%	19%	27%

Learner surveys

Survey year	2006	2007	2009
Survey period	Nov 19, 2005 – Dec 2, 2006	Dec 21, 2006 – Feb 21, 2007	Jan 20, 2009 – Feb 22, 2009
Invitations sent to target participants	5,598	25,449	22,227
Valid returns	779	2,072	2,051
Response rate	13.9%	8.1%	9.2%
Full-time students	779 (100%)	841 (41%)	990 (48%)
Part-time students	-	1,231 (59%)	1,061 (53%)
Age 24 and below (FT students)	99%	97%	-
Age 50 & above (FT students)	1 (0.13%)	2 (0.24%)	-
Age 50 & above (PT students)		21 (1.71%)	-

Appendix D

Schedule of in-depth interviews and dates of approval of transcripts

Schedule of in-depth interviews

Participant	Interviewed Date & Time	Venue	Transcript approved date
1. Mr. B	30 July 2008 at 3:00 – 4:20 pm	My office, 11/F TTT, HKU	Oct 9, 2009.
2. Mr. K	21 April 2009 at 3:45 – 6:30 pm	At Mr. K's office	Nov 2, 2009.
3. Mr. F	8 June 2009 at 4:30 – 6:30 pm	Room 2, UC 12/F	Oct 18, 2009.
4. Mr. C	9 June 2009 at 3:00 – 4:10 pm	At Mr. C's office Room 306, Mei Foo Centre	Verbally after Nov 4, 2009.
5. Mr. O	9 June 2009 at 5:30 – 6:45 pm	My office, 11/F, TTT, HKU	Sep 13, 2010.
6. Ms. Y	6 July 2009 at 10:30 – 11:18 am	At Room 711, OUHK	April 13, 2010.
7. Ms W	11 July 2009 at 11:30 am - 1:10pm	My office, 11/F, TTT, HKU	2010.
8. Mr. A.	First interview on 23 November 2009 at 4:00 pm - 4:45pm Second interview on14 Dec 2009 at 3:00 pm - 4:22 pm	At Mr. A's office	March 19, 2010.
9. Mr. S	16 Dec 2009 at 10:15 -11:28 am	At Mr. S's office	2010.

Appendix E

Statement of proposed research aims and data generation

Statement of Proposed Research Aims & Data Generation

Proposed Research Aims

The proposed research project aims **to explore the benefits and impacts of e-learning on learners and in the views of experienced teachers and senior educators in Hong Kong, whether these are realized.** It also aims to investigate the barriers to greater adoption of e-learning in HK.

The research also aims to enquire into some of the following related smaller questions:

6. Do you think the benefits and impacts perceived by the teachers for their students are realized in general? If not, why?

7. Are the learners fully aware of the benefits and impacts of e-learning to them, or to others close to them such as family members? How do they cope with or minimize any negative impacts of e-learning?

8. What are the positive and negative impacts of e-learning on teachers? Do you agree that that adoption of e-learning in HK is significantly behind other developed countries? Why do you think this is so?

9. Is age a barrier to greater adoption of e-learning? Are there differences between older and younger learner in Hong Kong in terms of their perceived benefits and impacts to be derived from e-learning?

10. To what extent or whether, the predominant language of the Internet, English, has been a barrier to their learning through e-learning?

Data generation

Web survey and in-depth interviews

Appendix F

Participant consent form

Participant Consent Form

Dear Participant,

My name is Wong Lap Sang, Andrew 黃立生 and I am a research student working for the degree of Doctor of Education (Ed.D) at the School of Education, University of Nottingham (UK) under the supervision of Dr. Sarah Speight and Professor W. John Morgan. I am conducting a research project which investigates the learning experience of learners engaging in e-learning.

My study involves surveys and in-depth interviews of learners to find out how e-learning benefited or impacted their learning and life in general. Such impact might be negative as well as positive. I am particularly interested in the experience of such benefits or impact to the more matured learners or teachers. The interview will take about 45-60 minutes.

Although there is no direct benefit to you, the results of the study may assist in developing a better understanding of the issues and concerns.

All data collected **in the research will be treated in the strictest confidence.** The identity of the survey and interview participants will not be disclosed at all times. All data obtained during the interview in the form of either tape-recording or hand-written notes, and any data derived from them will be kept by me only during the course of the research project. All data derived from the surveys and interviews will be used for analysis and reporting of the research project only (without revealing the identity of the participants). After the research project is formally completed, all data recorded or derived will be deleted. The confidentiality of what the interviewees say during the interview is completely guaranteed. Participants are free to withdraw from the interview at any time and will not be adversely affected by withdrawing.

I am happy to provide further information about myself and the research study. Please feel free to contact me at andrew.wong@hkuspace.hku.hk or my Supervisors, Professor W. John Morgan at john.morgan@nottingham.ac.uk or Dr. Sarah Speight at sarah.speight@hnotingham.ac.uk School of Education, University of Nottingham. Additional contact information is listed below.

Yours sincerely
Wong, Lap Sang Andrew
Doctoral Student, School of Education, University of Nottingham

	Telephone	Address
Professor W. John Morgan	Tel: +44 (115)9513717 Fax: +44 (115)9514397	UNESCO Chair of the Political Economy of Education, Director, Centre for Comparative Education Research, School of Education, University of Nottingham, Nottingham, NG8 1BB. UK

	Telephone	Address
Dr. Sarah Speight	Tel: +44 (0)115 8466465	Associate Professor of Archaeology and Medieval History Deputy Head of School School of Education The University of Nottingham Jubilee Campus Wollaton Road Nottingham NG8 1BB UK
Mr. Andrew Lap Sang Wong	Tel: (852) 29755746 Mobile: 94098911	Senior Consultant, HKU SPACE 11/F T. T. Tsui Building University of Hong Kong Pok Fu Lam, Hong Kong

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I do consent to participate in this study. I understand that the interview will be audio taped. I grant permission to be quoted directly in the final research report. I also understand that I am free to withdraw at any time, and that I will not be adversely affected by withdrawing.

_____ _____

Signature Date

Personal Information

Name: _____ email address: _____

Name of organization _____

Job position _____

Appendix I

Background of participants of the in-depth interviews

Background of participants of the in-depth interviews

1. Teachers

Interview Participant	Brief background
Mr. B (full-time)	A very experienced teacher/ planner/ administrator of continuing education with the continue education arm of a local university. Has a doctoral degree in education and extensive experience with e-learning both as a student and as a teacher.
Mr. C (full-time)	A very experienced teacher in the field of health and medical science. He has over 30 years of experience as a teacher and a practitioner in his field. He is also a practitioner of lifelong learning who participated as a learner in a postgraduate programme on e-learning.
Mr. O (part-time)	A senior manager at a large advertising and public relations firm. He is also a seasoned part-time teacher with extensive teaching experience. He has taught at both the undergraduate and post-graduate level for the continuing education arm of a local university for many years.
Ms. W (part-time)	A professional school librarian and an English teacher. She also teaches librarianship and English courses part-time at the undergraduate and post-graduate levels in the professional and continuing education arm of one of the local universities. She has over 30 years of experience in teaching.

2. Teacher-researchers

Interview Participant	Institution	Brief background
Mr. F	CLL	A senior academic in the continuing education arm of a local university. He has been a devoted practitioner of life-long learning, teacher, researcher and academic manager and planner. He has extensive experience in e-learning both as a teacher and as a researcher.
Mr. K	University A	The head of education technology of a local university, who is an experienced instructional designer, teacher, researcher and manager of educational technology. He has substantial experience in the full range of work in designing developing, teaching, and evaluating e-learning courses and has published extensively in the area of e-learning and blended learning.
Ms. Y	University A	A professor and the dean of the School of Education of one of the local universities. Ms. Y is an accomplished researcher with extensive experience both as a teacher and as a researcher in the field of distance education and e-learning.
Mr. S	University A	An associate professor of a local university. He is also the director of the centre for e-learning at his university. As the centre director, he is in charge of the promotion, design and development, support and administration of all e-learning programmes within the university. He teaches courses delivered in the blended learning mode and also evaluates the effectiveness of e-learning courses at his centre.
Mr. A	University B	An associate professor and an accomplished researcher of a local university. He also carries an appointment as the deputy director of a centre of IT in education. His research interests include evaluative and comparative studies of IT in education. He has worked both as a teacher and as researcher in the area of e-learning and in general IT in education. He has published extensively in the practice of e-learning in schools and universities in HK.

Appendix J

Sample interview transcript – Mr. A

Interview - 8 Mr. A

Time and Date of first interview: 1600 – 1645, Nov 23, 2009

Time and date of second interview: 1500-1622, Dec 15, 2009.

Venue: both times at Mr. A's office

Interviewer: Andrew Wong

Participant:
Mr. A is an accomplished academic of a local university. His research interests include the evaluative and comparative studies on IT in education. He has worked both as a teacher and as researcher in the area of e-learning and in general IT in education. He has published extensively in the practice of e-learning in schools and universities in HK.

First Interview: 23 Nov 2009. 1600-1645

INTERVIEWER: Mr. A, first of all, thank you very much for allowing me to do this interview with you. The objective of this interview is, first, to explore with you, an academic with rich experience, the benefits and negative impacts of e-learning in the context of HK based on your observation or personal experience. Second, to find out whether you feel that adoption of e-learning is less popular in HK than in other countries. If you do, what do you see are the reasons for that?

(Interruptions due to problems with the recording device ...)

Mr. A: As I was saying, there are two levels to look at e-learning. The first one is as an end-user from the angle of utilization of technology. The use of technology can range from some use of technology in the learning process up to the extensive use of technology or IT in the university. The definition of e-learning can be complicated but to put it in simple terms, when e-learning started gaining popularity, it was in the business and industry sector where learning materials were put on a CD-ROM for training of staff in the company. The main drive was cost-saving. Before the learners come to the training sessions, they were given the CD-ROM to prepare beforehand. Now e-learning is of course very different. With Internet, Learning Management System and other technologies, e-learning has a great impact on the learning process. In Hong Kong, nowadays the University Grants Committee lists e-learning as one of the learning quality-check items. This implies e-learning is often linked with quality of teaching. Of course, this is a rather broad view of e-learning.

The second issue we are looking at is what are the benefits and negative impact of e-learning as practiced in Hong Kong. Of course, there are.

INTERVIEWER: Can I clarify one point. For the purpose of my study and previously conducted surveys, I tried to narrow down the definition of e-learning to only those learning processes that involved online discussions. Therefore, under this definition, if a teacher only uploads learning materials onto a web site for the students to browse passively, that is not quite e-learning for my purpose.

Mr. A: Precisely, this is also one of the observations I made in my survey of 10 faculties of my university. This paper only reports some preliminary findings [Mr. A handed over a copy of his paper]. I also spent about 3 years to dig deeper into the practice of e-learning at those 10 faculties. What I discovered is that the practice of e-learning, teacher acceptance of e-learning, student acceptance of e-learning and use vary greatly from faculty to faculty. That is what I wrote in my paper. The narrowing down of definition is also a way to classify how IT is being used. The use of IT not only facilitates the access to learning materials but also the online peer discussions of students as well as discussions with their teachers. If I use this definition as my basis of making observations, I would say the teachers and the students see the benefits and impact of e-learning from quite different perspectives. For the teachers, whilst they recognize the benefits to the students, they would find a heavier workload for them in engaging students through e-learning. They might start with the belief that e-learning would save them time but it actually requires more time to prepare and manage the teaching. In fact, before you came in, I was busy working on something I want to post onto the web for my students. Some teachers might have the impression that the benefit of putting learning materials online is that once done it is good for a long time. That is not true. They would find out quickly that materials need frequent updating. You may have heard of a popular joke about professors who used the same notes year after year. When a father took a look of his son's class notes, he found they were exactly the same as those he got from the same professor years ago. This may be a joke but that is the impression about the teachers. The fact is - teachers do not focus on the benefits of convenience. They tend to be more concerned with the pedagogical benefits. They see the e-learning pedagogy fits the learning styles of the new generation of learners such as quick feedback and online discussions, etc. You have heard about Generation X, Generation Y and Generation Z. Therefore, if you asked the teachers, what would be the biggest benefits of e-learning? Most teachers would use the Blended-learning approach – suitable mix of online and face-to-face teaching and use of technology. Therefore, the online components can assist them in the making up of the shortcomings of face-to-face teaching. This is very important. As far as I know, most of my colleagues prefer the Blended Learning approach. This is important. Most development of e-

learning in Hong Kong, as I understand it, is taking the Blended-learning approach. Of course, there are different ways of blending, e.g. blending of technology, blending of pedagogical approach, etc.

Students, especially at the post-secondary level, see things quite differently. There is a gap between the post-secondary students' view on e-learning and the teacher's. Technologies are seen as their extensions. What they value the most is the ability to be connected. Putting aside the personal computer, we can see the cell phones are important to them because the cell phones give them the ability to get connected. They would keep their telephones turned on all the time even when they are sleeping. The cell phones become part of them or their extension.

INTERVIEWER: Didn't Marshall McLuhan argue that the technological inventions are merely extensions to us?

Mr. A: He said that in the sixties. He also said technology would shape and re-shape our understanding about our world. The youth today are truly being reshaped about their view of the world. I surveyed my students and asked them what their understanding of e-learning is. Most of their views of e-learning remain at the level of information access. One of my students described e-learning as a 7-11 [convenience store]. That is, you can go get what you want when you want it, conveniently. In the old days, if a student wants to see his professor, he will try walking about in the corridors or go to the professor's office to knock on his door. Nowadays, there is no need to do so. It is more convenient to get in touch with the professors now with e-learning. Everything you need is on the learning platform. That is important to them. On the other hand, can e-learning enhance the synergy or opportunities for the collaboration between the students or between students and teachers? I don't think this is the case in Hong Kong. There are some. In my classes, unless I require my students to conduct online discussions, they would not do so. I often test them on this. I would post a question for online discussion and then keep quiet. I found no more than one or two students would participate. However, if I tell them they must participate in the discussions once or twice, they would rush in to participate. They think I might include that participation as part of the assessment. This is an unfortunate characteristic of Hong Kong education system – assessment driven. That is, unless an activity is linked to assessment, nobody would pay attention. We understand e-learning can open up a new horizon for us to learn, or an open space to learn. This is my third observations: Hong Kong students are very assessment–driven. I am not saying all of them are behaving this way but most of them are like that. Perhaps this is a cultural feature of the Hong Kong Chinese. In the university, they do not see their fellow students as collaborators but rather, as competitors. It is natural that you do not

want to say too much to my competitors. They feel saver to keep their insights a secret. Therefore, the assessment driven culture of Hong Kong seems to be a barrier to e-learning. You can read my paper on this point [pointing to his paper]. Maybe we are getting there but we are not there yet. Hong Kong is very much at a transitional stage. It depends on why we use e-learning and how we promote e-learning. Why do we want e-learning to do for us? Where is our university education going? What is driving our students? If our students were still driven by exams and assessments, then they would not be interested in e-learning per se.

My students would demand to have details of their assessment scheme at the first lesson. Their concern is "just tell me how I can obtain an "A" from this course". I am not saying this is necessarily wrong but you would find such mentality would prevent them from getting the full benefits of e-learning, that is, a new learning space. We need new mentality to accept new things. This is a change. It is still evolving. I would not characterize it as a revolution. It is a change in terms of whether an institution wishes to use e-learning. My university has decided to use e-learning. Each faculty may have different views as to whether one Learning Management system [e-learning platform] should be centrally provided. That is a separate issue but the university as a whole has taken a view that e-learning is important to the teaching and learning process. The question is how. Should there be a corresponding change of teachers in terms of their pedagogy? Whereas for the students, the use of technology is not an issue. The students have no problem with new technology. The issue is their mentality of learning. It is successful in Hong Kong. My answer is yes and no.

INTERVIEWER: How do we do in comparison with other countries?

Mr. A: About the same in terms of use of technology. According to the literature, Hong Kong is not lagging behind. However, how are we using e-learning? The experience is quite different. I mentioned my surveys of 10 faculties. I interviewed a few dozens of students and teachers. They were all quite positive on the convenience that e-learning provides. They like the anytime access to information. However, when it comes to online discussion, the frequent comment is that their professors are not "keen". You would find this quite common. There are two sides to look at. On the one hand, there needs to be a change of mindset on the part of the teachers. For example, we are changing our learning platform to MOODLE [a free learning Management software] and many of them say don't change ... too many new things. Therefore, there is resistance to new technology. On the other hand, student resistance to technology is low. It is more important to look at what pedagogy is used in the e-learning in the teaching. I don't know if this is a cultural track of Chinese. We need more evidence to prove it. However, you may say the students tend to be shy in online discussions. They would seldom engage in a frank and open discussion online.

Interviewer: Why? They are used to do discussions in the classroom already.

Mr. A: Language may be a barrier. They are fine with English in learning but are uncomfortable using English for social communication. This is something special with Hong Kong students. Our social environment is in Cantonese but English is our working language. We use English for meetings, discussions, teaching, and writing etc., all at the working level but not in social interactions. Students may mix English and Cantonese but basically, they use Cantonese for social interactions. It is not a question of their English proficiency. It is just that at the social level, it becomes awkward to use English only. Just like you and me, we are now talking in Cantonese. But it does not mean we are not capable of talking in English. It only means that at the social level, [we are used to using Chinese/Cantonese]. For some students, this may become a little barrier. If we require them to use English, they would just use formally English as if they are answering questions in an examination. For the foreign students, English is their social language as well as work language, therefore they are quite comfortable in engaging in online discussions. On the other hand, we cannot allow students to mix English and Chinese in discussions [as they do socially] because this is against university regulations. If you visit popular online discussion sites of Hong Kong, you will find frequent mixing of English with Chinese. The interesting thing is - you would find that with such mixing of languages, there are vibrant interactions with all the right chemistry. In comparison, the online discussions that we require our students would tend to be quite formal just like answering an examination question. I have a doctoral student who studied the interactions of a group of students who are preparing to become English teachers in schools. I have the papers to show you. These students are under training to be English teachers. Therefore, their English standards could not be bad. They all have good grades in English to earn them a place in the programme. In their programme, they are required to write personal blogs to reflect on their practicum session at the schools, which include substantial social elements. Whilst they write about the academic aspect of their experience on their blogs, they would turn to their mobile telephones to talk about the social aspects. If we asked them to write down what they discussed on the phone, it became quite artificial. They would talk or send SMS to each other to fulfill their social interactions. Once a while they would use their blogs to say something social such as "add oil" [加油 in Chinese, meaning to cheer up someone to try harder] but only infrequently. It is quite a complicated situation.

Interviewer: Do they do the same in the classrooms, i.e. mixing English and Cantonese?

Mr. A: If you don't walk up to them during discussion time, they would use Cantonese to discuss. Of course, if there were foreign students in the group, they would automatically use English. It

is not a question whether they can use English. For example, when we see a colleague in the corridor we say good morning in Cantonese rather than in English. It is not because we cannot handle conversations in English; it is just the social norm to talk to each other in Cantonese unless the other party cannot speak Cantonese. We know when to switch.

(Interruption due to phone rings .....)

Why don't I send you some of my papers concerning higher education, e-learning and WIKI, etc.? You may find them useful. ..... This paper talks about how adult learners use blogs. This one is about how journalism students use WIKI. These years whilst I have been work on e-learning in the schools, I have also worked on e-learning in universities. I have several post-graduate students who are working on similar topics concerning use of e-learning at the university level with different focuses.

Interviewer: You mentioned there are two barriers. One is language. What is the other one?

Mr. A.: About the language, it is a question of academic language vs. social language. They can handle academic writing or discussions in English but not so for social purpose. Switching for them is not so natural. As you know, Hong Kong students basically learn academic English limiting to working situation. This is true with us also. In our schooling, we use English for formal academic purpose. That is our training. To speak more colloquial English is hard for us.

Interviewer: Yes, true. What is the other barrier?

Mr. A: The other barrier is that the students do not find the technology in e-learning attractive. Whether we can give them the latest technology, is the question. You know how they are used to the newest technology when they play computer games, etc. Now when it comes to e-learning, they are asked to do a lot of typing. This is boring to them. That is why people talk about Web 2.0. We cannot catch up with them.

Interviewer: I hate to keep you from attending your meeting. Could I work on the transcript for this session and come back to you for clarifications and elaborations. Thank you.

Mr. A: No problem. Send me an email or call me.

[end of first interview]

Second interview: 1500-1622, Dec 15, 2009

Interviewer: Thanks for giving me a second chance to talk to you about e-learning. Based on what we talked about in the first interview, which you have given me a lot already, I would like to pursue further two aspects of e-learning in Hong Kong. The first one is in the context of Hong Kong, what are the benefits and negative impact of e-learning to the students and teachers. You already mentioned convenience to the students and to the teachers, at least initially, reduction of preparation work of teaching materials. Perhaps once they get started, such benefits are actually not as much as expected. We did not talk much about the impact. Do you see anything negative in the Hong Kong context?

Mr. A: In terms of impact on the teachers, we can see from two angles, one is from the teachers' prospective. First, the age gap, I am not being age discriminatory. I mentioned the X, Y and Z generations. In Hong Kong, perhaps it is a common phenomenon world-wide; in the universities, the age gap between the teachers and their students is becoming more noticeable. The gap is not about a gap in world view or about an open mind but on how information technology and education technology impacting the teaching and learning process. This is very important. I can see a gap between what the teachers see and what the students see. For the teachers, they need to see it from the students' experience. What the students experienced is not necessarily what the teachers want to give the students as the best seen from the students' prospective. They think it is Ok to do what they are used to do in a classroom. Take for example, the overhead projectors (OHP); they were very popular about 10 or more years ago. Only a few years after the introduction of PowerPoint, although you can still find Overhead Projectors in the lecture theatres, they are hardly used anymore. Everyone uses PowerPoint. For a small number of older professors who are used to OHP, it is a big hurdle of switching to PowerPoint. They may be retired professors. They might need someone to help them set up a PowerPoint presentation. I have seen at other places some professors have difficulties managing their computers when doing PowerPoint presentations. They don't know what to do with the technology and sometimes cannot find the "Power On" button. Some are still not so comfortable with using PowerPoint. There is a basic requirement in teaching, that is, one has to have some basic knowledge of educational technology. You cannot rely on technicians to do the basic "button pushing" for you. Even the older teachers are quite familiar with using computers in their teaching. I occasionally saw people in big conferences who didn't know even to turn off the computer after their presentation were over. This is fundamental. The important consideration is pedagogical impact. In the past, we focused on knowledge transmission. That is, I, being the teacher, talk and you, the students, listen. "I have done the research so I understand what "the world" is and I am giving you all these". Now, using e-learning, we go further by emphasizing collaboration. The teacher needs to accept that to a

certain degree, the older model of knowledge transmission is no longer valid. If they still hold on to such older teaching philosophy, they are bound to find it difficult. In the old model, I am the expert and students just listen. Students can ask questions in the classroom but with no discussions. They can only listen to my answers.

Therefore, this is a big change. Is this a major paradigm shift? I don't know. Such change is already happening in the primary and secondary schools. Should the universities ask their professors to put everything on the web with a learning management platform? I know some universities in the States do that. Every course has its own web for students to interact. Would your school do the same and ask your teachers to use the school's own learning platform. Do they use it widely? So, should we require the use of the discussion forum? Should we also require the use of the Blog? This is a pedagogical consideration. The problem is, when you use it, the impact is huge. Teachers' acceptance of the changing role is crucial. The teachers must adapt to a changed role. In the schools, this is already happening. Whether you accept you are not just an expert. Of course, you still are, but you should also try to explore with the students. The extreme is to position the teachers also as learners. There are opposite views. I always tell my students in my first classes that this is also a learning experience for me, although you are here to listen to my lectures. I am exploring and learning with them together through interactions. They are helping me to broaden my knowledge and experience. Such view is necessary. But, is it the same for everybody? Often I heard students said, "My professor does not participate in the online discussions". The reason is that the professors are used to give out answers, rather than to interact with students in discussions. Over the past 10 years of my research, I found Hong Kong students ask for answers and expect their teachers just to give them the answers. Not all questions have a simple answer. The professors are not always able to give simple answers.

Thirdly, [I mentioned the first impact is pedagogy and the second impact is the teachers' role.] is the redefinition of the relationship between the teachers and the students. This is something still in the process of shaping. No one can tell me what the relationship between the teachers and their students in the 21st century should be. [I am now referring to the universities]. Obviously, it is different from previous generations. The educational technology is changing the human relationship. In the past, we discuss but if we can interact on an equal level – a democratic fashion, it is a totally different situation. The teachers would seem to be losing their authoritative position in such a situation. What is this new relationship? It is still being explored.

On the other hand, impact on the students may even be greater. Technology is already part of their daily life. However, the problem is - they are yet able to connect the technologies they

use in their daily life with the technology in their learning. They can do a lot with the new technology in their daily life but can such experience with the technology be easily transferred to their learning situation? No, there is a gap. We cannot see this process of transfer yet.

Interviewer: Sorry for the interruption. Do you mean that the technology the students experienced in their daily life is more advanced than the technology they experienced in their school, in terms of technology use?

Mr. A: Yes, in terms of technology use in the universities, the students are more advanced than their professors in terms of level. They are fully immersed in the newest technology. We joked about the Y generation started surfing when they were still in their mothers' wombs. Just like in the 60's children were exposed to radiation from the television when they were in their mothers' wombs. Kids nowadays started working through the Internet and building their own web pages at the very young age. On the other hand, we only talk about web-based learning in the universities now. It won't take long for these kids to enter the universities. Their experience started with kindergarten. You know the kindergartens teach computers. Every pupil in the kindergarten has his or her own computers. It does not take too long for these students to enter the universities. The primary school students are building web sites on their own. In 10 years' time, they will enter the university. When they are in the university, how are they going to adapt? Are we able to satisfy their expectations, or are we able to provide only a regressive experience for them? Would they find the technologies used in their learning boring, and regressive? The problem is then they find no excitements in their learning. In addition to curiosity, we need excitement in learning. In Japan, their experience is that technology is not so important in learning but how to instill excitement in learning is far more important. I remember when PowerPoint was first introduced, students were first intrigued by the bells and whistles the teachers put into the PowerPoint slides – a squeaking car, etc. After a while, students got bored with that and asked the teacher to show them something new. I am not saying that the teachers must always find new gadgets to excite the students. The question is that how are we going to satisfy them to prevent the regression of learning experience or to overcome such experience.

Interviewer: Sorry, is this the fourth impact?

Mr. A: Yes, such impact is not only on the students but also on the teachers. It happens on both. It is like a mirror. Impact on the students will eventually become impact also on the teachers and vice versa. Students won't tell the university what they want. They won't tell you your course is lacking excitement.

Interviewer: If I were in the position of a teacher, won't this create a dilemma for me? What you said is absolutely true. I should be very discouraged. There is no hope for me. If I do not introduce e-learning in my course, I am considered backward. If I do, the students will think that I am backward because it is not possible for me to make them feel e-learning is exciting and wonderful for them.

Mr. A: Well, there are always two sides of the situation. We should see things in longer term. Student would do what the teachers ask them to do. Technology is like a two-edge sword. On the one hand, it facilitates our learning overcoming the barriers of time and space. On the other hand, as the learners are taking the technology for granted, we, the teachers are challenged to design, not relying on just the technology, a learning process at the appropriate levels so that they are interesting and exciting for the learners. Therefore, if 10 years ago we could dazzle the students with the new technology, we will make them laugh nowadays. Their experience with the technology gained from playing online games is far more exciting than we can ever provide in a course. What is important for us is how to design the course content and the pedagogy behind it in order to stimulate their thirst for knowledge. The teachers should go back to the basic, that is, we need to gain deeper understanding of the knowledge of the courses we teach, so that they can find the best way to stimulate the students' interest in the subject matter. The students might still dissatisfy with the technology used but they will use it.

Just like the chalk and the blackboard, which were invented over 200 years ago? They were considered quite exciting technology with huge impact on teaching when first invented. The technology that allows erasing what is written on the blackboard was found quite amazing in those days. In a similar way, the aboriginals in Australia use the sand to conduct the teaching. Now after 200 years the chalk and blackboard are still in use. Amazing. This is because the teachers are able to deliver the contents effectively with the technology available. The important thing to the teachers is that they need to have a better understanding of the contents of their courses and able to stimulate the students' curiosity for the course. If molecules is the subject matter, you could develop a multimedia presentation to show how the molecules moving around. They have seen plenty of that before. Does it mean we should not use multimedia? No, we can still use it. However, it is far more important for us to lead the students to gain insights about the molecules. Then they would say, "Oh, there is something interesting about molecules."

Interviewer: Could it be because some design and use of technology are so poor that students find boring and would ask the teachers to go back to more basic teaching?

Mr. A: Yes, I had students who asked me to skip PowerPoint presentations and the bells and whistles, and just concentrate on the contents. What are the basic things in teaching? There are three things: contents, pedagogy and only lastly technology used. We need all three. Content knowledge is the most important thing. Nowadays we tend to let the other things overshadow the position of contents in generating students' interest.

Interviewer: What about the students?

Mr. A: I mentioned the regression of experience for the students. We should try to design our course in accordance with their experience but we should not always try to follow their experience. We simply may not be able to do so. From their angle, it matters whether they are able to see a changing role for them. Students need to see that their role is also changing. Most students are passive. They do not think about what their role should be. They come to classes and react to what the teacher ask them to do. They will do the assignments and try to get high marks. That is all. Now when we introduce e-learning, we say their role now changes. Yes, we say they should become active learners. But, what is an active learner? How does a student become one? It is a big challenge. It is easier to just follow what the teacher tells them to do. Especially for part-time learners, they are not keen to discuss in class. They prefer the teachers to do more talking. If the lecture is interesting, they would listen more and if not, they would doze off. They would get on with the assignments and do the examinations but no more. Therefore, unless they see a need for a change of role, e-learning will not be successful with them. All the intended benefits such as collaborative learning and active learning would not work because they do not see a new role to play as students. This is important and is not something the teachers can change. It is a matter of culture of learning.

Interviewer: Is this a unique culture of Hong Kong At least, comparatively speaking?

Mr. A: Is this a culture of Hong Kong? Definitely, in Hong Kong although I can also see changes happening in Hong Kong. Let's hope the future liberal studies will help change such culture. The active learners will actively seek out answers for themselves. The majority of students are still rather passive. Regarding other countries, there are many reports of similar experience in different subjects. There are cases reported.

Interviewer: Can we say such phenomenon has always been there but e-learning has sharpened the image and made it more acute? Less so with face-to-face learning?

Mr. A: Yes, that is right. Once I experienced with posting something on the web and asking students to discuss. Out of a class of 30 only about one or two responded. I deliberately did

not mention whether that is assessed. No one responded. So, I announced that the discussions will be assessed. Suddenly, everyone responded, especially before the deadline. Despite only a few marks would be rewarded, there were huge volume of postings and everyone participated. The learning system can keep track of participation. Obviously, you can tell they do not have the right motivation. But, that is the way it is. There are exceptions. A few students would participate in the discussions immediately after you post a question. Out of a class of 30, about 5 or 6 are like that.

Interviewer: Could it be the same with classroom teaching? It would be more obvious in a classroom when students are not participating because you can see who are not responding. In e-learning, the system keeps track of frequency of participation, but not with immediate effect as in a classroom. More so, if online discussions are not designed to be part of the assessment, they do not pay attention. In a classroom, the teachers probably would not announce before each discussion whether the ensuring discussions will be assessed.

Mr. A: That would be silly. I know some teachers would even include attendance as part of the assessment. That would be pettier. You make the atmosphere too tense. You raise a question and the more active students would answer. It has something to do with language and also culture. You can say the Chinese are more humble and are a little reluctant in put forward their opinion. Westerners are more used to state their views. The most important thing is they are not afraid to be wrong. Hong Kong students are afraid to be wrong. Westerners don't mind to be wrong in discussions. Hong Kong students take such discussions as personal honour or shame. As undergraduates, they shouldn't mind to be wrong. Fear of losing face seems to be more important with Hong Kong students. There are exceptions but, by and large most students behave that way. In the western world, people seem more comfortable with open debate and showing disagreement.

Interviewer: Comparing with classroom discussions, which are more spontaneous, online discussions allow the students to use language tools to tidy up their writing and also check references before posting. Shouldn't that make students feel more comfortable to participate in online discussions?

Mr. A: Well, that would slow down their input but it is true. However, I don't think too many do that? I conducted an online discussion forum for a group of school principals years ago. After a few rounds, one principal asked me whether he could go back to make changes to something his postings because he made a grammatical mistake. I said sorry that cannot be done. You can tell he was very concerned. It does not seem to be a big issue as even native English

speakers often make grammatical mistakes in discussions. This may be another cultural characteristic of Hong Kong. We are more concerned with losing face.

Interviewer: My question is comparing with classroom discussions, since online discussions are asynchronous, participants have time to organize his thoughts and use language tools to help prepare his postings before actually enter them into the system. Wouldn't that be a factor that addresses the cultural characteristic weakness of Hong Kong learners such as fear of losing face and therefore make e-learning more popular?

Mr. A: You are suggesting they can hide behind the computer screen, so to speak. Yes, provided that the social language versus academic language issue we talked about is resolved. In my university, our students have no problem with the English language. But, they just don't want to be bothered [not considered 'cool']. If you visit the more popular online forum, you will find there are vibrant discussions irrespective of the language used. Using language tools will make the process too formal and somehow impede such free-flowing of ideas. It would be more like composing a formal paper, which will reduce the level of freedom and take away the "fun' of engaging in free discussions. When they are not so concerned with the language issue and use a fixture of Chinese and English, they seem to participate more actively and enjoy more of the discussions. This is similar to the internal blogs or discussions within the university as well as on Facebook under a group for people associated with this university.

Interviewer: Right. The first main barrier to promoting e-learning in Hong Kong is the lack of sexiness of the technology and the second one is a cultural barrier.

Mr. A: The cultural thing may not be too serious. But, it is something we need to address for future development. The reason is technologies we are using to build the learning system were not originally designed for learning.

Take example, the Forum, it was designed for communication. Some thought why don't we use it for teaching and learning? So, we just adopted it for educational use. New technologies such as Web 2.0 were invented for business use or for communication. We adopted them for education without due pedagogical considerations. Naturally, there are things that do not fit. PowerPoint is another example. Many people are opponents of using it for teaching. It was invented for making commercial presentations and mainly for making proposals. It is mainly used to condense ideas into bullet points for representation to draw clients' attention. Is this what education is all about? Is this how we should do things? When we give lectures, are they only bullet points? PowerPoint is fine if the bullets points are well chosen. But often, they are not. The students could only remember the bullet points but not the gist of the lectures. They

can only remember the keywords. The trend now is to oppose PowerPoint. Unfortunately student study only the bullet points. In the end, their understanding is not adequate. We only borrow the technology designed for commercial use for educational purpose. That is the real issue. I would say most if not all of the technology we currently use were borrowed from the commerce sector.

Interviewer: Well, maybe it is because there is no money in developing technology for education purpose.

Mr. A: Yes, there is no money. Therefore, education can only try to get a free ride. Artificial Intelligence is a good example. AI was developed originally for military application and NASA. Only in the seventies that it began noticed for other applications. In the same way, there has been no technological development specifically for education and what technologies that have been used in education were all originally designed and developed for military or commercial applications.

Interviewer: In your words, "education is getting a free ride".

Mr. A: That is it. The reason is there is no money in education. That is why no technology developed for education or with education ideals in mind.

Interviewer: Didn't many universities tried to develop learning management system on their own? Didn't your university also develop its own LMS?

Mr. A: Yes, we did but we could not sustain it. Sustainability depends on a viable market. When we first developed our own LMS, we put in the features based on ideas that were current at that time but after a few years, the system looked dated. Without a market demand to provide the resources needed to update or upgrade it, we just do not have sufficient resources to sustain it. At the end, we had to give it up. An alternative is to use open source such as MOODLE. Still, some resources are needed to sustain it. Nobody can afford to do it.

Interviewer: I understand. You mentioned culture of teacher and student relationship a while back. Traditionally, in the relationship, teachers are highly regarded and respected. We have this old saying, "Once a teacher to me, he will be respected like a father for life." In your view, do you see e-learning a threat to such traditional relationship? You also mentioned the teacher-student relationship is redefined under the new e-learning mode? Both the teachers and the students perhaps need to make adjustments to their respective roles? To what extent is it e-learning's fault?

Mr. A: Well, firstly, we cannot say it is anyone's fault. We need to reshape the relationship. You quoted the old saying of "Once a teacher to me, he will be respected like a father for life." That was true in the old days largely because the society at that time was basically made up of farming communities. The students and their teachers all lived in the same village and therefore their daily lives were closely related to each other. When we entered the post-industrial era, the students and their teachers no longer lived close to each other and confined to the same village. When students finished school, they might move out of the community and lived and worked in a different community or even in a different country – the so called globalization. Therefore, the environment for such traditional close teacher-student relationship no longer existed. However, the emergence of Internet should not be seen only as a threat but also an aid to maintain the relationship. Whether the development of information technology aids or hampers human relationship is somewhat of a paradox. Over the past decade or so, there has been an ongoing discussion of an internet paradox. That is, some research results in psychology showed that the increase use of internet impacted human relationship and yet others showed internet helped overcome isolations and strengthen relationships. It depends on how one makes use of the technology. Some people get addicted to internet but many find internet helped them to expand their social circles.

You might heard of a Japanese soap opera called "電車男" that depicted a young man who was very reserved and could not communicate well with others unless through the internet. ….. (Mr. A gave a gist of the story of the TV show) …..

Therefore, the main theme of the story was that internet could help those with problems socializing with others in the traditional way.

Another example is the emergence of Facebook. People make contacts or renew contacts through Facebook. I had past students who contacted me and reconnected with me. They uploaded old photos that showed past encounters of each other. That was fun. It gave new way to make connections.

Interviewer: So, it can be both an advantage and disadvantage.

Mr. A: I know many teachers make use of Facebook to teach. It can help develop good relationship with their students. But, there is also a dark side of use of technology such as Facebook in teaching. I know of teachers and students became indiscreet and developed intimate relationship through Facebook. I often remind my younger colleagues to be careful and know where the boundaries should be. The convenience of new technology makes an old

problem in the universities more serious. Of course, the responsibility is largely with the teachers as the students are younger.

Interviewer: Can we say the new technology can be a threat to the teachers?

Mr. A: A threat as well as an aid. As a teacher, I enjoy using the Facebook to maintain relationship with my past students. I have been a teacher for over 30 years. ..... (Mr. A recalled one incident how one past student found him on Facebook). .....

Interview: yes, I see. You have given me a lot on my first question of benefits and impact of e-learning. Thanks. We didn't have time last time to talk much about my second question, that is, what do you see are the barriers to greater adoption of de-learning in Hong Kong. You mentioned two main points: assessment driven culture and mix of language. Is there something else?

Mr. A: I have a third point - University Policy and support. E-learning requires resources and policy support. If the universities do not provide adequate support in terms of resources and policy, e-learning will disappear quickly.

Interviewer: It is obvious to me how lack of resources such as technical support will seriously hamper e-learning. To what extent do you see the lack of policy support hinders e-learning development?

Mr. A: Not all universities have adequate policy support. Some will make one of the pro-vice-chancellors to be in charge of e-learning development or learning enhancement. Some might make a senior officer of equivalent rank to a PVC, e.g. one with the title of Chief Information Officer, to spear-head the area. Obviously, there is policy support in those universities. In my university, there is no central policy on e-learning and each faculty can have its own policy towards e-learning, sort of let-thousand-flowers-bloom approach. Whether the university will adopt a university-wide policy on e-learning is still under discussion.

Interviewer: Putting resources aside and assuming adequate resources will be provided, what sort of policy support you think would be useful?

Mr. A: They are discussing centralization and decentralization of deployment of e-learning platform. Melbourne University published a report in 2008 in which it outlined a plan migration from a decentralized model to a centralized model for e-learning. I was visiting there last year and learned that they did a lot of feasibility study before arriving at that decision.

Interviewer: Could we argue that the consideration of centralization is basically a consideration of resources deployment?

Mr. A: Not really. The focus is not cost effectiveness. They have a very clear framework. There are values to be gained. Four principles were outlined. E.g. Subject websites should serve multiple purposes. They really thought it through. Planning should be based on academic purposes. Subject diversity is allowed if justified, e.g. Medical Faculty. They want to ensure that what they plan to in the end benefits the students. They don't just focus on resources support but look for values. Behind every policy there is a value.

Interviewer: One other thing, do you think e-learning is harder to adapt for the older learners.

..... Some digression about the practice of older teachers .....

Mr. A: For the professors, not really. As for the learners, I don't see great differences. However, comparing the undergraduates with the post-graduates, whose age difference is not great, based on my surveys I find the experience with e-learning of the two groups, is quite different. It is all in my paper. E.g. the undergraduates of my university use WIKI more whereas the post-graduates use something else more. They go for different features.

Interviewer: In other words, age might not be a serious barrier.

Mr. A: Not in the context of a university. Basically, everyone is educated. Adapting to a new mode of learning should not be a problem. But if you are thinking of the grandpas and grandmas in the community, that would be different.

Interviewer: Some of the participants of other interviews mentioned that as developing e-learning materials is time-consuming, if the institution failed to make adequate compensation to the professors, it became a barrier to greater adoption of e-learning in the universities. In other words, it is the institutions which cannot keep up with the trend. Do you agree to that notion?

Mr. A: I think you can put this under the policy issue. Most universities would have some sort of best teacher award or teaching innovation award. Enhancing learning with technology clearly fits the requirements of such awards. On the other hand, adopting more technology into their teaching is already a big change. Asking the professors to go one more step for e-learning may be seen as too much change.

Interviewer: I suppose adopting technology is fine but the online discussion element can be rather time-consuming, especially if a professor attempts to respond to all the questions. A professor can find unmanageable volume of postings responding to his postings. Such workload can easily exceed the workload of answering questions of students in person.

Mr. A: I think that is a problem of technique. I have no such problem. One needs certain skills to facilitate online discussions but not to answer all questions. He should remind himself his changing role under e-learning. In an online learning environment, the teacher should be more of a facilitator than a lecturer. If he is still trying to answer every questions posted then he is no longer just the facilitator. He is effectively making unlimited extension to the lecturing hours. He should be the facilitator of the discussions. He can sharpen the questions or redefine the questions for the students. He should not take away other students opportunity to answer the questions. That is what a facilitator's role supposed to be.

Interviewer: That is because he is still using the traditional teaching pedagogy with the new teaching approach. What is worse, he might have to answer the same questions repeatedly to different students or groups.

Mr. A: That's right. That is not what online discussion should be. You should manage students' expectation from the beginning. They should not expect to get simple answers from me. They should learn to compare and select the right answers from the available literature. Listening to me will limit their choice of answers.

Interviewer: I am so sorry that I have run over again. Thank you so much, Mr. A for your time.

Appendix K

Briefing document and follow-up survey questionnaire in the follow-up questionnaire survey

Survey on Themes & Issues emerged from interviews with teachers and teacher-researchers

Dear Colleague,

In the following pages, there are about 100 statements which represent views expressed by one or more participants in their in-depth interviews on the current application of e-learning in the context of higher education in Hong Kong, its current benefits or advantages over the traditional face-to-face (f2f) learning mode, its current impact or disadvantages, and perceived barriers to its greater adoption in Hong Kong today.

Please indicate your extent of agreement or disagreement to these statements with a (') mark under one of the following 5 columns:

strongly disagree,
disagree,
neutral,
agree, and
strongly agree.

Based on your input, I hope to find out whether there is some convergence of views among the panel of teachers and teacher-researchers that I interviewed on the subject of e-learning in Hong Kong higher education.

At the end of the 100 statements, I have also appended some short explanations on the background of this survey and my assumptions on e-learning for the purpose of this study.

Your response to this survey and any general or specific comments on these statements will be much appreciated.

Regards,
Andrew Wong

I. Benefits of e-learning for Hong Kong learners	strongly disagree	disagree	neutral	agree	strongly agree
Benefits to the institution 1. The potential economy of scale of e-learning is a benefit to the institution. 2. E-learning is the future trend of learning and all forward looking institutions should be well prepared to adopt e-learning as a common practice. 3. E-learning helps the institution to diversify and extend its reach nationally and internationally (globalization). 4. E-learning helps save paper.					
Benefits to the learners 5. Learners gain efficiency and richness in their study. 6. Learners save time and money from reduction (or total elimination) of transportation to classes. 7. Learners gain flexibility of time in and pace of learning. 8. E-learning provides students anytime and anyplace access to information (time space disassociation). 9. E-learning facilitates collaborative learning. 10. E-learning is more personal and caters for individual's ability. 11. E-learning allows students to have just-in-time training, and to acquire the most update/current knowledge. 12. E-learning allows students to construct their knowledge through forums or online discussion boards. 13. E-learning, in particular asynchronous discussions, allows learners more time to think through problems and therefore facilitates deep learning. 14. E-learning is more interesting and gives instant gratification to the students. 15. E-learning improves confidence of students of marginal capability. 16. E-learning provides students with a full record of discussions.					

17. E-learning allows students to have access to a huge information depository.					
Benefits to the teachers 18. In e-learning, teachers gain efficiency in their teaching. 19. Through e-learning, teachers gain effectiveness in their teaching. 20. Through e-learning, teachers gain flexibility in their teaching. 21. E-learning helps the teachers to monitor their students' work. 22. E-learning facilitates team teaching. 23. E-learning supports constructivist approach to teaching and learning. 24. E-learning places greater emphasis on course design and planning. 25. E-learning facilities different degree of blending of technology into teaching. 26. E-learning gives greater choice of teaching methods. 27. E-learning facilitates flexible course materials updating for teachers. 28. E-learning provides teachers with a full record of discussions.					
Comments related to the above statements on the benefits of e-learning					

II. Impact or disadvantages of e-learning to HK learners	**strongly disagree**	**disagree**	**neutral**	**agree**	**strongly agree**
Impact to the institutions 29. The high cost of investment on technology is an impact on the institution. 30. E-learning is more costly than face-to-face (f2f) teaching. 31. Teachers and students have different perspectives and views on impact and benefits of e-learning which created different expectations of learning outcome.					
Impact to Learners 32. It is a distraction to learning when substantial input with heavy typing is involved in online discussions.					

33. E-learning is hard on the eyes because of long hours of looking at the computer display.					
34. E-learning technology currently in use is not attractive by comparison with technology used by learners elsewhere such as online games.					
35. E-learning is more time-consuming for the learner than traditional f2f learning.					
36. Some of the technologies used in e-learning are not purpose-designed for learning, and therefore are not suitable. E.g. PowerPoint was originally designed for making business presentations but has now conditioned students to learn in brief bullet points only.					
Impact to teachers					
37. E-learning generates extra workload for the teachers.					
38. E-learning courses tend to be less stable than f2f delivered courses for the teachers. E.g. need to check and repair broken links of external references					
39. E-learning is harder to manage than f2f learning.					
40. E-learning is more time-consuming for the teachers as the courses require more frequent updating because contents of external web sites are not stable.					
41. HK students nowadays are more demanding. If teachers do not post 'correct' or precise comments online, their students would complain. Therefore, teachers will have to be much more careful with what they post online than what they say in the classroom					
42. HK students are very passive in their learning. They want the teachers to give them simple notes and to explain the concepts clearly to them. As students do not want to take charge of their own learning, e- learning actually involves much more work for the teachers.					
Comments related to the above statements on the impact or disadvantage of e-learning					

III. Barriers to greater adoption of e-learning in Hong Kong	strongly disagree	disagree	neutral	agree	strongly agree
General Barriers					
43. Insufficient administrative or technical support to the teacher is a barrier for greater diffusion of e-learning in HK.					
44. Teacher's lack of prior e-learning experience is a barrier to greater adoption of e-learning in HK.					
45. The current absence of satisfactory means to conduct e-assessment is a barrier.					
46. The teachers' or the students' skeptical attitude about the need for e-learning is a barrier.					
47. The current lack of a good quality assurance system for e-learning is a barrier.					
48. Effective e-learning requires acceptance of role changes for teachers and students but currently there is a general resistance to such changes among teachers and students in HK.					
49. Changing roles of teachers and students in e-learning will also lead to changing relationship between the teachers and the students. Resistance to such change is a barrier to the greater adoption of e-learning.					
50. The lack of an appropriate institution-wide e-learning implementation strategy is a barrier.					
51. The lack of a good institutional change management strategy and process is a barrier.					
52. The lack of incentives for the teachers in the existing reward system is a barrier.					
53. The HK education culture of assessment-centric (all about marks and exams) is a barrier.					
54. The HK education culture of teacher-centred with low student self-directedness is a barrier.					
55. Student's attitude of preferring f2f learning is a barrier.					
56. Parents' or students' belief that f2f learning is a better mode of learning is a barrier.					

57. Student's belief that e-learning lacks socialization is a barrier.					
58. Student's attitude of seeking to get through a course with minimal work (utilitarianism in learning) is a barrier.					
59. Parents'/students' belief that e-learning is only a money saving alternative to f2f teaching for the institution is a barrier.					
60. Teachers' attitude of delivering the instructions with minimal work (utilitarianism in teaching) is a barrier.					
61. E-learning is misused when the institution or teacher forced everything online regardless of suitability.					
62. Learners have not been given proper familiarization of the e-learning technology before they start engaging in e-learning.					
63. Technology is not the barrier but the lack of sound planning and design in employing technology is. E.g. e-learning is not suitable for laboratory-based course.					
Comments related to the above statements on the barriers to greater adoption of e-learning					

IV. Special issues – Language usage	**strongly disagree**	**disagree**	**neutral**	**agree**	**strongly agree**
Academic language Vs social language					
64. Although Hong Kong students are comfortable with English for academic purpose, they are far less comfortable with English for social purpose. They prefer to switch back to Chinese for non-superficial social interactions.					
65. In Hong Kong, students prefer to use Chinese in classroom discussions although English is the official medium of instructions. The dominance of written communications in e-learning makes e-learning less popular with students because it is easier for the teachers to enforce the institution's medium of instructions (in English) policy in an online forum.					
66. The requirement of more frequent written (either in English or in Chinese) communication (for online discussions) in e-learning makes it less popular with HK students because they believe oral discussion in f2f learning is less work to them.					

Local culture of mixing languages 67. Although students in HK tend to mix English with Chinese in social occasions (mix coding) but doing academic work online using a mixed language in written form is actually harder for them. For this reason, e-learning is less popular with students.					
Use of English in e-learning 68. Although English is a second language to most students, it is less of a barrier in e-learning than f2f learning because e-learning gives them the extra time and pace to use language tools (such as dictionary, thesaurus) to refine their communications. 69. The advantage of students being able to take their time in preparing contributions in online discussions improves their quality of work. (e.g. to use dictionary or check out references, and to cut and paste relevant materials) 70. As e-learning requires students to do more written work in online discussions, it helps to improve students' English writing ability.					
Use of Chinese in e-learning 71. There is a lack of high quality online academic resources in the Chinese language. 72. Many HK students find Chinese characters harder to input than English alphabets and this is one of the barriers to greater diffusion of e-learning.					
Comments related to the above statements on language usage in e-learning					

V. Special issues - Online discussions and Interaction	**strongly disagree**	**disagree**	**neutral**	**agree**	**strongly agree**
Carefully prepared communication Vs spontaneous interaction 73. E-learning is more suitable to shy students as they are under less pressure to contribute spontaneously in online discussion. They can quietly prepare their postings for online discussions and join in when they are ready. 74. E-learning is more democratic as online discussion forum would not be dominated by a small number of more out-spoken and quick-witted students. 75. The quality of online discussions tends to be					

better than f2f discussions because students can carefully prepare their postings using tools and checking references. 76. There are more open communication & thoughtful sharing of ideas in online discussions than f2f discussions.					
Interaction between students and their teachers 77. Interactions between students and their teacher in a forum in e-learning is more conducive to good learning than just emails between a student and the teacher as an open forum will also encourage student to student interactions. 78. There is a lack of incentives for the teachers to spend time in a forum if e-learning is only an optional component of the course.					
Interaction between students 79. Students are more careful with their written remarks in online discussions as they know the accuracy and validity of their remarks can be checked by others, as full records are kept by the learning management system, and there is no denial of who said what and when. Therefore online discussions tend to be more focused and of higher quality academic contents. 80. Assessment of online discussions is necessary to motivate students to participate.					
Interaction with e-learning materials 81. It is more convenient for students to check and make reference to the course materials in e-learning when they are preparing their postings to online discussions. It is harder (usually not sufficient time) to do so in a classroom discussion. 82. As e-learning makes cross-referencing of course materials easier it would encourage students to spend more time with their course materials and therefore improve their comprehension of the course materials.					
Greater volume of communication 83. As online discussions do not have the same time limitation as f2f discussions, it could generate a large volume of postings and might even become intimidating. Therefore students need to develop good time management skills to cope. 84. It is more time-consuming to participate in online discussions as more time is needed for written input than verbal input. Also					

there are more rigid time limitations in f2f sessions,					

Lurking: 85. Some students prefer to lurk instead of contributing to the online discussions because they find it hard to express themselves through a machine and without the human touch. 86. In online discussions, it is harder for the teachers to detect whether the silent students are actually lurking or simply absent. Whereas in f2f discussions, there are signs to help the teacher to determine whether the silent students are paying attention to the ongoing discussions.					
Socializing online 87. Some students actually find it easier to socialize online because their identity is less visible.					
Comments related to the above statements on online discussions and interaction in e-learning					

VI. Special issues - Personal & Social Conditions	**strongly disagree**	**disagree**	**neutral**	**agree**	**strongly agree**
Age difference 88. Age is not a handicap nor would it make much difference in e-learning. 89. E-learning is more natural for the younger learners [the so-called Net Generation]. 90. Younger learners have a greater need for socialization and would resist pure e-learning because it is too 'lonely'. 91. More mature persons are more suitable for e-learning. 92. Health conditions would be less of a concern to learners in e-learning.					
Gender difference 93. Female students prefer f2f learning over technology-based learning. 94. Female students are more articulate in verbal communication (especially in English) than male students and therefore enjoy f2f discussions more than online discussions. 95. Male students are less resistant to technology than female students and tend to have a higher level of acceptance for e-					

leaning, e.g. male students tend to participate more in online discussions than female students.					

Family condition 96. Married women would find it harder to cope with e-learning at home than married men as women are expected to make sacrifice for their family, E.g. do more house work, give other family members priority in using the family computer. 97. Married learners with young children would find it harder to cope with e-learning as once at home they need to spend time with their children as young children could be quite demanding for attention.					
Home environment 98. Many learners' home environment (no private space) is not suitability for long hours of self-study such as e-learning. 99. Many learners find e-learning difficult to cope because they need to share-use one family computer at home.					
Self-motivation 100. E-learning demands greater self-discipline and self-motivation in a learner. 101. Learners with more work experience are better motivated in e-learning than in traditional learning.					
Comments related to the above statements on personal and social conditions in e-learning					

Appendix

Background about this survey and my assumptions for this study

Background of Research and In-depth Interviews

This research project is part of my study towards the degree of Doctor of Education (EdD) at the School of Education, University of Nottingham (U.K.), under the supervision of Dr. Sarah Speight and Professor W.J. Morgan. The following list of statements is a summary of the key points emerged from a series of in-depth interviews with invited participants who are all experienced teachers at the local tertiary educational institutions. About half of them are also active researchers in the field of IT in education and are regarded as experts on the subject of e-learning in Hong Kong. It is assumed that not all the opinions expressed by an individual teacher may be shared, or at least not to the same extent, by the other teachers. I would now like to put forward the full set of opinions expressed in the form of independent statements to you to test the extent of acceptance of these opinions by the whole group collectively. I hope to find convergence of views on certain aspects of the overall research question. Just to recap:

10. **Research aims and methods**: My study involves surveys and in-depth interviews of learners to find out how e-learning benefited or impacted their learning and life in general. Such impact might be negative as well as positive. I am particularly interested in the experience of such benefits or impact to the more mature teachers or learners and also the barriers to greater diffusion of e-learning in Hong Kong at the tertiary education level.

11. **My main question for the participants at the interviews was**: How would you describe your experience in using e-learning in your teaching or in your own study in comparison with conventional classroom face-to-face teaching or learning? How do you see the benefits and impact of e-learning on you and on your students?

12. **The in-depth interviews** took place mainly during 2009 and their **durations** ranged from 48 to 127 minutes with an average of about 89 minutes.

Common understanding of e-learning

E-learning is commonly used to describe any learning or training that to rely on computer technology and the Internet for its delivery to the learners. It is also referred to as Web-based Training, Computer-based Training, Online Learning, Technology Assisted Learning, etc.

However, it should be noted that Blended Learning or Integrated Learning refers to a hybrid form of e-learning and the traditional face-to-face learning. It describes the practice of blending or integrating traditional face-to-face learning with e-learning. Therefore, for the purpose of this study, Blended Learning or Integrated Learning is treated as e-learning in a broad sense.

Definition of e-Learning for the purpose of this survey

From Wikipedia:

> **"E-learning** comprises all forms of electronically supported learning and teaching. The Information and communication systems, whether networked or not, serve as specific media to implement the learning process.
>
> E-learning is essentially the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, virtual classroom opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio."

Assumptions for the purpose of this study:

3. Online discussion, either asynchronously or synchronously, is considered an essential part of e-learning for comparison with traditional face-to-face or classroom learning.

4. Many teachers/ professors blend e-learning technologies such as online discussions into their regular face-to-face (f2f) classroom teaching but may not label their courses as e-learning. Such blended learning practice, if substantial and well-designed pedagogically, should be regarded as a blended or integrated learning approach. However, often in such cases, the teachers or the students regarded e-learning as only add-ons to the existing f2f mode of teaching.

Appendix L

Background of experts in the expanded panel in the follow-up questionnaire survey

Background of experts in the expanded panel in the follow-up questionnaire survey

Expert	Institution	Brief background
Mr. Z	CLL	Mr. Z is a senior researcher of a local tertiary educational institution who has published extensively in the area of lifelong learning and e-learning. He is currently the head and chief researcher of a centre for research in continuing Education and also the deputy head of a centre for cyber learning
Mr. M	University A	Mr. M is currently the Director of IT of a local university. He is an active researcher who has published extensively in the areas of e-learning, blended learning and software engineering. He has served on the organizing and programme committees of a number of international conferences on blended learning, e-learning, and IT in education, and is currently serving on the editorial boards of two international journals. In addition, he is an e-learning consultant for a Mainland university and had played a key role in establishing an e-learning centre in another local tertiary institution.
Mr. X	University B	Mr. X is an accomplished teacher and a researcher who has published extensively in the areas of e-learning, m-learning, blended learning, hybrid learning and IT in education. He is currently an associate professor and a deputy director of a centre for IT in education of a local university.
Mr. R	College H	Mr. R has taught in several universities and higher educational institutions in US and in Hong Kong. He is currently the president and a professor of a 4-year tertiary educational institution in Hong Kong. He has been the chair of organizing committees of several international conferences on e-learning. He is an accomplished academic who has published extensively in the areas of e-learning, IT.
Mr. H	College H	Mr. H has taught in several universities and higher educational institutions in Australia, US and Hong Kong and is currently the academic vice-president and a professor of a 4-year tertiary educational institution in Hong Kong. He is an accomplished academic who has published extensively in the areas of e-learning, web-based learning, wireless and mobile learning, e-assessment and multimedia technologies for e-learning. He has served or is currently serving on the editorial boards of several international journals on interactive technology, innovation and learning, mobile communications and e-finance. He has also written and edited several volumes on e-learning related subjects.
Mr. N	College H	Mr. N is an accomplished academic who has published extensively in the area of e-learning. He has served on organizing and programme committees of several international conferences on blended learning, e-learning, Hybrid learning. He has edited several volumes on e-learning. His research and professional interests include Electronic Commerce, Computer in Education, Financial Engineering, Mobile Commerce, and Information Systems.

Mr. T	University C	Mr. T is an accomplished academic who has worked in the IT industry and taught in academic institutions in US and Hong Kong for over 30 years. He has served as organizing chairs of international conferences on e-learning and web-based learning, and also editorial board members of International Journals on Web Information Systems. He published extensively in the areas of Database, Data Warehousing, Data Mining XML, Hybrid learning and Web-Based Learning.
Mr. L	University C	Mr. L is an accomplished academic who has published about 40 papers in journals and conference proceedings in e-learning and IT in education. He has been a member of the organizing/programme committees of international conferences on blended learning, e-learning, web-based learning, Hybrid learning. He is currently a member of the editorial board of the Global Chinese Journal on Computers in Education and the chair of the IT branch of the local engineering professional body.
Ms. J	University D	Ms. J is an accomplished academic who has substantial experience in both teaching and the development of e-learning programmes. She has published extensively in the area of instructional design, e-learning, application of ICT in Teaching and Learning. She is currently a senior education specialist in the centre of learning development and support of a local university.
Mr. G	University E	Mr. G is an accomplished academic who has published extensively in the area of IT in education. He has a research and professional interest in application of ICT in Teaching and Learning, e-learning, and Learning Theories and Pedagogy.
Ms. V	University E	Mr. V is a seasoned academic who has worked in a number of tertiary institutions in the UK and Hong Kong. She is an accomplished IT practitioner with research interests in the areas of e-learning, IT systems implementation, education and student learning. She is currently the Director of a teaching and learning centre at one of one the local universities with enhancing student learning, professional development of academic staff, and e-learning support as the main focuses of her work.
Mr. P	University F	Mr. P is an accomplished academic with wide research interests and experience in teaching and learning principles, web-supported teaching and learning, case-based teaching and learning, e-learning evaluation, eBooks, and English language teaching. He has taught at both the secondary school and university levels. He is currently a senior member of a centre for learning enhancement and research of a local university.

Appendix M

Survey results of the follow-up questionnaire survey (with comparisons of scores between teachers and Researchers, and between Original Panel and Expanded Panel)

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
I.	**Benefits of e-learning for Hong Kong learners**							
Benefits to the institution								
1.	The potential economy of scale of e-learning is a benefit to the institution.	4.2	4.0	4.4	4.5	4.2	0.70	0.73
2.	E-learning is the future trend of learning and all forward looking institutions should be well prepared to adopt e-learning as a common practice.	4.3	3.9	4.6	4.0	4.4	1.06	1.00
3.	E-learning helps the institution to diversify and extend its reach nationally and internationally (globalization).	4.2	4.1	4.3	4.5	4.1	0.60	0.60
4.	E-learning helps save paper.	3.6	3.2	3.8	3.8	3.5	1.12	1.07
Cluster mean and standard deviation		4.1	3.8	4.3	4.2	4.0	0.48	0.54
Benefits to the learners								
5.	Learners gain efficiency and richness in their study.	4.0	3.9	4.2	3.8	4.1	0.74	0.78
6	Learners save time and money from reduction (or total elimination) of transportation to classes.	4.1	4.4	3.8	4.8	3.9	0.89	0.90
7.	Learners gain flexibility of time in and pace of learning.	4.5	4.4	4.6	4.5	4.5	0.51	0.51
8.	E-learning provides students anytime and anyplace access to information (time space disassociation).	4.4	4.4	4.4	4.3	4.5	0.60	0.62
9.	E-learning facilitates collaborative learning.	4.0	3.8	4.1	4.0	3.9	0.80	0.83
10.	E-learning is more personal and caters for individual's ability.	3.7	3.8	3.6	4.3	3.5	0.91	0.87

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
11.	E-learning allows students to have just-in-time training, and to acquire the most update/current knowledge.	4.0	4.0	4.1	3.8	4.1	0.74	0.70
12.	E-learning allows students to construct their knowledge through forums or online discussion boards.	4.0	3.9	4.2	4.0	4.1	0.86	0.90
13.	E-learning, in particular asynchronous discussions, allows learners more time to think through problems and therefore facilitates deep learning.	4.1	4.0	4.2	4.3	4.1	0.77	0.83
14.	E-learning is more interesting and gives instant gratification to the students.	3.5	3.4	3.6	3.8	3.5	0.93	0.94
15.	E-learning improves confidence of students of marginal capability.	3.1	3.0	3.2	3.3	3.1	1.04	0.90
16.	E-learning provides students with a full record of discussions.	4.2	4.3	4.2	4.3	4.2	0.54	0.56
17.	E-learning allows students to have access to a huge information depository.	4.4	4.4	4.3	4.3	4.4	0.59	0.62
Cluster mean and standard deviation		4.0	4.0	4.0	4.1	4.0	0.49	0.56
Benefits to the teachers								
18.	In e-learning, teachers gain efficiency in their teaching.	3.4	3.3	3.4	3.8	3.3	0.92	0.99
19.	Through e-learning, teachers gain effectiveness in their teaching.	3.6	3.3	3.8	3.5	3.6	0.92	1.00

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
20.	Through e-learning, teachers gain flexibility in their teaching.	4.0	3.8	4.2	4.0	4.0	0.71	0.79
21.	E-learning helps the teachers to monitor their students' work.	4.1	4.3	3.9	4.3	4.1	0.54	0.56
22.	E-learning facilitates team teaching.	3.7	3.6	3.8	4.3	3.5	0.73	0.72
23.	E-learning supports constructivist approach to teaching and learning.	4.0	3.9	4.0	4.3	3.9	0.80	0.86
24.	E-learning places greater emphasis on course design and planning.	4.0	4.3	3.8	4.8	3.9	1.02	1.05
25.	E-learning facilities different degree of blending of technology into teaching.	4.2	4.6	4.0	4.5	4.2	0.62	0.64
26.	E-learning gives greater choice of teaching methods.	3.6	3.7	3.5	3.8	3.5	0.75	0.80
27.	E-learning facilitates flexible course materials updating for teachers.	4.2	4.4	4.0	4.3	4.2	0.68	0.73
28.	E-learning provides teachers with a full record of discussions.	4.3	4.4	4.2	4.3	4.3	0.56	0.59
Cluster mean and standard deviation		3.9	4.0	3.9	4.1	3.9	0.36	0.40
II.	**Impact or disadvantages of e-learning to HK learners**							
Impact to the institutions								
29.	The high cost of investment on technology is an impact on the institution.	3.5	3.7	3.3	3.5	3.5	1.12	1.12
30.	E-learning is more costly than face-to-face (f2f) teaching.	3.3	3.7	3.1	3.3	3.4	1.11	1.11

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
31.	Teachers and students have different perspectives and views on impact and benefits of e-learning which created different expectations of learning outcome.	3.8	3.6	4.0	3.8	3.8	0.87	0.81
Cluster mean and standard deviation		3.5	3.6	3.5	3.5	3.5	0.25	0.21
Impact to Learners								
32.	It is a distraction to learning when substantial input with heavy typing is involved in online discussions.	3.0	3.1	2.8	3.5	2.8	0.97	0.95
33.	E-learning is hard on the eyes because of long hours of looking at the computer display.	3.4	3.6	3.3	4.0	3.2	1.20	1.15
34.	E-learning technology currently in use is not attractive by comparison with technology used by learners elsewhere such as online games.	3.2	3.2	3.2	4.0	3.0	0.87	0.79
35.	E-learning is more time-consuming for the learner than traditional f2f learning.	2.9	3.4	2.5	3.5	2.8	1.22	1.20
36.	Some of the technologies used in e-learning are not purpose-designed for learning, and therefore are not suitable. e.g. PowerPoint was originally designed for making business presentations but has now conditioned students to learn in brief bullet points only.	3.0	3.0	2.9	3.5	2.8	1.07	1.01
Cluster mean and standard deviation		3.1	3.3	2.9	3.7	2.9	0.64	0.70

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
Impact to teachers								
37.	E-learning generates extra workload for the teachers.	4.1	4.3	3.9	4.5	4.0	0.62	0.61
38.	E-learning courses tend to be less stable than f2f delivered courses for the teachers. E.g. need to check and repair broken links of external references.	3.4	3.9	3.1	4.0	3.3	1.16	1.21
39.	E-learning is harder to manage than f2f learning.	3.2	3.4	3.0	4.0	3.0	1.21	1.22
40.	E-learning is more time-consuming for the teachers as the courses require more frequent updating because contents of external web sites are not stable.	3.5	4.2	3.0	4.5	3.3	1.21	1.21
41.	HK students nowadays are more demanding. If teachers do not post 'correct' or precise comments online, their students would complain. Therefore, teachers will have to be much more careful with what they post online than what they say in the classroom.	3.8	3.8	3.8	4.0	3.8	0.93	0.83
42.	HK students are very passive in their learning. They want the teachers to give them simple notes and to explain the concepts clearly to them. As students do not want to take charge of their own learning, e-learning actually involves much more work for the teachers.	3.4	3.7	3.2	4.3	3.2	1.20	1.19
Cluster mean and standard deviation		3.6	3.9	3.3	4.2	3.4	0.32	0.39

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
III.	**Barriers to greater adoption of e-learning in Hong Kong**							
Hong Kong Education Culture								
43.	The HK education culture of assessment-centric (all about marks and exams) is a barrier.	3.3	3.1	3.5	3.5	3.3	1.06	1.05
44.	The HK education culture of teacher-centred with low student self-directedness is a barrier.	3.5	3.3	3.7	3.8	3.5	1.03	1.01
Cluster mean and standard deviation		3.4	3.2	3.6	3.6	3.4	1.05	1.03
Institution Readiness								
45.	Insufficient administrative or technical support to the teacher is a barrier for greater diffusion of e-learning in HK.	3.9	4.1	3.8	4.3	3.8	1.04	1.13
46.	Teacher's lack of prior e-learning experience is a barrier to greater adoption of e-learning in HK.	4.1	4.1	4.1	4.3	4.1	0.83	0.90
47.	The current absence of satisfactory means to conduct e-assessment is a barrier.	3.7	3.8	3.6	4.3	3.5	0.86	0.87
48.	The current lack of a good quality assurance system for e-learning is a barrier.	3.5	3.4	3.6	4.0	3.4	0.98	1.00
49.	The lack of an appropriate institution-wide e-learning implementation strategy is a barrier.	3.9	3.9	3.9	4.3	3.8	0.83	0.88
50.	The lack of a good institutional change management strategy and process is a barrier.	3.9	3.9	3.8	4.3	3.8	0.65	0.66
51.	The lack of incentives for the teachers in the existing reward system is a barrier.	3.9	3.6	4.2	4.0	3.9	0.83	0.86

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
52.	E-learning is misused when the institution or teacher forced everything online regardless of suitability.	4.1	4.2	4.1	4.5	4.1	1.06	1.14
53.	Learners have not been given proper familiarization of the e-learning technology before they start engaging in e-learning.	3.7	3.9	3.6	4.0	3.6	0.78	0.79
54.	Technology is not the barrier but the lack of sound planning and design in employing technology is, e.g. e-learning is not suitable for laboratory-based course.	4.1	4.3	4.0	4.5	4.1	0.79	0.83
Cluster mean and standard deviation		3.9	3.9	3.9	4.2	3.8	0.87	0.91
Teacher and Student Attitudes								
55.	The teachers' or the students' skeptical attitude about the need for e-learning is a barrier.	3.8	4.0	3.7	4.5	3.6	1.03	1.06
56.	Effective e-learning requires acceptance of role changes for teachers and students but currently there is a general resistance to such changes among teachers and students in HK.	3.8	3.9	3.8	4.3	3.7	0.75	0.69
57.	Changing roles of teachers and students in e-learning will also lead to changing relationship between the teachers and the students. Resistance to such change is a barrier to the greater adoption of e-learning.	3.6	3.8	3.5	4.0	3.5	0.80	0.62
58.	Student's attitude of preferring f2f learning is a barrier.	3.7	3.8	3.6	3.8	3.6	0.97	1.06

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
59.	Parents' or students' belief that f2f learning is a better mode of learning is a barrier.	3.5	3.7	3.3	3.8	3.4	0.87	0.94
60.	Student's belief that e-learning lacks socialization is a barrier.	3.3	3.6	3.1	3.8	3.2	1.01	1.07
61.	Student's attitude of seeking to get through a course with minimal work (utilitarianism in learning) is a barrier.	3.6	3.4	3.7	4.0	3.5	1.08	1.12
62.	Parents'/students' belief that e-learning is only a money saving alternative to f2f teaching for the institution is a barrier.	3.6	3.8	3.4	4.0	3.5	1.16	1.23
63.	Teachers' attitude of delivering the instructions with minimal work (utilitarianism in teaching) is a barrier.	3.4	3.7	3.3	4.0	3.3	0.93	0.99
Cluster mean and standard deviation		3.6	3.7	3.5	4.0	3.5	1.0	1.0
IV. Special issues – Language usage								
Academic language Vs social language								
64.	Although Hong Kong students are comfortable with English for academic purpose, they are far less comfortable with English for social purpose. They prefer to switch back to Chinese for non-superficial social interactions.	3.9	3.9	3.9	4.3	3.8	0.77	0.81

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
65.	In Hong Kong, students prefer to use Chinese in classroom discussions although English is the official medium of instructions. The dominance of written communications in e-learning makes e-learning less popular with students because it is easier for the teachers to enforce the institution's medium of instructions (in English) policy in an online forum.	3.6	3.8	3.5	4.3	3.5	0.74	0.72
66.	The requirement of more frequent written (either in English or in Chinese) communication (for online discussions) in e-learning makes it less popular with HK students because they believe oral discussion in f2f learning is less work to them.	3.4	3.4	3.4	4.3	3.2	0.98	0.97
Cluster mean and standard deviation		3.7	3.7	3.6	4.3	3.5	0.20	0.26
Local culture of mixing languages								
67.	Although students in HK tend to mix English with Chinese in social occasions (mix coding) but doing academic work online using a mixed language in written form is actually harder for them. For this reason, e-learning is less popular with students.	3.0	3.4	2.6	3.8	2.8	0.86	0.75
Cluster mean and standard deviation		3.0	3.4	2.6	3.8	2.8	0.74	0.84

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
Use of English in e-learning								
68.	Although English is a second language to most students, it is less of a barrier in e-learning than f2f learning because e-learning gives them the extra time and pace to use language tools (such as dictionary, thesaurus) to refine their communications.	3.8	3.7	3.8	4.0	3.7	0.83	0.85
69.	The advantage of students being able to take their time in preparing contributions in online discussions improves their quality of work. (e.g. to use dictionary or check out references, and to cut and paste relevant materials)	3.7	3.7	3.8	4.0	3.6	0.90	0.93
70.	As e-learning requires students to do more written work in online discussions, it helps to improve students' English writing ability.	3.4	3.3	3.5	3.5	3.4	1.03	1.06
Cluster mean and standard deviation		3.6	3.6	3.7	3.8	3.6	0.16	0.13
Use of Chinese in e-learning								
71.	There is a lack of high quality online academic resources in the Chinese language.	3.3	3.4	3.2	3.3	3.3	0.90	0.92
72.	Many HK students find Chinese characters harder to input than English alphabets and this is one of the barriers to greater diffusion of e-learning.	3.4	3.6	3.3	3.8	3.4	0.98	0.93
Cluster mean and standard deviation		3.4	3.5	3.3	3.5	3.3	0.34	0.29

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
V.	**Special issues - Online discussions and Interaction**							
Carefully prepared communication Vs spontaneous interaction								
73.	E-learning is more suitable to shy students as they are under less pressure to contribute spontaneously in online discussion. They can quietly prepare their postings for online discussions and join in when they are ready.	4.0	3.8	4.1	4.3	3.9	0.67	0.70
74.	E-learning is more democratic as online discussion forum would not be dominated by a small number of more out-spoken and quick-witted students.	3.9	4.0	3.8	4.5	3.7	0.96	0.99
75.	The quality of online discussions tends to be better than f2f discussions because students can carefully prepare their postings using tools and checking references.	3.6	3.9	3.4	4.5	3.4	0.97	0.94
76.	There are more open communication & thoughtful sharing of ideas in online discussions than f2f discussions.	3.7	4.2	3.3	4.5	3.5	1.10	1.12
Cluster mean and standard deviation		3.8	4.0	3.6	4.4	3.6	0.16	0.18
Interaction between students and their teachers								
77.	Interactions between students and their teacher in a forum in e-learning is more conducive to good learning than just emails between a student and the teacher as an open forum will also encourage student to student interactions.	3.9	4.1	3.8	4.0	3.9	0.89	0.93

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
78.	There is a lack of incentives for the teachers to spend time in a forum if e-learning is only an optional component of the course.	4.1	4.0	4.2	4.3	4.1	0.89	0.97
Cluster mean and standard deviation		4.0	4.1	4.0	4.1	4.0	0.32	0.37
Interaction between students								
79.	Students are more careful with their written remarks in online discussions as they know the accuracy and validity of their remarks can be checked by others, as full records are kept by the learning management system, and there is no denial of who said what and when. Therefore online discussions tend to be more focused and of higher quality academic contents.	3.4	3.6	3.3	3.5	3.4	0.87	0.94
80.	Assessment of online discussions is necessary to motivate students to participate.	4.0	4.2	3.8	4.3	3.9	0.92	0.99
Cluster mean and standard deviation		3.7	3.9	3.5	3.9	3.6	0.26	0.24
Interaction with e-learning materials								
81.	It is more convenient for students to check and make reference to the course materials in e-learning when they are preparing their postings to online discussions. It is harder (usually not sufficient time) to do so in a classroom discussion.	3.9	3.9	3.9	4.0	3.9	0.54	0.60

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
82.	As e-learning makes cross-referencing of course materials easier it would encourage students to spend more time with their course materials and therefore improve their comprehension of the course materials.	3.6	3.6	3.6	3.5	3.6	0.81	0.80
Cluster mean and standard deviation		3.7	3.7	3.8	3.8	3.7	0.17	0.19
Greater volume of communication								
83.	As online discussions do not have the same time limitation as f2f discussions, it could generate a large volume of postings and might even become intimidating. Therefore students need to develop good time management skills to cope.	3.8	3.8	3.8	4.5	3.6	0.77	0.71
84.	It is more time-consuming to participate in online discussions as more time is needed for written input than verbal input. Also there are more rigid time limitations in f2f sessions.	3.7	3.9	3.6	4.5	3.5	0.78	0.72
Cluster mean and standard deviation		3.7	3.8	3.7	4.5	3.6	0.05	0.06
Lurking:								
85.	Some students prefer to lurk instead of contributing to the online discussions because they find it hard to express themselves through a machine and without the human touch.	3.8	3.9	3.7	3.8	3.8	0.83	0.83

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
86.	In online discussions, it is harder for the teachers to detect whether the silent students are actually lurking or simply absent. Whereas in f2f discussions, there are signs to help the teacher to determine whether the silent students are paying attention to the ongoing discussions.	3.4	4.1	2.9	4.5	3.2	1.08	1.01
Cluster mean and standard deviation		3.6	4.0	3.3	4.1	3.5	0.19	0.32
Socializing online								
87.	Some students actually find it easier to socialize online because their identity is less visible.	3.8	3.7	3.9	3.8	3.8	0.68	0.64
Cluster mean and standard deviation		3.8	3.7	3.9	3.8	3.8	0.12	0.22
VI.	**Special issues - Personal & Social Conditions**							
Age difference								
88.	Age is not a handicap nor would it make much difference in e-learning.	3.4	3.6	3.3	3.5	3.4	1.12	1.00
89.	E-learning is more natural for the younger learners [the so-called Net Generation].	3.9	3.7	4.0	4.0	3.8	0.91	1.01
90.	Younger learners have a greater need for socialization and would resist pure e-learning because it is too 'lonely'.	3.1	3.7	2.8	3.8	3.0	1.11	1.12
91.	More mature persons are more suitable for e-learning.	3.4	3.9	3.0	4.5	3.1	1.07	0.99
92.	Health conditions would be less of a concern to learners in e-learning.	3.8	3.9	3.7	4.3	3.6	0.94	1.00
Cluster mean and standard deviation		3.5	3.7	3.4	4.0	3.4	0.32	0.37

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
	Sample size	21	9	12	4	17	21	17
Gender difference								
93.	Female students prefer f2f learning over technology-based learning.	2.8	2.9	2.8	3.3	2.7	0.60	0.59
94.	Female students are more articulate in verbal communication (especially in English) than male students and therefore enjoy f2f discussions more than online discussions.	3.1	3.3	3.0	3.8	3.0	0.96	0.94
95.	Male students are less resistant to technology than female students and tend to have a higher level of acceptance for e-leaning, e.g. male students tend to participate more in online discussions than female students.	2.9	2.9	2.8	3.5	2.7	1.20	1.16
Cluster mean and standard deviation		2.9	3.0	2.9	3.5	2.8	0.77	0.82
Family condition								
96.	Married women would find it harder to cope with e-learning at home than married men as women are expected to make sacrifice for their family, e.g. do more house work, give other family members priority in using the family computer.	3.4	3.6	3.3	4.5	3.1	0.80	0.60
97.	Married learners with young children would find it harder to cope with e-learning as once at home they need to spend time with their children as young children could be quite demanding for attention.	3.3	3.7	3.1	4.5	3.1	0.97	0.83

		Sample Mean					Standard Deviation	
		Combined panel	Original panel	Extended panel	Teacher	Researcher	Combined panel	Researcher
Sample size		21	9	12	4	17	21	17
Cluster mean and standard deviation		3.4	3.6	3.2	4.5	3.1	0.34	0.52
Home environment								
98.	Many learners' home environment (no private space) is not suitability for long hours of self-study such as e-learning.	3.4	3.4	3.4	4.0	3.3	1.12	1.10
99.	Many learners find e-learning difficult to cope because they need to share-use one family computer at home.	3.4	3.9	3.1	4.5	3.2	1.12	1.07
Cluster mean and standard deviation		3.4	3.7	3.3	4.3	3.2	0.26	0.38
Self-motivation								
100.	E-learning demands greater self-discipline and self-motivation in a learner.	4.5	4.4	4.6	4.8	4.5	0.51	0.51
101.	Learners with more work experience are better motivated in e-learning than in traditional learning.	3.6	3.8	3.5	4.5	3.4	1.02	1.00
Cluster mean and standard deviation		4.1	4.1	4.0	4.6	3.9	0.59	0.63

Mean of Means	3.7	3.8	3.6	4.1	3.6
Standard deviation of Mean of Means	0.38	0.37	0.46	0.37	0.42