The Challenge of Four-Status Model of eLearning: Principles Toward a New Understanding for Healthcare Professionals

N. Turnbull[1], G. B. Wills[2] and M. O. Gobbi[3]

[1,2] School of Electronics and Computer Science, University of Southampton, UK
(nt08r@ecs.soton.ac.uk[1], gbw@ecs.soton.ac.uk[2])

[3] School of Health Sciences, University of Southampton, UK. (*M.O.Gobbi@soton.ac.uk[3]*)

ABSTRACT

This paper presents the critical reviews of the advantages and disadvantages of eLearning for healthcare professionals. The impact of learning on healthcare professionals is explored; the focus is on healthcare professionals in rural Thailand. Literature suggests that there are four main topics related to the drivers and barriers in eLearning, they are: Infrastructure; Finance; Policies; and Culture (IF-PC). IF-PC model of barriers and drivers of eLearning is being adopted as a template for the design of all eLearning, to the exclusion of other ideas. Using a case study approach the research, completed in 2006, had two phases. A questionnaire was distributed to a group healthcare professional student to gain information with questions adapted from the Technology Acceptance Model (TAM). Phase 2 employed three strands of data collection: interviews, a group discussions, and observation were employed to help with the understanding of the problems in greater depth. Data was analysed using a form of pattern matching. An evaluation of the adoption of eLearning in Thailand is presented along with a discussion on the findings. It appears that alternative models of eLearning cannot be disregarded. This has interesting consequences for the implementation of eLearning especially in developing countries.

Keywords

eLearning, e-learning, eLearning model, Online Learning, Healthcare professionals, Technology Enhanced learning

1. INTRODUCTION

This paper reports on a pilot study of eLearning for healthcare professionals which delivering a part-time degree level course in Master of Public Health, introduced by Maha-Sarakham University, Thailand in 2006. The paper is structured in three parts. The first launches the motivation and the background for the eLearning courses for Master degree of Public Health, by showing the background of MSU eLearning (Maha-Sarakham University) and reviewing the professional imperatives to continue learning in healthcare. The second part illustrates the implementation of the research providing the results of two phase research; phase 1 was launched the questionnaires, following phase 2 were interviews, group discussion and observations which discusses along side with the problems. The final part discusses on the challenge of issues in experience implementation the eLearning for healthcare professionals for this case study. This also critiques the four main barriers and drivers of eLearning: Infrastructure, Finance, Policies and Culture (IF-PC).

2. BACKGROUND

A growing concern among healthcare professionals is the need to continually update knowledge and skills in order to enhance clinical practice. In some cases, to maintain the professional requirements, eLearning in particular can help with registered healthcare professionals who have to keep up-to-date with the knowledge base of their professions (Jadad and Delamothe, 2004). It is recognized that there are major concerns about recruitment and retention of staff within healthcare, and an increasing need for greater emphasis on valuing the existing workforce (Gill, 2007). At the same time, there is growing use of eLearning technologies, which can be linked to competencies via emerging eLearning standards (Hersh et al., 2006). Indeed, eLearning is an interesting method for hospital staff who works on shift patterns that cover seven days a week, 24 hours a day, it also enables the healthcare professionals to maintain core skills including the ability to use electronic libraries, critically appraise evidence for healthcare, and provide health information for service users. Rural communities in Thailand are dispersed over

large areas with limited transport and technology infrastructure. For healthcare professionals from such rural communities it is very difficult to attend training courses at a University and to keep up to date with current healthcare practice. When a rural healthcare professional does attend training courses it usually involves much time and expense in travelling as well as depriving the community of healthcare support by that professional, and for some communities that will be the only support. One solution being adopted is to make use of eLearning facilities as used in other parts of the world. There are challenges in running and attending eLearning courses in rural communities with limited technology infrastructure. However, Maha-Sarakham University (MSU) has provided these courses. The Faculty of Public Health at Maha-Sarakham University Thailand has obtained its full faculty status under the motto "*Learning at the Workplace and Lifelong Learning*". It has set its mission on the development of well-trained public health personnel and promotion of well being among the Northeast community in Thailand. By offering the courses for healthcare professionals in the Northeast part of Thailand, it will provide a means by which they can engage with advanced knowledge and information which should help them to improve their professional competency. These initial experimentations with online provisions of learning materials and learning activities can be considered as a tentative step in the direction of learning object paradigm. The main aims of the MSU eLearning project is that students could access available materials repeatedly and opportunities to work beyond the basic requirement of the module, where online material supports this. Therefore, the co-operative between the University and the Ministry of Public Health has had started in 2004. The course was first established on two university campuses which were at Nakhorachasrima province and at the main campus, Maha Sarakham province. This was first introduced into a few modules which were: Health and Management, Applied

Epidemiology, Public Health Research Methodology, Applied Statistics to Public Health Research and Public Health Policy. These modules offer the MSU courses through a blended eLearning mode the courses for students and how to manage the courses for the lecturers.

3. IMPLEMENTATIONS

The study was a mixed method design employing both quantitative and qualitative approaches in two phases; phase 1 used a survey and phase 2 used in-depth interviews, group discussions, and observations.

3.1 PHASE 1: THE SURVEY

Phase 1 took place before the eLearning courses started. A questionnaire was distributed to a group of 30 healthcare professional students to gain information with questions adapted from the Technology Acceptance Model (TAM) (Davis, 1985) (see figure 1) to identify 'what healthcare professionals perceive as useful in information technology' and 'what do they perceive as ease of use information technology'.
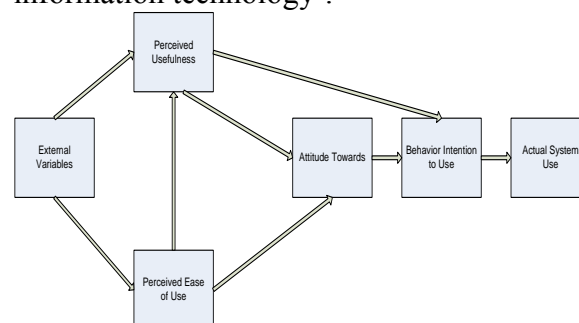

Figure 1: The Original Technology Acceptance Model (TAM)(Davis, 1985)

With the Perceived Usefulness (PU) and Perceived Ease of Use (POU) survey section, it was found that electronic information such as eLearning was useful for the healthcare professional and also that information was easy to use. Interestingly, most results of PU are significant, having regarded to the expected results, such as:

- '*Using electronic information improves the quality of the work they do'*,

- '*Using electronic information increases their job performance*',
- '*Electronic information supports critical aspects of their job*',
- '*Using electronic information increases their productivity*',
- '*Using electronic information enhances their effectiveness on the job*',
- '*Using electronic information gives them greater control over their work*',
- '*Using electronic information allows them to accomplish more work than would otherwise be possible*',
- '*overall, they found electronic information useful in their job*'.

The addition of the statistics test (*t-test*) ($p<0.05$) found four results significant to PEU, they include; Interacting with electronic information requires a lot of mental effort, they find electronic information cumbersome to use, the interaction with electronic information is clear and stable, and Interacting with electronic information is often frustrating.

3.2 PHASE 2: THE QUALITATIVE METHOD

In phase two a number of methods were used to investigate the understanding of the structure and factors that affected the attitudes of healthcare professionals when using electronic information and MSU eLearning within this environment. The following methods were used: interviews; group discussions; and observations. These were conducted while the healthcare professionals were studying in term time.

3.2.1 Interviews

23 healthcare professional students were committed to interviews, the questions were designed using four topics: Information wanted, Factor of Information within search-using, The Opinion of MSU eLearning courses, and the eLearning environment. The design of the questions examined each of the key components with regard to the environment for the healthcare professional within the MSU eLearning courses. The details of the results are as follows:

1) Information wanted:

The results show 20 of 23 healthcare professionals use leaflets and documents from the Ministry of Public Health, and journals for non electronic information, and further electronic information they used search engines from the Internet such as Google, the website of Ministry of Public Health, and the Maha-Sarakham University's website to finding the information. In addition, six healthcare professionals used e-mail to communicate with the others as daily. These also found healthcare professionals had difficult to find in searching or using information such as:

1) do not have time to search for information,
2) hard to find out some information which included; live too far from source; didn't know how to search their topics; lack of data especially for public health or some special topics e.g. Bird Flu; the books or journals are too expensive for them,
3) cannot access to the internet e.g. no computer, no landline, not many computers in their office, they have to wait their turn in a queue.

2) Factor of Information within search-using:

The results show 14 of 23 healthcare professionals need more time to use and understanding both non-electronic and electronic information.

3) The Opinion of MSU eLearning courses:

Following this question healthcare professional gave their opinions which felt into two categories, i.e., 5 students had never been through the MSU eLearning course and, 18 students had gained some more information or knowledge from this courses. The opinion was shown by a sample respondent.

Respondent C said: '*I can't access the program, sometimes as it's a bit slow to access, and my internet is very slow also*'.

4) The eLearning environment:

The results were found:

a) Healthcare professional cannot access the internet; this includes having no computer to access, limited access, and no internet in their areas.

b) The quality of the contents in the eLearning module added no new data, it was hard to download and the content could not be read (Blur).

c) The chat room and web-board were not updated.

3.2.2 Group Discussion

The one group discussion was under taken with three open topic questions: 1) the facilities for access to the internet; 2) the design and content in eLearning module; and 3) the communication of the courses e.g. chat room, web-board. The interesting comment from a healthcare professional student:

Respondent D: '*we are interested in this program which enables us to find out more information, but the problem is that some courses have no content at all, also some contents are not updated, and when we access some courses, we cannot find anything, also when we have a problem we cannot find anyone who can help us to resolve it there is no communication from the web-board or chat room'.*

3.2.3 Observation

This section presents some early observations concerning the Master Degree of Public Health. Specially focus on such as healthcare professional students, administration, tutors and lecturers, and the library. At the beginning of the eLearning courses, some healthcare professional students worry about new mode of learning, as learning from the internet was a new concept for them. There was also concern from students about being forced to use this mode of learning. However, some students were excited to learn the new technology, see it as an opportunity to broaden their skills. All the students received two days of training on how to use the MSU eLearning Module. Unfortunately, during the term time,

healthcare professional students were prevented from using the MSU eLearning course because no lecturers participated with them online. They only accessed the online courses when they needed to print out the notes e.g. power point. In the initial implementation of eLearning courses, the administrator decided policies that gave the opportunity for healthcare professional to study by eLearning. Then met the designers and implemented changes in the eLearning courses on the Masters Public Health degree. The policies included funding for the lecturers to commit the courses into the MSU eLearning module, and to support on-line learning. This seems to create more opportunities for healthcare professional people, especially those living too far from the university campus, and who do not want to leave their work to attend the university. Unfortunately, this policy did not go well because of a change in the administration of the courses. Thus when a person (who supported this policy) left, it seemed that nobody wanted to continue this policy, therefore, the program stopped. At the first start of the eLearning programme, five lecturers had been chosen to teach online because their subjects were compulsory for the courses. We then gave a training course for those lecturers, showing them how to manage their online courses. During the term time we spoke with some lecturers who were responsible for the course. Some of them did not seem to like to use the internet for teaching. They do not have time to discuss with students in the chat room or web-board room. They have many other classes to teach, too many other things to do. It was not only teaching, but also research, and so on. Thus, some topics in the eLearning course were taught in the traditional classroom. Furthermore, a librarian was asked to connect the library's website for students when they were off the campus which means they can access online facilities such as journals, online books, and some documents in the digital library. Unfortunately, it seemed to be hard to

manage. Therefore online healthcare professional students have to access to same as traditional students, they could not access information by the internet form out side university. The reason for this being there is not enough staffs to manage the library network, and most of them have insufficient knowledge to manipulate online supporting.

4. DISCUSSION OF THE ISSUES

From the questionnaires we found electronic information was useful for the healthcare professional and also that information was easy to use. However, they had problems with accessing the resources. This was also supported by the researcher's observations revealed similar results as those from the questionnaires, interviews, and group discussions. Particularly, administrative' policy changes affected the funding in the eLearning courses, for tutors and lecturers, and so on. It appeared that when the administrator changed, so did the funding policy towards the MSU eLearning courses. Additionally the cooperation with the university's staff, such as tutors, lecturers, librarians were essential and fundamental to the discussion. The results illustrated that some lecturers did not seem to want to be online teachers; their opinions showed they were too busy to sit at the computer and too much time was needed to manage the courses. Teaching face-to-face seemed easier than being than online, and they needed IT training before starting online courses. A librarian suggested they needed specialist staff for managing the MSU eLearning courses, especially for the help-desk or web-master. However, these factors are different from what makes eLearning work anywhere else in the world, especially for developing countries such as Thailand. While there are still major difficulties to overcome and much work to be done, it is maintained that the results of this project provide strong evidence that eLearning can be a powerful approach for reaching particular healthcare professionals. The summary of main factors discusses of the results shows as follows:

1) Infrastructure variables:

Problems with accessing to information technologies' facilities: not many computers to support, not a lot subject material on-line (e.g. health sciences), not many internet accessing points, and Accessing the internet from telephone landline is an extremely slow connection. These will be impacted to perceive of the usefulness information that healthcare professionals need to update their knowledge.

2) Finance variables:

Students live far from information sources such as accessing the Internet points which had cost to receive information (e.g. travels and cost for internet café), particularly the cost of time and human of implementation.

3) Policies variables:

The observation results indicate that policies main concerns for the strategies on missions and visions to investment for information technologies, for instant 1) having strategies for encouraging the teachers to have ambitions to develop eLearning courses, 2) having the policies with cooperation among teachers, staff and the others (e.g. library), and 3) Government have increasingly demanded and forcing the universities to engage in kind of planning and organisation in eLearning programme which is commonplace in business, but largely foreign to the collegial culture.

4) Culture variables:

Although, the motivation shown the percentage of opinions on the MSU eLearning courses are mostly neither agree nor disagree all parts of the questions which will be carefulness within eLearning environment, especially, the people within eLearning system must have high self-efficacy and the appropriate behavioural skills such as taking responsibility for learning (e.g. policy makers, lecturers, students and staffs). However, life in conventional universities is related organisational cultures which often operating simultaneously. In academic

cultures are mostly relevant with the collegial and managerial culture, this also dominates with the development and the negotiated.

5. CONCLUSION

E-learning is a rapidly developing area and is gaining increasingly importance in all sectors of education. Indeed, healthcare sector also included in this situation. Consequently, the result of a successful implementation of eLearning is one that engages all the stakeholders, especially the students and the lecturers. For this research, the drivers and barriers for eLearning are therefore listed in four domains: infrastructure, finance, policies, and culture, the model is called IF-PC. The IF-PC model is to ensure that the essential factors in each domain are made clear when planning and managing online learning and that the domains are connected to each other. Undoubtedly, eLearning will not be the only factor to change the focus of universities. Other forces are at work including changing governmental and professional requirements, economic development, and technological change, changing employment patterns and opportunities, and changing expectations of students. Although, the literature has presented many positive benefits and impacts on eLearning, none has addressed the impact in the four domains of the IF-PC model; Infrastructure, Finance, Policies, and Culture. Therefore, consideration of these is crucial, while these have been investigated separately; especially when implementing learning and teaching at a distance, they have not been assessed as a whole. This applies particularly to those who use technology, for instance healthcare professionals in developing countries such as Thailand who need to continue updating information for their patients.

6. REFERENCES

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