



Malaysian Journal Of ELT Research

ISSN: 1511-8002

Vol. 7 (2), 2011

**The Use of ICT Among University Lecturers:
A Pedagogical Perspective**

PUTERI ROHANI MEGAT ABDUL RAHIM

Universiti Teknologi MARA

Perak, Malaysia

Abstract

The purpose of this study was to evaluate the current pedagogical practices in relation to ICT at a university, particularly for its off-campus programmes. This study addresses the need to understand aspects of lecturers' pedagogies and practices in relation to ICT and to review trends in the ways in which ICT is used and employed. In this single case study, three methods of gathering data were employed which were questionnaires on e-Learning (ICT) employment, observations made during the teaching and learning process, and individual interviews with the participants. The participants were 13 university lecturers

teaching off-campus programmes at a public university in the northern part of Malaysia. The findings indicate that the participants acknowledged the potentials of having ICT in classroom. However, their pedagogical practices did not reflect their understanding of the potential of affordances of ICT. The findings reveal the complex relations between lecturers' orientations concerning the conditions affecting technology use, and the lecturers' views concerning their pedagogical practices.

KEYWORDS: ICT, e-Learning, powerful tool, pedagogical practices, lecturers' views

Introduction

Information and communications technology (ICT) is significantly and rapidly transforming education. With the growing emphasis on integrating technology in education, many educators and administrators of institutions of higher learning have found avenues to equip their institutions with the necessary technological hardware and software. Many researchers claim that having access to technology can improve teaching and learning (Deepwell, 2007; Mello, 2006), and thus, many higher education institutions have adopted the use of information and communication technology (ICT) in their delivery systems.

Through the integration of information and communication technology (ICT), education is fast transforming. It has changed the way in which education is delivered, and students are connected to a wider world beyond the classroom. Furthermore, advances in learning

technologies have resulted in a ceaseless search for more effective and applicable methods of instruction (Mello, 2006). Consequently, it allows a more flexible way of acquiring knowledge and students can approach learning at their own pace. In fact, educational technology has become more than gaining skills or theory; it has instead become an exploration of new possibilities and solutions for curriculum, teaching and learning (King, 2002). Thus, the trend of using instructional technology such as the learning management system (LMS), that is, e-Learning is becoming more popular in the educational setting.

Deepwell (2007) opines that a non-traditional learning environment such as e-Learning, online and video conferencing used in delivery systems stimulates the learning environment in which students interact with each other, expanding and sharing their ideas via electronic forums. E-Learning tools enable students to access, share, analyze and present information gained from a variety of sources. The use of such tools enables students to work both collaboratively and independently.

Currently, universities continue to invest heavily in technology for classrooms to upgrade the standard of teaching and learning as well as to improve communication and the dissemination of information amongst staff and students. The use of instructional technology has increased through directives from institutions. Despite the increased availability of computers, software and local networking, however, many educators in

higher institutions report little or no use of this growing potential (Webb & Cox, 2004). Instead, the rapid pace of change that the technology demands of the educational environment heightens the tension between the urge to innovate and the need to ensure suitable quality both in lectures and pedagogy (Deepwell, 2007). The emergence of technology in education causes lecturers and teachers to feel pressured to use technology in their teaching without understanding how it can be applied in their classroom. This creates a problem in the smooth transition of the teaching and learning process to integrate technology in their classroom.

Although, there are many examples of good practice of lecturers and teachers using new digital media and technologies in their teaching and learning, in the context of pedagogy, opportunities to provide useful, contextual instruction which will allow the lecturers and learners to empower their own learning may be missed (West, Waddoups & Graham, 2007). To discover how to optimize the use of learning technologies, the focus should be on pedagogy. Watkins and Mortimore (1999) describe pedagogy as an increasingly integrated conceptualization which specifies between its elements: the teacher, the classroom or other contexts, content, the view of learning, and learning about learning, which means the process of imparting knowledge or skills. For technology, Deepwell (2007) explains that pedagogical developments in relation to the implementation of e-Learning include disciplinary and interdisciplinary cultures: teaching, learning, and assessment regimes, educational development practices, and profiles of students.

Technology is moving rapidly, and although the underlying theories of pedagogy are stable, their instantiation within the context of a formal education system is a complex process (Laurillard, 2007). As proposed by Jeffries, Carsten-Stahl & McRobb (2007), the employment of ICT in the teaching and learning process should not be limited to keeping abreast of technological change. They are of the opinion that lecturers should instead employ ICT in their pedagogical instruction. In other words, to embrace ICT in the teaching and learning process, lecturers should be able to link and integrate ICT with their pedagogical practices.

Despite the undisputable importance of ICT in the realm of education, there seem to be issues that have not been addressed and understood sufficiently (Jeffries, Carsten-Stahl & McRobb, 2007). As indicated by Jeffries, Carsten-Stahl and McRobb (2007) and West, Waddoups and Graham (2007), issues pertaining to the relationships between technological tools and their links with pedagogy need to be researched and explored further so that effective learning in employing ICT can be developed successfully. The pedagogical approaches in these studies included promoting student interaction with ICT but generally do not address the teachers' or lecturers' role (Webb & Cox, 2004).

Likewise, in the local context, similar concerns were also voiced by researchers (Melor, 2007; Norazila Abd Aziz, 2008; Samuel & Zaitun, 2007). Most of the studies conducted by local researchers have focused on the school setting. There is minimal research studying the adoption of ICT and its relationship with lecturers' pedagogical practices in higher educational contexts (Webb & Cox, 2004; West, Waddoups & Graham, 2007)

In order to address this issue, current pedagogical practices among lecturers were investigated to gain a better perspective of the usage of e-Learning as a flexible interaction medium of learning at the tertiary level. An overview of current existing e-Learning at a public university in the northern part of Malaysia was sought. The purpose of the study was to evaluate and investigate current pedagogical practices in relation to ICT at the university, particularly for its off-campus programme. In addition, the aim of the study was to review trends in the ways in which ICT is understood and applied in the classroom. It is hoped that this small-scale study will reveal information that will be of use for university educators and administrators who are considering developing e-Learning in their institutions or who wish to enhance existing e-Learning. Furthermore, the study will help to identify important gaps in current knowledge about ICT in education and pedagogical practices related to this.

The study addressed the following research questions:

1. What are the features of ICT the lecturers employ in their teaching?
2. How frequently do they use ICT?
3. What are the lecturers' views on ICT?
4. What are the current pedagogical practices on ICT among lecturers in relation to

e-Learning in their classroom?

Existing e-Learning available at the university

The *e-Learn Centre* was established on the 1st of December 2003 and operates under the Academic Affairs Division at the university. The centre is responsible for handling the adaptation of e-Learning in the university. As a start, the centre formally launched its Learning Management System (LMS) portal on the 30th of December 2003. As of now, the centre is developing strategic planning to ensure e-Learning achieves its objectives by conducting workshops for teachers on what *e-learning* is and the features of *e-learning* are.

The e-Learning Portal at the university is a centre of virtual teaching and learning. The university has created the e-Learn System as a Learning Management System to encourage lecturers to implement e-Learning in the teaching process. One of the functions of this e-Learning platform is to provide an effective and continuous interaction channel between the lecturers and students. In addition, the e-Learning Portal aims to improve flexibility in gaining knowledge apart from the traditional classroom. The *e-learn* features that are available are announcements, course content, support materials, assignments/projects, assessment, course forums, groups, glossary, references, *myDrawer* and Control Panel. The concept of e-Learning in this university's context is to encourage

the lecturers to use e-Learning technology as a platform to complement, enrich and improve the teaching and learning process. It is also a tool to encourage knowledge sharing among lecturers and students from all over Malaysia. However, the structure of *e-learn* is still basic where the focus is on uploading and downloading notes. Instruction on how technology can be integrated in the teaching and learning process in a classroom by the lecturers is not emphasized.

Transformation of change to lecturers

The effective use of IT requires substantial demands on lecturer's knowledge and understanding of, and familiarization with, a variety of software in order to integrate the activities in philosophical and pedagogical terms (Cox, Johnson and Watson, 1993). However, as argued by Carlson (2002), transmission of technological innovations in educational settings does not automatically result in changes in teachers or lecturers' classroom practices. The Learning Management System (LMS) may appear to offer a means of regulating and packaging pedagogical activities by offering templates that assure order and neatness, and facilitate the control of quality (Coates, James & Baldwin, 2005). However, although the system is a device for teaching, attention has been placed on the technical, financial, and administrative aspects. Thus, this may explain why resistance to the integration of technology in teaching among educators still persists as they do not see how the integration can help in the teaching and learning process. This explains the importance of pedagogical aspects in determining the success of implementing ICT in the teaching and learning process.

Theoretical Framework

The conceptual framework used in this study draws on the ideas of ‘subject subculture’ and constructivism. The former relates to cultures and styles of teaching. Goodson (1997) says that both of these are linked to the cultures of subjects. The subcultures are further divided into two concepts, subject as paradigm and subject as pedagogy. Subject as paradigm refers to views and beliefs that the teachers subscribe to and employ in their teaching practice; the latter refers to the system and the art of teaching. The theory of constructivism is related to socio-cultural features where learners engage in learning. This involves constructing and connecting meanings in new ways. In the context of learning, the educational task engages learners in activities that transform their understandings in relation to the social realm by connecting with other kinds of meaning (Stevenson, 2004). Students must learn to learn. The process of learning also applies to the lecturer as it is the lecturer who is going to carry out the lesson. Therefore, they also need to learn how to integrate ICT in their teaching. The lecturer in this context is often viewed as an agent of knowledge transmission or as someone facilitating the students’ discovery of knowledge (Gagne, 1985). Learning in a higher institution requires students to take control of their own learning. This is particularly relevant in the context of adult learners who are studying part-time through distance learning or off-campus programmes. The

latter framework focuses on lecturers being able to scaffold the learning to their students. In order to ensure that the transfer of learning is successful, the lecturer must first have a better understanding of how the subject content can be taught in relation to ICT.

Methodology

In this small-scale research, a single case study was employed. Three data sources were examined: a set of questionnaires, classroom observations, and interviews. The questionnaire and interview were mainly employed to study explicit educational beliefs of ICT; the classroom observations with participating lecturers enabled the researcher to observe the lecturers' pedagogical practices in employing ICT. A 32-item questionnaire designed by Tearle (2002) was adapted for this study. The questionnaire is organised into three sections. The first section of the questionnaire elicits information about the background and the experience of lecturers. The second section deals with question on the use of ICT, the available features of the tools available, the frequency of usage in teaching and in lesson preparation, and views about the use of ICT in the curriculum. It was the intention of the researcher to gauge whether the lecturers employed and used *e-learn* when teaching their off-campus students. The final section asked respondents to list the positive and negative influences of their use of ICT in teaching and to provide reasons why they either do or do not use ICT in their teaching. In addition, the questions

posed were focused on whether they encourage their students to use *e-learn*, how they integrate ICT in their classroom and how they perceive ICT in the process of teaching and learning.

The questionnaire, which consisted of questions on application of *e-learn* and usage of ICT in the classroom, was distributed to 13 lecturers who have been teaching the off-campus programme for more than five years. All of them have 10 to 20 years of teaching experience. The participants consented to participate prior to the study. The off-campus programme consists of a diverse group of learners from different backgrounds such as homemakers, primary school teachers and clerks and the programme was chosen as it caters to adult learners who will benefit more with the use of the *e-learn* system. All the 13 participants had attended a two-day workshop on *e-learn*. This is a preliminary study of the evaluation of pedagogical practices in the integration of ICT in the teaching and learning process in the off-campus programme offered at the university. Out of the 13 participants, the researcher decided to interview only three based on observations during class hours and from their responses in the questionnaire. The three were chosen because they had distinct beliefs regarding their classroom practice and their views on technology. The intended purpose of having the interview was to get a better perspective from the participants' point of view on ICT and their pedagogical practices. Besides the three participants, the researcher also interviewed a Computer Science lecturer who is responsible for conducting workshops on *e-learn* at the university. The researcher hoped

to gain in-depth information on *e-learn* and the pedagogical aspects of integrating ICT in the teaching and learning process from this lecturer.

Data Analysis

The data were analyzed in two stages. At the first stage, the participants' responses from the set of questionnaires were analyzed using SPSS version 11.5. A simple data analysis was employed to run an analysis on frequency and cross tabulation of the respondents.

The analysis of the participants' views and employment of ICT allowed the researcher to identify and determine the pattern of responses among the participants which were then subdivided into positive, impartial and negative statements on the integration of ICT.

The data gained were later compared and contrasted with the data obtained from the classroom observations. In stage two of the data analysis, the researcher narrowed down the focus to the participants themselves. The intention was to have a better understanding of the participants' educational beliefs and pedagogical practices with ICT. All the data obtained from the participants were later transcribed and coded using categories which were used to obtain a deeper dimension that might help to clarify answers as well as enrich the lecturer's responses.

Findings

Abdul Rahim, P. (2011). Malaysian Journal of ELT Research, Vol. 7(2), p. 1-32. www.melta.org.my

Features of e-Learn (ICT) employed

The findings obtained from the questionnaire indicate that the majority of the lecturers employed *e-learn* to either post announcements or display their course content. As illustrated in Table 1, the majority of the lecturers use e-learn for announcement (77%) and course content purposes (38%). Only a small number of them use *e-learn* to support materials for course forums and groups, which indicates that these lecturers do use *e-learn* to communicate with their students. Groups here are identified as groups of students in respective courses that they were taking that particular semester. The small percentages of lecturers employing *e-learn* indicates that even after attending workshops on *e-learn*, some still do not use it for their teaching purposes. Through classroom observations, the researcher noticed that not all the lecturers were comfortable with the use of ICT in their teaching. Those who were comfortable with ICT were more at ease in applying it in their teaching compared to their counterparts. However, even after observing the classes several times the researcher noticed that the application was more of a cursory attempt with no intention of integrating ICT in their pedagogical instruction. They only applied ICT when posting the syllabus of the course which was usually done at the beginning of the semester.

Table 1. The features of e-learn that the lecturers employed in their teaching

| | |
|----------------------------|-------------------------|
| Features of E-learn | Lecturers (n=13) |
|----------------------------|-------------------------|

| | |
|-----------------------|-----------|
| Announcement | 5 (38 %) |
| Course content | 10 (77 %) |
| Support materials | 3 (23 %) |
| Assignments/ Projects | 1 (8%) |
| Assessments | 1 (8%) |
| Course Forum | 2 (15%) |
| Group | 2 (15%) |
| myDrawer | 1 (8%) |

* Group – interaction between the lecturer and students according to their specific course code for that particular semester

To the question about the frequency of *e-learn* usage in a week, the majority of the lecturers stated that they did not use *e-learn*, with only one participant (8%) indicating the use of *e-learn* more than twice in a week. The rest of the participants indicated that they used it either once or twice in a week (see Table 2). The findings concurred with Levin and Wadmany’s (2008) that “the teachers were mundanely using ICT for presentation, information delivery, and as management tools rather than encouraging inquiry, collaboration, and to transform the teacher-student relationship” (p.235).

Table 2. The number of times the lecturers use e-learn in a week

| n=13 | More than twice | Twice | Once | None |
|--|------------------------|--------------|-------------|-------------|
| How often do you use <i>e-learn</i> in a week? | 1 (8%) | 2 (15%) | 3 (23%) | 7 (54%) |

Table 3 shows that 62% of the lecturers do not encourage their students to use *e-learn*. Only 38% encourage their students to use *e-learn*. This suggests that since they themselves do not employ e-learn in their teaching, it is unlikely they would encourage their students to do so. Reksten (2000) opines that a successful integration of ICT does not only concern technology, but also the pedagogical concerns and how it can transform teaching and learning.

Table 3. Encourage the use of ICT among students

| | Yes | No | Sometimes |
|--|------------|-----------|------------------|
| Do you encourage your students to use <i>e-learn</i> ? | 2 (15%) | 8 (62%) | 3 (23%) |

Lecturers’ views on ICT use

Lecturers’ beliefs about teaching and learning as well as their understanding about the affordances provided by the *e-learn* system is important in their pedagogical reasoning

(Mello, 2006; Rogers & Finlayson, 2004; Samuel & Zaitun, 2007). Lecturers need to be able to see the benefits of having such a system so that it may justify their willingness to change their pedagogical identities in relation to ICT.

When asked about their views of ICT, the respondents indicated that they do not see how ICT can improve or enhance their teaching. The majority stated that their current teaching practices would still enhance the learning of their students even without employing ICT in their teaching. Only one lecturer stated that having ICT allows her to be more creative and flexible in her teaching. The majority asserted in their responses to the open-ended question on ICT that it does not bring benefit to their teaching (see Table 4). The negative statements given by the lecturers reflect their perception of integrating ICT in their classrooms. To further understand the lecturers' views on this matter, three out of the 13 participants were selected to be interviewed. Reksten (2000), Rogers and Finlayson (2004) stipulated that the way in which lecturers integrate technology has the potential to bring change in the education process. Thus, the attitude and self-efficacy towards technology play an important role. Only when lecturers have a positive attitude, understand and value the benefits of integrating ICT in their classroom will the transformation of education be successful (Mello, 2006; Zongyi Deng, 2007).

Table 4: lecturers' views on ICT

| | |
|--------------------------|---|
| Burdensome & troublesome | ICT makes preparing the lesson more difficult |
|--------------------------|---|

| | |
|--|---|
| More creative and flexible | Not sure how to use ICT in teaching |
| Time Consuming | Insufficient knowledge of how to use ICT equipment |
| Lack of expertise with ICT | ICT makes lesson more difficult |
| Lack of knowledge of how to use ICT in teaching and learning | More student-centred |
| Students know more about ICT | Fear of ‘making a fool’ of oneself in front of students |

Lecturer’s subject styles and beliefs

As mentioned earlier to have a better understanding of the phenomenon, the researcher decided to interview the participants individually through purposeful sampling; only three participants and one Computer Science lecturer were selected. For the purpose of this study, pseudonyms are used to mask their identities (the Computer Science lecturer – Marina, the other three participants – Danial, Amira, and Fatini).

All four interviewees showed a strong sense of subject identity. This was clearly reflected in their beliefs and perceptions that were extracted from the interview. The beliefs and perceptions of these lecturers mirrored their own opinions on curriculum change in their teaching. As stated by Bernstein (1996), the concept of subject as paradigm forms specific pedagogical identities. In other words how the lecturers view their subject content influences their current view on pedagogical practices.

For example, Marina, who was exposed to the integration of ICT during her university years, applauds the use of ICT particularly in institutions of higher learning. She was more open to the idea since she herself was the one who provided the workshop on *e-learn* to the lecturers. She believes she should champion the idea in order to set the model of learning in relation to ICT to other lecturers:

As the one who conducts the workshop on e-learn, I should practically use it. Furthermore we already have access to the system here so why shouldn't we use them.

In contrast to this is one of the lecturers who is not keen on having ICT and *e-learn* in his teaching. Danial does not understand why we should embark on this as one is able to teach effectively without the integration of ICT in the classroom. He reports:

I was taught using the normal way of teaching, without any imposition of new successful. So why shouldn't I apply the same method. Why should I use ICT when I am not at ease using it myself.

Fatini, another lecturer, does not share Danial's view. A similar response was given by another lecturer, Fatini. Although in her response in the questionnaire she appeared to be impartial towards ICT, she argues that it would be interesting to change the style of teaching occasionally to stimulate the students' interest in learning. She says:

To tell you the truth I use ICT in my teaching because I see all my other colleagues are using them and because we are asked to employ it. I would not want other students to think that I am from the stone-aged generation. But as a lecturer I think we should be flexible to use ICT so that the lesson would be interesting to the students.

Although the other lecturer, Amira, welcomes the idea of ICT in the classroom, she does not welcome *e-learn* as a Learning Management System. She does not want to be restricted to the use of one system. She advocates that lecturers should be given the freedom to use whatever tools are necessary in order to make learning better. Her education background showed that besides having a diploma and Master's in Social Science, she has a bachelor's degree in Engineering, which reflects her inclination to be creative and more flexible in her style of teaching. Nevertheless, she is not keen in using *e-learn* as she feels it is burdensome. As stipulated by Levin and Wadmany (2008), the more positive the responses of perceived usefulness and perceived ease of use, then the more positive the attitudes of teachers will be to the use of ICT and the more likely they

will be to use ICT in their teaching. Marina, the Computer Science lecturer who conducted the workshop on *e-learn*, admits that the number of lecturers who access and use e-learn is very minimal. She reports:

Many lectures gave a lot of excuses such as the server is slow, not allowing them to have access to the e-learn easily, not having enough time etc, which I think is just a lame excuse. They actually do not even try. They just refuse to apply and use them in their teaching. This is particularly so for senior and veteran lecturers, especially those with 15 to 20 years of teaching experience and who are not being exposed to integrate ICT in their classroom during their university or education training years.

This conflicting ideas on lifelong learning and ICT creates a contradictory culture of understanding. Thus, this may create confusion amongst the practitioners of education in their everyday working lives as they tackle to the challenge of a new pedagogic identity with the integration of new technology.

The current pedagogical practices of ICT

To the question on whether they integrate ICT in their teaching, 46% of the respondents reported that they do; while 54% said otherwise (see Table 5). When those who used ICT were asked to elaborate how they used ICT, most of the respondents reported they

use the Internet to look for information and used PowerPoint presentations in their teaching. Only one lecturer stated she used it for teaching listening and doing exercises on listening through ICT. This illustrates the limited knowledge and understanding of the use of ICT in the teaching and learning process although they have attended the workshop on *e-learn*. This finding supports the findings in studies done by Abd Rahman (2000); Coates, James and Baldwin, (2005); Lee (2006); Levin and Wadmany (2008); and Nurazila Abd Aziz (2008), which suggests that the level of transfer of acquired competencies and learning to practice is very weak regardless of the quality of ICT equipment available to lecturers in the school environment.

Table 5. Use of e-learn and ict integration in classroom

| | Yes | No | Sometimes |
|--|------------|-----------|------------------|
| Do you integrate ICT in your teaching? | 2 (15%) | 7 (54%) | 4 (31%) |

Findings of research which investigated effective pedagogy when using ICT were that teachers' thinking and beliefs about teaching and learning were linked to what they did in the classroom and choices they made in selecting how to integrate ICT into their teaching (Moseley, Higgins, Bramald, Hardman, Miller, Mroz, Tse, Newton, Thompson, Williamson, Halligan, Bramald, Newton, Tymms, Henderson, Stout, 1999; Samuel & Zaitun, 2007). The two lecturers, Danial and Fatini, when asked during the interview how they integrated ICT in their teaching, reported they sometimes used PowerPoint slides

when teaching and would ask the students to surf the Internet for additional exercises on a grammar website. One of the lecturers, Danial, indicated that:

It is time consuming to prepare lesson using ICT. What more when I am not an IT savvy person. I am afraid I may lose some important information during the uploading and all my hard work will go to waste. And sometimes it's embarrassing to find out that your students know more about the computer than you...so why should you lose your 'face' for nothing.

The limited use indicates the lecturers own limitation of knowledge of how to make use of ICT in their teaching. They only perceive ICT as a system of delivery in their teaching not as a tool to facilitate teaching and understanding amongst their students. In other words, as Levin and Wadmany (2008) point out, ICT is mostly used when it fits in well with traditional practices; teachers focus on computer skills rather than integrated learning intentions. They integrate ICT to issues of management and organization rather than learning. This illustrates that the lecturers are not ready to utilize their knowledge in relation to ICT and teaching. Furthermore, in some instances, lecturers observed that students are more knowledgeable about the possibilities of the instructional uses of technology than they are. This is an indicative of the technological gap in the use and application of technology despite the influx of a variety of technologies (Mello, 2006;

Samuel & Zaitun, 2007). In addition, this is another factor why some lecturers are reluctant to integrate ICT in their classrooms, because they fear 'losing face' and looking incompetent in front of their students. This may be a result of the lack of training and exposure to ICT during their own education. As reported by the US Department of Education (2000), many in today's teaching courses or education programmes offered at universities still do not provide the students with opportunities to learn how to construct and apply technology within their lesson frameworks.

However, Amira who was more open to the idea of technology in teaching, said that she normally has all her teaching materials uploaded in the computer and would just ask her students to access them on their own. She further elaborates:

One thing good of having ICT in teaching it allows you more flexibility of what to do in fact the students prefer this as it allows them to approach learning at their own pace. I don't have to teach much which is good for me I can do what I want. I usually tell my students today for instance we are going to do reading comprehension. So I will ask them to go to the folder which I already download in the computer then they will start doing it. Once they finish they can also check their work.

Although she is open to the idea of ICT she has not really used and integrated ICT in her teaching. She has not made use of the potential offered by ICT in her teaching. There is little transfer of competencies in ICT to teaching practices. Webb and Cox (2004) argued that the developments in ICT are making the role of the teacher/lecturer much more complex. Even though lecturers' beliefs about the value of ICT for learning are important in their pedagogical reasoning, the change in the beliefs and practices does not occur automatically (Samuel & Zaitun, 2008). This is a very difficult and complex process for any individual lecturer to handle, particularly so for those who have never undergone any training or exposure to using ICT.

Marina, who conducts workshops on e-learn, admitted that those who attended the workshop were still not able to understand the benefits of integrating ICT in their teaching. Good teaching is not just merely adding technology to the existing teaching and content subject. Rather, the introduction of technology should allow the representation of new concepts and requires a developing sensitivity to the dynamic, transactional relationship between all three components (Koehler and Mishra, 2005). In addition, the use of ICT tools should foster the attainment of learning outcomes which would subsequently foster and enhance the learning process of the students. Thus, lecturers and teachers need to understand their role in a technologically oriented classroom; they should not perceive technology as a separate and unrelated entity of knowledge from the context of teaching.

Pedagogical implications

This study provides a unique opportunity to examine aspects concerning the implementation, integration and effect of using ICT in subject teaching, as well as to consider the pedagogical perspectives amongst lecturers which would indicate a permanent adoption of ICT in their teaching. The evidence suggests that in order for lecturers in institutions of higher learning to incorporate and embrace the use of ICT successfully they need to understand the value of ICT and the conception of pedagogy when integrating ICT in their teaching.

There are several implications of this study. The first implication is that, when educators are able to understand the potential of the use of ICT in their teaching they are able to fully utilize this in the teaching and learning process that caters to the best interests of their learners. However, the use of ICT cannot succeed on its own merits (Kennewell, 2001) as it also needs the actions of a teacher. Numerous studies have stressed the importance of the lecturer's role integrating ICT into classroom teaching (Pedretti, Smith-Mayer, & Woodrow, 1999). As Goodson and Mangan (1995) point out, lecturers are at the heart of the ongoing negotiation between teaching, learning and new technology and if a 'cultural clash' is to be avoided then the integration of computers into established subject subcultures needs to be handled sensitively. The subcultures are associated with

‘worthwhile knowledge’, ‘effective teaching’, ‘the good student’ and ‘appropriate assessment’ as defined by Goodson (1997).

Next, teacher training and professional development should support ICT-related teaching models that encourage students and lecturers to play an active role in teaching and learning activities. Emphasis and attention must be placed on the pedagogy behind the use of ICTs for teaching and learning. Teacher training and pedagogical change need to be aligned with a curriculum that emphasizes skills in solving complex real-world problems and producing knowledge products. The full realization of the potential educational benefits of ICT is not automatic. The effective integration of ICT into the educational system is a complex, multifaceted process which involves not only technology, support by the administrator and sufficient finance but also pedagogy, lecturer readiness and competencies.

Thirdly, every lecturer should know how to use technology effectively in their classroom. Introducing technology to the educational process is insufficient. Having the knowledge of technology will not lead to change as change in the education process will only take place when the lecturers understand and are able to integrate technology in their teaching. It is not a matter of just knowing what technology can do but also what technology can actually do for us as lecturers. It is essential for lecturers to be able to effectively use these tools for learning so that they can exploit the full benefits of ICTs in learning.

Finally, lecturers need to adopt and develop a pedagogic culture that allows them to be more flexible and able to transform their initial perception of ICT into a more constructive approach of introducing ICT into their classroom. This will allow the transition of change to empower learning to be more successful, particularly in dealing with adult learners, as lecturers are able to understand the dimension of the use of ICT for teaching and learning. Pedagogic change requires the lecturers to be able to see the relevance of ICT, recognize the benefits, use them as a resource in teaching and reflect on its pedagogical implications. Finally, they must be ready and willing to take the risk in the process of change. Hence, necessary steps to provide continuous support and training to lecturers on integrating ICT in their teaching and learning are important to ensure the already existing system on LMS can be further strengthened and improved so learning with new technology can be fully harnessed.

Despite the increased availability of computers, software, and Internet access, many lecturers do not appear to see the growing potential of technology in their teaching. According to Stein, Smith and Silver (1999), the professional development of lecturers must begin to focus on long-term development of lecturers as individuals as well as the development of self-sustaining learning communities within schools or colleges. Therefore, it is necessary to provide sufficient training and exposure to teachers and lecturers on how to integrate ICT in their teaching and learning rather than just mentioning what the delivery system of e-Learning is. At present, most education

programmes do not place proper emphasis on the importance of technology in education (Strudler, McKinney, Jones & Quinn, 1999). If lecturers, the implementers of the existing curriculum, are not given the necessary support and instruction in relation to technology and how technology can be integrated into their teaching practice, resistance to change will persist. As suggested by Webb and Cox (2004), lecturers' beliefs about the value of ICT for learning influence the success of teaching and the teacher's pedagogical reasoning.

Conclusion

In light of high attrition rates within online distance education environments and a growing number of courses using online technologies, administrators of institutions of higher learning need to give serious consideration to pedagogical matters rather than only to the technical aspects of ICT. The challenge to integrate ICT in the teaching should be the key point for the university administrators to tackle. From the findings it can be deduced that how lecturers perceive ICT influences their pedagogical practices.

Providing the necessary training and support to the lecturers will help bring down the barriers. It is important for administrators and academicians of higher learning to realize that not every lecturer has in-depth knowledge of new technology and fully appreciates how to apply it in their teaching. Thus, support services and training development are needed to provide assistance and facilitate the use of ICT. Providing training which includes the pedagogical aspects of integrating ICT into teaching for successful engagement in distance learning environment is likely to prove beneficial for both

distance education and traditional education that is supported through online education methods. In addition, more research is needed to shed light on which pedagogical practices can be identified as successful in an online environment. This knowledge can contribute vital information for further quests in understanding the online modality of education.

References

- Abd Rahman Daud. (2000). *Kefahaman terhadap konsep penggunaan ICT di dalam bilik darjah*. Tanjung Malim: Universiti Perguruan Sultan Idris.
- Bernstein, B. (1996). *Pedagogy, symbolic control and identity*. London: Taylor & Francis.
- Carlson, S. (2002). The missing link in educational technology: Trained teachers. *TechKnowLogia*, 4(4), 7-11. Retrieved January, 2009 from <http://www.techknowlogia.org/>
- Coates, H., James, R. & Baldwin, G. (2005). A critical examination of the effects of learning management systems on university teaching and learning. *Tertiary Education and Management*, 11 (1), 19-36.
- Cox, M. J., Johnson, D. C. & Watson, D. (1993). *The Impact Report: an evaluation of the impact of information technology on children's achievements in primary and secondary schools*. Official research report. London: Department for Education and Skills.
- Deepwell, F. (2007). Embedding quality in e-Learning implementation through evaluation. *Educational Technology & Society*, 10 (2), 34-43.
- Gagne, R. (1985). *The conditions of learning*. New York: Holt Reinhart and Winston.
- Abdul Rahim, P. (2011). *Malaysian Journal of ELT Research*, Vol. 7(2), p. 1-32. www.melta.org.my

- Goodson, I. F. (1997). *Studying curriculum: cases and methods*. Buckingham: Open University Press.
- Goodson, I. F. & Mangan, J. M. (1995). Subject cultures and the introduction of classroom computers, *British Educational Research Journal*, 21(5), pp. 613-629.
- Jefferies, P., Carsten-Stahl, B., & McRobb, S. (2007). Exploring the relationships between pedagogy, ethics and technology: Building a framework for strategy development, *Technology, Pedagogy and Education*, 16(1), 111-126.
- Kennewell, S. (2001). Using affordances and constraints to evaluate the use of information and communications technology in teaching and learning. *Journal of Information Technology for Teacher Education*, 10 (1& 2), 101-116.
- King, K. P. (2002). *A journey of transformation: A model of educators' learning experiences in educational technology*. ERIC.
- Koehler, M. J. & Mishra, P. (2005). What happens when teachers design educational Technology? the development of technological pedagogical content knowledge. *Journal of Educational Computing Research*, 32 (2), 131-152.
- Laurillard, D. (2007). Technology, pedagogy and education: concluding comments. *Technology, Pedagogy and Education*, 16(3), 357-360.
- Lee, K. W. (2006, July). *English language teachers' concerns and perceptions of professional development in the context of the Malaysian Smart School implementation*. Poster presentation at The First Lancaster University Postgraduate Conference in Linguistics and Language Teaching, Lancaster, United Kingdom. Retrieved November, 2009 from <http://www.lancs.ac.uk>.
- Levin, T. & Wadmany, R. (2008). Teachers' views on factors affecting effective integration of information technology in the classroom: Developmental scenery. *Journal of Technology and Teacher Education*, 16(2), 233-263.

- Mello, L. R. (2006). Identifying success in the application of information and communication technology as a curriculum teaching and learning tool. *Technology, Pedagogy and Education, 15*(1), 95-106.
- Melor Yunus. (2007). Malaysian ESL teachers' use of ICT in their classrooms: Expectations and realities. *ReCALL, 19*(1), 79-95.
- Moseley, D., Higgins, S., Bramald, R., Hardman, F., Miller, J., Mroz, M., Tse, H., Newton, D., Thompson, I., Williamson, J., Halligan, J., Bramald, S., Newton, L., Tymms, P., Henderson, B. & Stout, J. (1999). *Effective pedagogy using ICT for literacy and numeracy in primary schools*. Newcastle: University of Newcastle.
- Norazila Abd Aziz. (2008). Taking concerns into account: Understanding the technology adoption process from the ESL teachers' point of view. *The English Teacher, vol. xxxvii*, 76-89.
- Pedretti, E., Smith-Mayer, J. & Woodrow, J. (1999). Teaming technology enhanced instruction in the science classroom and teacher professional development. *Journal of Technology and Teacher Education, 7*, 131-143.
- Reksten, L. E. (2000). *Using technology to increase student learning*. Thousand Oaks, CA: Corwin Press, Inc.
- Rogers, L. & Finlayson, H. (2004). Developing successful pedagogy with information and communications technology: How are science teachers meeting the challenge? *Technology, Pedagogy and Education, 13*(3), 287-305.
- Samuel, R. J., & Zaitun Abu Bakar. (2007). Do teachers have adequate ICT resources and the right skills in integrating ICT tools in the teaching and learning of English language in Malaysian schools? *The Electronic Journal of Information Systems in Developing Countries, 29*, 1-15.
- Stein, M. K., Smith, M. S., & Silver, E. A. (1999). The development of professional developers: Learning to assist teachers in new ways. *Harvard Educational Review, 69*(3), 237-269.

- Stevenson, J. (2004). Developing technological knowledge. *International Journal of Technology and Design Education*, 14(1), 5-19.
- Strudler, N. B., McKinney, M. O, Jones, W. P., & Quinn, L. F. (1999). First-year teachers' use of technology: Preparation, expectations, and realities. *Journal of Technology and Teacher Education*, 7, 115-129.
- Tearle, P. A. (2002). The implementation of information and communications technology for teaching and learning in secondary education in the United Kingdom, Unpublished Ph.D. thesis, Exeter University.
- U.S. Department of Education (2000). *Computers in our nation's schools*. Washington, D.C.: Author.
- Watkins, C. & Mortimore, P. (1999). Pedagogy: what do we know? In P. Mortimore (Ed.) *Understanding Pedagogy and Its Impact on Learning*. London: Paul Chapman.
- Webb, M. & Cox, M. (2004). A review of pedagogy related to information and communications technology. *Technology, Pedagogy and Education*, vol.13, 3. 235-286.
- West, R. E., Waddoups, G., & Graham, C. R. (2007). Understanding the experiences of instructor as they adopt a course management system. *Education Tech Research Dev*, 55, 1-26.
- Zongyi Deng. (2007). Transforming the subject matter: Examining the intellectual roots of pedagogical content knowledge. *Curriculum Inquiry*, 37(3), 279-295.