

ENHANCING THE QUALITY OF TEACHING AT HIGHER EDUCATION INSTITUTIONS IN MALAYSIA THROUGH THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Anantha Raj A. Arokiasamy

Quest International University Perak (QIUP)

No. 227, Plaza The Teng Seng (Level 2),

Jalan Raja Permaisuri Bainun,

30250 Ipoh, Perak,

Malaysia.

anantharaj.arokiasamy@qiup.edu.my

ABSTRACT

The purpose of this paper is to analyze the integration of Information and Communication Technologies (ICT) in higher education for imparting easily accessible, affordable and quality higher education leading to the uplift of Malaysia. The focus of the paper is on the benefits that ICT integration in education can provide, right from breaking time and distance barriers to facilitating collaboration and knowledge sharing among geographically distributed students. ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to contribute to the industry. We will also analyze if ICT does indeed improve or hinder the quality of learning among higher education students. This paper reports on the changing trends in use of ICTs for instruction in higher education institutions (HEIs) and discusses a mini-case study of how ICTs are being used by lecturers in one university in Malaysia.

Keywords: *Quality of higher education, information and communication technology, flexibility, lifelong learners and economy.*

1.0 INTRODUCTION

Teaching approaches and pedagogy used in HEIs are changing from the traditional Oxbridge model of master – learner or teacher centered approach to a learner centered approach of teaching where the learner controls his or her learning (Reinhart, 2008). Learning environments of HEIs in developed countries are often supported by ICTs and continue to evolve to include more active learning through student participation. The relationship between the use of ICT and student's performance in higher education is not clear. The literature shows very little proof of this and earlier economic research has failed to provide a clear consensus concerning the effect on students' achievement. The aim of this paper is to summarize the main findings of this literature and second, we give theoretical explanations on the direct effect of ICTs in higher education. Our first explanation is that most of the literature has focused on direct effects of ICT while it's more appropriate to look at the indirect effect through the traditional channels. The focus here will be on the quality of the teaching staff and their adaptability to ICTs in higher education institutions. ICTs offer flexibility, they engage and motivate learners and therefore encourage a learner centered approach to teaching. The use of ICTs has evolved from the simple e-learning systems of the 1960s to the more collaborative WEB 2.0 technologies where students are not just passive learners but also generators of knowledge.

Malaysia is proud to be the choice of study destination that offers quality international education at affordable cost. Besides the affordable education cost, many of them choose to study in Malaysia because they recognize Malaysia as an ideal gateway to develop their Asian network and relationship as well as to learn from Malaysia's great diversity, rapid economic development and people living in peace and harmony. Education is the driving force of economic and social developments in any country (Cholin, 2005; Mehta and Kalra, 2006). Considering this, it is necessary to find ways to make education of good quality, accessible and affordable to all, using the latest technology available.

Last decade many developing countries had been focusing in using ICT as a tool to develop the society. When we look at experiences gained in a learned perspective, we will find that ICT is more than a tool, but a foundation which can be used to build futures. Especially in the area of education, ICT has helped the world to progress much by connecting schools, introducing online education, setting up distance vocational training facilities, and introducing of ICT into main stream curriculum. Where will we go from here in innovating

education? It's clear that tomorrow's world will test youth for 21st century readiness. Every nation will continue to compete in a global economy that demands innovation.

ICT has a central role in maintaining the quality of higher education in Malaysia and it will be a basis for competitive advantage of the universities. In Malaysia, the ICT agenda was initially driven by technological and scientific forces and innovations as well as the supply and demand and marketing forces and entrepreneurship (Bajunid, 2002). Currently, there are 20 public universities, 37 private universities and university colleges and approximately 460 private colleges (Ministry of Higher Education, 2010). There have been a number of factors impeding the wholesale uptake of ICT in education across all sectors. These have included such factors as a lack of funding to support the purchase of the technology, a lack of training among established teaching practitioners, a lack of motivation and need among teachers to adopt ICT as teaching tools (Starr, 2001). But in recent times, factors have emerged which have strengthened and encouraged moves to adopt ICTs into classroom and learning settings. These have included a growing need to explore efficiencies in terms of program delivery, the opportunities for flexible delivery provided by ICTs (Oliver & Short, 1997); the capacity of technology to provide support for customized educational programs to meet the needs of individual learners (Kennedy & McNaught, 1997) and the growing use of the Internet and WWW as tools for information access and communication (Oliver & Towers, 1999).

2.0 THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION

ICTs can transform the traditional authoritative learning into more transparent learning, with the teacher becoming a facilitator rather than the expert. Through ICTs, learning can become more active rather than passive, more conversational as opposed to publication. Information technology will transform learning from traditional formal schooling to lifelong learning. The concept of a library continues to evolve such that it is no longer a physical reading room but an online virtual location where learners can access different databases in different formats (multimedia). As Pelgrum and Law (2003) claim the issue of "computers in education" started to become popular in educational policy-making in the early 1980s, when relatively cheap microcomputers became available for the consumer market. They also note that with regard to the early introduction of microcomputers in education in 1980s, there were high expectations that it would make education more effective and motivating. Hepp, Hinostrza, Laval and Rehbein (2004) claim in their paper "Technology in Schools: Education, ICT and the Knowledge Society" that ICTs have been utilized in education ever since their inception, but they have not always been massively present. Although at that time computers have not been fully integrated in the learning of traditional subject matter, the commonly accepted rhetoric that education systems would need to prepare citizens for lifelong learning in an information society boosted interest in ICTs (Pelgrum, W.J., Law, N., 2003).

Moreover, Kozma and Anderson (2002) wrote in their paper "ICT and Educational Reform in Developed and Developing Countries" that education is at the core of the knowledge economy and learning society and that correspondingly, the role of ICTs in schools is shifting dramatically. In a similar vein, Kozma and Wagner (2003) contend that the promise of information and communications technologies to enhance the basic education is a tremendously challenging area of development work today, in both poor and wealthy nations (Wagner, D., Kozma, R., 2003).

Rapid advances in ICT and easy access to the Internet and the Web are reshaping our education by providing new learning environments and new ways of learning. The characteristics of online learning are: interactive, collaborative, constructivist in approach and learner-centered. In many studies, researchers (e.g., Teo, 2009; Derek, and Dahlman, 2006; Ng et al., 2006; Atkins, 2005; Van der Wende, 2002; Chung, 2001) claim that since ICT use has made world economies more competitive and interdependent, knowledge creation and its use have become focal points for long-term development strategies. They also suggest that since ICT improves the standard of living, modernizes societies, promotes equity in education, enhances the quality of teaching and learning, and, with other technologies, is a force for change, a more diversified and flexible type of higher education system in which research, teaching, and social engagement remain rich, relevant, and accessible is needed in countries transitioning from post-industrial to knowledge economies.

Proper use of the Internet encourages critical thinking thus cultivates deep learning where learners learn independently. McMclintock (1997) says that HEIs would benefit more from ICTs if they aligned their curriculum with the ICT tools being used. He concludes that ICTs will soon become mutually exclusive in the labs, such that the classroom, library and the computer labs will no longer be separate learning places. Carnoy (2005) studied the cognitive impact of ICTs on the intellectual content and competence of students. His findings showed that Internet usually has a positive measurable impact on learners' intellectual content (what learners think). However, on the contrary there was no compelling evidence on the cognitive

impact of ICTs on the intellectual competence (how learners think). It means that although ICTs might not directly improve the thinking process of the student, it improves his ability to learn by gathering and analyzing content. He recommended that since lecturers appear to resist the change from the traditional lecture method to learner centered, then HEIs should retain the status quo and blend ICTs with the current approach rather than radically transform it. Due to ICTs importance in society and possibly in the future of education, identifying the possible obstacles to the integration of these technologies in schools would be an important step in improving the quality of teaching and learning.

3.0 THE CHALLENGES FACED BY HEIS IN USING ICTS FOR TEACHING

Integrating technology in schools is not an easy task. There is a reciprocal relationship among technology and educational reform. On one hand, technology enables the reform of an educational system and curriculum but on the other hand, an educational system can support and facilitate the integration of technology in educational practice. However, in order to enable the successful implementation of ICT in teaching and learning the educational system needs to be reformed according to the new educational requirements.

Teaching Staff's Lack of Confidence

Several researchers indicate that one of the main barriers that prevents teaching staff from using ICT in their classroom is basically lack of confidence. Dawes (2001) sees this as a contextual factor which can act as a barrier. A study conducted at Quest International University Perak recently indicated that teaching staff's lack of confidence was the pivotal reason for not using the aid of ICTs in classroom. Balanskat et al. (2006) found that limitations in teaching staffs' ICT knowledge makes them feel anxious about using ICT in the classroom and thus not confident to use it in their teaching. Similarly, Becta (2004) concluded their study with the statement: "many teaching staff who does not consider they to be well skilled in using ICT feel anxious about using it in front of a class of children who perhaps know more than they do". In Becta's survey (2004), many of the teaching staff responded citing lack of confidence as a barrier reported being particularly afraid of entering the classroom with limited knowledge in the area of ICT with their students knowing that this was the case. It was argued that lack of confidence and experiences with technology influence teaching staff's motivation to use ICT in the classroom (Cox, Preston and Cox, 1999).

Inadequate Resources

Even if the above problems are overcome there is often a difficulty for teachers who have had some training to be able to use ICT because there are insufficient ICT resources in the school or there is not enough time to review them and plan lessons incorporating their use. In spite of the problems listed above and many others, some positive things have been learnt from previous experiences of different initiatives and training programmes. Where schools have had the backing of the head teacher and there is a long term policy for the school to integrate ICT into the teaching then they have been successful in gradually developing the use of ICT in different areas. Projects in which individual teachers have been given portable computers to develop their own personal ICT skills have shown that teachers then start to use them in their teaching as well (NCET, 1994). Teachers who have gone on longer courses, spread over a year have had the time to practice in between sessions back in schools and have had the time to assimilate enough expertise and knowledge to be able to continue to use them within their curriculum. (Cox, Rhodes & Hall, 1988). More recently, studies of teachers who belong to an Internet network of supporting teachers, such as the MirandaNet, have shown that the support enables them to use them in their teaching even if few other teachers in the school are doing so (Preston, 1999).

Resistance to Change and Negative Attitudes

Much research into the barriers to integrate ICT onto education found that teacher's attitudes and an inherent resistance to change was a significant barrier. Survey conducted at QIUP highlighted the fact that several senior teaching staff was not prepared to change concerning the use of new strategies and have imposed an obstacle to ICT integration in science and arts teaching. If they were to excel further into the technology, the "mindset" of these particular kinds of teaching staff needs serious remodelling to keep abreast with the ICT era. Watson, an Australian researcher (1999) argued that integrating the new technologies into educational settings requires change and different teaching staff will handle this change differently. According to him, considering different teaching staff's attitude to change is important because teachers' belief influence what they do in classrooms. Becta (2004) claims that one key area of teaching staff's attitude towards the use of technologies is their understanding of how these technologies will benefit their teaching and their students' learning. Educational systems tend to resist change but if schools and teachers are not able to accept and adapt to change, then they will not be able to integrate ICT in teaching and learning.

Lack of Time

Several studies indicate that many teaching staff has competence and confidence in using computers in the classroom, but they still make little use of technologies because they do not have enough time. A significant number of researchers identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teaching staff using ICT in their teaching. Johnston and McCormack (1996) reported that educators commented scarcity of time available to commit to the time-consuming nature of developing technology-based material. Butler and Sellborn (2002) stated their finding was the time it takes to learn to use new technologies was the second biggest concern of faculty. Dawes (2001) stressed the importance of good time management because the Internet can seemingly absorb infinities of time for communication purpose.

4.0 THE IMPACT OF ICT ON LEARNING AND TEACHING

There is little evidence from various researches that ICT integration in HEIs can help students to learn and teaching staffs to teach more effectively. Nonetheless, there is not a simple message in such evidence that ICT will make a difference simply by being used. Many research concluded from findings suggest that although ICT can improve learning there are a number of issues that need to be considered if such technology is going to make a big difference. At this broad level of thinking, some vigilance is therefore called at this level and how integration of ICT might have an impact. There are two main issues. First, is the modest effect of ICT compared with other researched interventions; second is the almost negligible effect of the provision and use of ICT at a general level.

In the case of integrating ICTs in Vocational Educational and Training, a similar distribution is observed by Ramboll Management (2005) whereby countries such as Austria, Finland, Sweden, Denmark and the UK can be considered frontrunners. These are followed by a middle group composed of the majority of EU countries, and a beginners' group which includes Portugal and Greece, and most of the new member states. Such a geographical spread may not come as a surprise, as similar rough trends are observable in terms of computer and Internet usage throughout Europe. These usage trends are highest in the Nordic countries and lowest in the new Member States and the Southern European countries (Eurostat 2005).

A study by the British Educational Technology Association (BECTA, 2000) found no link between levels of resources for ICT and either reading or mathematics grades at Key Stage 1 in 1999. A Key Stage 2 there was a significant but very weak, association between ICT resources and pupil attainment. This indicated that ICT curriculum resourcing was at least 99.5% independent of pupil performance at Key Stage 2. In the USA, information about computer use from a longitudinal study was analyzed (Weaver, 2000). This study also found a very small link between computer use in the curriculum in school and improvement in pupils' test scores, though again the link was very weak which again indicates that at this general level computer use make very little difference to pupils' achievement. Simply having more computers does not make much difference.

Earlier research at European level confirms the OECD observation that the application of ICTs at tertiary level mostly takes the form of 'web-supplemented courses'. A study commissioned by DG Education and Culture, carried out in 2002-2003 and based on a survey of more than 200 European universities, assessed the pace of integration of ICT in universities.³ It concluded that the general extent of integration of ICT in teaching has risen greatly since 2000, with three out of four universities in the EU experiencing high or very high rates of increase and only 3% low or very low increases. The study showed that the basis for ICT use is in place and that almost everyone at university has access to computers, the Internet and e-mail accounts. Moreover, nine out of ten universities have intranets providing information.

ICT generally has a positive impact on learning but the expectations that ICT could in some ways revolutionize processes at school have not (yet) been realized. This goes beyond the use of computers by teachers since not only PCs and the Internet but also digital cameras, mobile phones and other technologies can help to change teaching processes. But clearly, **ICT has not revolutionized teaching methods so far**. The use of ICT is mostly focused on supporting the subject content. ICT-based activities by pupils are far more to do with consuming than producing. These work individually more often than together. However, the impact of integrating ICT in teaching can be measured in pupil engagement, differentiation, creativity and by the fact that less time is wasted, though the impact of ICT is very dependent on how it is used. As with many other knowledge-based activities in modern societies, the use of ICT organizationally has not yet fully matured. The preconditions for using ICT for knowledge sharing, communication and home-school cooperation are almost in place, though the positive impact as yet is only moderate. Many HEIs, teachers, pupils and parents use the ICT infrastructure for informational and collaborative purposes. The tools are mostly used for communication among teachers, while the use of ICT to support dialogue between teachers and pupils and to improve HEIs co operation is more limited.

5.0 CONCLUSION

The integration of technology in education has been the focus for many educational systems. Teachers' beliefs, school culture, old curricula and traditional teaching approaches are some of the hurdles that constrain the effective use of ICT in education. History has shown that supporting schools with technological equipment is clearly not enough. It is necessary to take a broad view in order to understand and determine how ICT impacts on learning. This is because educational achievements are shaped not only by the way education is organized but also by the socio-economic background of the learners, their socio-cultural environments, the changing skills and competences that are necessary for employment, education and training, self-development and participation in society. This clarifies partly why non-formal learning, informal learning and adult learning are increasingly seen as crucial for the future of learning. There is evidence that educational achievements are positively influenced by ICT, but not only by ICT used at school. Indeed, it seems that experience with ICT at home, in particular the computer, is a more important factor for school achievement in certain cases than the use of computers at school. However, it is still the case that access and use of computers at home is shaped by socio-economic differences. Thus the socio-economic background of students continues to be important for their educational achievements. No one component in itself is sufficient to produce good teaching. However, the presence of all components increases the likelihood of excellent integration of ICT in learning and teaching opportunities.

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