PRE-SERVICE TEACHERS' TRAINING IN INFORMATION COMMUNICATION AND TECHNOLOGY FOR THE ESL CLASSROOMS IN MALAYSIA

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ABSTRACT

Today there is sufficient evidence that Information and Communication Technologies (ICT henceforth) has a significant influence on the teaching and learning process that takes places in the classroom. Therefore, this study sought to investigate the ESL pre-service teachers' attitudes, competency and preparation in integrating ICT in their teaching and learning activities. The study employed a quantitative survey method and involved a total of 70 pre-service Teaching English as Second Language (TESL) teachers in the Faculty of Education from a public university in Malaysia. These pre-service teachers, who had undergone 12 weeks of practicum teaching in secondary schools, were given a set of questionnaire and the data gathered from the questionnaires were statistically analyzed.

The results indicated that the pre-service teachers do possess positive attitudes, moderate level of competency and are adequately prepared in integrating ICT in the classroom. The study also highlighted that the lack of facilities and technical malfunction in schools as the biggest obstacle for the pre-service teachers in their efforts to integrate ICT in the classroom. These result suggested that teachers must be well prepared for ICT use in the classroom. Therefore continuous training and ICT courses should be seen as solution in assisting teachers strengthen their ICT skills and in encouraging them to keep up to date with newer technologies.

Keywords: ICT, training, attitudes, competency, preparation.

INTRODUCTION

The past 30 years has witnessed a rapid development in the use of ICT in education. The use of ICT is deemed crucial to help teachers and students in coping with new challenges that await them in the future. With the help of virtual teaching communities and the ever-expanding resources available through technology, students will be better served compared to before (Duffy, McDonald & Mizell, 2003). According to Duffy et. al (2003), the same technology that supports worldwide students' interaction in their classroom will support professional interaction among educators. Hence, Baylor & Ritchie (2002) in their study reported that ICT integration in the classroom has positive effects in students' achievement in secondary and college education compared to traditional classroom learning.

ICT in the classroom is widely believed to be able to help teachers in introducing a more constructive classroom environment. Most researchers are also in the opinion that ICT has an influential effect on the teaching and learning process that takes place in the classroom (Muir-Herzig, 2004). Piaget, as cited in (Brown, 2001), in his constructivism approach stated that learning occurs when the learner controls his or her own acquisition of knowledge.

Therefore, the usage of ICT which is laden with interactive elements and interesting applications that acts as learning tool is seen to have the ability to incite students' interest while simultaneously encouraging them to get more involved in their learning process. Inevitably, this will require teachers to be more ICT savvy in order for them to be able to effectively and meaningfully integrate ICT in the classroom.

LITERATURE REVIEW

ICT in the Malaysian Education System

Malaysia is now moving forward towards producing an ICT literate generation in its effort to develop the nation's human capital as aspired in the Education Development Master Plan 2006-2010 (Curriculum Development Centre (CDC), 2008). With this in mind, several steps and approaches have been taken to equip students with the ability to use ICT skillfully and effectively. This would entail equipping pupils with the skills to think creatively, act rationally and practice lifelong learning skills. In view of this, the Ministry of Education (MOE henceforth) has introduced a program called Information and Communication Technology Literacy (ICTL) for Primary and Secondary Schools throughout the country. The program is implemented in stages beginning from 2005 and to be completed by 2010. The program consists of new approaches which encourage students to conceptualize logic and reasoning in line with the use of technology and communication (CDC, 2008).

Another initiative by the government in demonstrating the significance of ICT in the Malaysian education system is the Smart School Project which was founded by the MOE in collaboration with the Multimedia Development Corporation (MDeC). The initial aim of the Smart School Project was to prepare the future generation for the information age through an innovative education delivery process while enhancing ICT utilization in schools (Multimedia Development Corporation (MDeC), 2007). Through the innovation of ICT, the Smart School is intended to revolutionize the conventional practice of teaching and learning which is generally teacher centric with learners as passive listeners towards a more active classroom environment where teachers take on the responsibility as a facilitator to students' learning than the sole knowledge disseminator. Therefore, in order for this to be successfully achieved, teachers in Malaysia are required to be fully equipped and prepared to teach using ICT especially if they are teaching Smart Schools nationwide.

A representative from the Educational Technology Division in the MOE referred to ICT as tools that enhance learning experience making it more fun, interesting, meaningful, and stimulating for children (Salbiah, 2009). It is designed to cater to the students' different needs and abilities resulting in a better realization of their potential and capabilities. At the same time, it also promotes autonomy to children where they can manage their own learning using ICT.

Apart from the Smart School Project, the Ministry has also made ICT a subject offered to upper secondary students in schools. Also known as 'Computer Literacy', this subject is aimed at preparing students with the fundamental skills of using the computer.

With this in mind, ICT in education shouldn't be seen as just another subject, but also as an exposure and a stepping stone for further exploration as the students encounter more hi-tech technological applications as an adult.

The importance of ICT in education is further highlighted by the Ministry of Education through the three main policies that scaffolds its implementation in the curriculum. The first policy emphasizes on ICT for all students where it is seen as a medium to bridge the digital gap between schools. Emphasis on ICT as a teaching and learning tool for accessing information, communication and productivity is highlighted in the second policy whilst the third policy stresses on the use of ICT for enhancing productivity, efficiency and effectiveness of the school's management system (Chan, 2002). With these policies as a guideline, the government hopes to revolutionalize the education system and improve learning resulting to a more knowledgeable and technologically savvy society.

Evidently, ICT is making its headway in schools and is seen as a vital step for the Malaysian education system. The school is viewed as the best place to train and prepare students towards becoming a technologically competent society parallel with global demands. The ICTL and Smart School efforts clearly indicate that the government is serious in transforming the education system from the traditional, rigid and teacher dependent methods to a more contemporary, interactive and autonomous learning approach. Therefore, this instigates a crucial need to produce competent teachers who will be the active agents in executing and realizing the government's aspirations towards the development of a knowledge society in the near future.

ICT Training for Pre-Service Teachers in Malaysia

The importance of computers in education has been substantially addressed by academics and policy-makers worldwide. It has also been acknowledged that if young people were to become equipped to compete in the global information society, education has to be transformed and the inclusion of ICT in the teaching and learning process should be included (Galanouli, Murphy & Gardner, 2004). Nonetheless, as highlighted by a variety of research, not all teachers were willing or inclined to introduce ICT into their classroom (Baylor & Ritchie, 2002). Additionally, research has also shown that, for the younger generation of teachers, the basis of this unwillingness is sometimes found in the lack of training provided with regards to the use of ICT in teaching and learning (Galanouli et al., 2004).

An investigation into the teaching-learning practices and teacher-students readiness in the implementation of Smart School in Malaysia indicated that both teacher and students should be ready to use ICT in the classroom and suggested that teachers needed to be continuously trained in the use of technology for the purpose of teaching and learning (Azizah, Nor Fariza, and Hazita, 2005).

However, another study on the reality of Malaysian ESL teachers' usage of ICT in their classrooms found that ICT was not widely used in teaching ESL due to teachers' incompetence in integrating ICT during teaching (Melor, 2007). In Melor (2007)'s survey, a high percentage of teachers reported lack of training opportunities and time to gain computer skills as among the main challenges in using ICT in their teaching activities.

This suggested that teachers were inadequately prepared to integrate ICT into their teaching practices. If teachers have the competency and confidence in using ICT devices, they will be more inclined to possess positive attitudes towards technology which may greatly influence their teaching and learning process.

On the other hand, teachers who are incompetent or reluctant to integrate ICT in their classrooms will prove to be a disadvantage to the students' learning experience. The most ideal solution to this problem is to address the needs and attitudes of teachers with regards to the integration of ICT in the classroom.

Nevertheless, this attempt would require an extended amount of time and funds to be completed. Therefore, it would be more feasible to investigate the perception of pre-service teachers and gauge their attitudes, competency and preparation towards the integration of ICT in the classroom as they embark on their careers as educators.

Based on an analysis on technology investment and its effectiveness, the U.S educational policy indicated that the integration of ICT education through pre-service teacher training is the most direct and cost-effective method in equipping future teachers with technological skills (U.S. Congress, 1995). Exposure and opportunities to practice and experience hands-on integration of ICT during teacher training program will build up the confidence of pre-service teachers and motivate them to apply the gained knowledge on ICT as full-fledge teachers (Choy, Wong, & Gao, 2008).

Nevertheless, short-term exposure is seen as insufficient to provide the necessary scaffolding to effectively integrate technology in the classroom (Moursand & Bielefeldt, 1999). The current practice in teacher training colleges or universities is that all trainee teachers are required to take a minimum of one course either in ICT or Computer Education (Ab. Rahim & Shamsiah, 2008). Further emphasis on computer literacy is shouldered upon teacher trainees trained in the universities where it is compulsory for them to enroll in two computer related courses namely Computer in Education and Computer Aided Language Learning. Nevertheless, questions on how competent are these teachers in implementing ICT in their teaching approaches and integrating technology in their classroom still lingers. Hence, it is the aim of this study to investigate the pre-service teachers' attitudes, competency and perceived ability towards integrating ICT in their teaching practices.

RESEARCH OBJECTIVES

The study attempts to achieve the below mentioned objectives:

- ➢ To investigate pre-service teacher's attitudes in integrating ICT to enhance learning.
- ➢ To identify the competency level of the pre-service teachers in using ICT in their teaching.
- ➢ To identify the effectiveness of the training received by the pre-service teachers in ICT courses as an indicator of their preparation towards integrating ICT in their teaching.

METHODOLOGY

A survey method would be most appropriate in achieving the objectives of the study intended by the researchers. This method allows the researchers to learn about the selected samples through the application of cross-sectional designs to describe attitudes, opinions, behaviors or characteristic of the population (Creswell, 2005). This design has the advantage of measuring current attitudes or practices. This study used a non-probability sampling technique where individuals representing the characteristic the researchers seek to study based on convenience and availability (Creswell, 2005).

Hence, a total of 70 pre-service Teaching English as Second Language (TESL henceforth) teachers in the Faculty of Education from a public university in Malaysia were selected for the study.

They were final year students with two different minors; literature and counseling. They had undergone 12 weeks of practicum teaching in secondary schools within the Klang Valley in their previous semester.

Prior to this survey, the pre-service teachers have attended two basic computing courses (Computer in Education and Computer Assisted Language Learning and Teaching) in which they have learned Word, Excel, PowerPoint, Internet and courseware building applications. The purpose of the two courses was mainly to improve the pre-service teachers' computer skills and proficiency level as for them to become more competent in utilizing these tools in their English language teaching. The study was conducted during their final semester at the faculty.

Each pre-service teacher received a set of questionnaire and was requested to complete it. This took approximately 10 to 15 minutes. The respondents were required to provide answers to statements given in the questionnaire based on a 4 point Likert scale with 1 being strongly disagree and 4 being strongly agree.

The questions were derived from instruments from previous studies (Galanouli et. al., 2004; Norizan & Amin, 2004; and Torres, 2006) that had been conducted in fields similar to this study. Personal data were analyzed to develop a demographic profile of the respondents while data representing general trends were analyzed descriptively by calculating the mean and standard deviation for each item in the questionnaire.

FINDINGS AND DISCUSSIONS

Demographic Profile of the Respondents

The study achieved a 97.1% response rate as 68 out of the total sample of 70 pre-service TESL teachers in the Faculty of Education from a public university in Malaysia responded to the study. Out of the 68 respondents, 78% of them are females (53) while the other 22% are males (15).

All of them were final year students who had at least 12 weeks of teaching experience in secondary school. The data indicated that most of the respondents were 23 years old (61.4%) followed by 25 years old (11.4%) and 22 years old (8.6%). The other age groups varied from 24 (5.7%), 26 (3%), 27 (2%) and 21 (1%) years old. As a whole, most of the respondents were still in their early 20's. When asked whether they owned a computer, all of them answered 'Yes' (100%).

The next item asked was the total hours spent on the computer for academic purposes on a daily basis and to that 32.9% of the respondents stated that they spent about 2 to 3 hours per day on ICT for academic purposes while 21.4% stated that they spent approximately 6 hours or more. However, 15.7% said that they spent roughly less than 1 hour on ICT for academic purposes.

Pre-Service Teachers' Attitudes in Integrating ICT to Enhance Learning

The results of pre-service teacher's attitudes in integrating ICT were divided into two parts as suggested by [8]. Attitudes of the pre-service teachers will be best explained by identifying their confidence in using computers and how they perceived the importance of ICT in their teaching.

The results suggested that most of the pre-service teachers felt that trying new things with computers were tolerable (mean=3.46, SD=.59). The respondents also stated that they are willing to use computers in many ways (mean=3.43, SD=.72). They stated that they felt confident working with computers (mean=3.40, SD=.65), they are generally good with computers (mean=3.21, SD=.64) and they are able to do advanced computer work (mean=3.09, SD=.78).

However, the respondents revealed that figuring out problems related to computers does not appeal to most of them (mean=2.54, SD=.97). Apart from that, the respondents are not intimidated or threatened by the topics related to computers (mean=1.94, SD=.80) and they also indicated their disagreement with the statement that they were unsure with what to do with computers (mean=1.68, SD=.73). They also stated that they are unlikely to avoid using computers in their daily life (mean=1.42, SD=.70).

The results further highlighted that the pre-service teachers felt it was very important for teachers to be able to use computer in teaching (mean=3.81, SD=.47) and that they also wanted to know more about computers (mean=3.66, SD=.64). The respondents also agreed that learning about computers is worthwhile for teachers (mean=3.69, SD=.63) and denied the suggestion that computers do not improve their teaching skills (mean=1.47, SD=.74) nor do they did not enjoy working with computers (mean=1.43, SD=.66). The findings indicated that pre-service teachers were well aware of the importance of ICT in education especially in promoting student-centered learning (Hafizoah & Zuraina, 2007) and improving students' learning of the English language (Smeets, 2005) as stated in previous findings. The findings also supported the earlier findings that pre-service teachers have positive attitudes towards the integration of ICT in the ESL classroom (Ramanair & Sagat, 2007; Abdullah et. al., 2003; and Juanna, Wong & Samsilah, 2005).

Pre-Service Teachers' Competency

In order to identify pre-service teachers' competency in ICT, a framework of IT Competency for English Language Teachers was used as suggested by Norizan and Amin (2004).

Most of them claimed that they know how to use basic applications in online communication (email, chatting, social network website etc.) with the mean of 3.56 and SD of .63 and they also know how to operate a computer (mean=3.45, SD=.72). Overall, all the respondents claimed that they have acquired a good command of ICT operational skills. Pre-service teachers admitted that they are able to use application software (mean=3.51, SD=.59), install computer programs (mean=3.44, SD=.63) and run operating systems (mean=3.27, SD=.81).

The results also showed that they know how to use the internet browser and search engine (mean=3.65, SD=.57), online communication (mean=3.63, SD=.60) and capable of downloading materials from the internet (mean=3.62, SD=.57). The results also indicating pre-service teachers have the ability to utilize web-based materials (mean=3.01, SD=.72) and guide students to communicate online (mean=3.04, SD=.68). The future teachers also agreed that they are able to participate in ESL forums and discussion groups (mean=3.01, SD=.71) and conduct consultations and teach online (mean=2.97, SD=.73).

Furthermore, the findings indicated that respondents also know how to evaluate the effectiveness of computers in schools (mean=3.25, SD=.70) and the appropriateness of the software to be used in teaching (mean=3.15, SD=.65).

However, they are more inclined to disagree that they are able to use the computer to monitor students' use of computers (mean=2.60, SD=.76). As a whole, most of the pre-service ESL teachers perceived themselves at the intermediate competency level when it comes to their ability in using ICT effectively. These findings imply that the pre-service ESL teachers view themselves as about ready to use and apply ICT in language teaching which supports the findings by Juanna et. al. (2005).

The findings also indicated that the training received by the pre-service teachers have helped them master certain important skills such as the courses contents, modeling of technology used, and the skills for the integration of ICT as identified by Torres (2006). However, they revealed that they did not use computers in their teaching frequently (mean=2.63, SD=.85).

Therefore, there is an urgent need to address these skills as this group of pre-service teachers will directly affect the effectiveness of the transition from the conventional school system to the Smart School concept.

On the whole, these findings contradicts the findings of studies done by Norizan & Amin (2004) and Smeets (2005) which discovered that the teachers are far from ready to use ICT in their language teaching. According to Norizan & Amin (2004), an ESL teacher should be better equipped to have the capability to perform these basic tasks as identified in this study in order to be able to be an ICT competent teacher in ESL.

Pre-Service Teachers' Preparation

The data analysis showed that courses related to ICT offered during their undergraduate's program are sufficient (mean=3.21, SD=.91) in providing relevant knowledge and information with regards to the implementation and integration of ICT in the classroom.

The pre-service teachers disagree that the course did not prepare them to utilize ICT effectively (mean=1.75, SD=.74) and the content of the courses taken is irrelevant and out of date (mean=1.71, SD=.73). Further data analysis indicated that pre-service teachers do model the use of ICT in the classroom (mean=3.32, SD=.61). This is supported through the findings that most trainees felt that they gained more confidence to integrate ICT into teaching (mean=3.51, SD=.61) and their agreement that they know how to integrate ICT in teaching better (mean=3.41, SD=.70) after completing the courses.

Additionally, a mean of 2.40 also indicated that most of the pre-service teachers did not feel comfortable teaching the traditional way. However, the pre-service teachers claimed that there was lack of support from the administrators when the pre-service teachers indicated their preference in integrating ICT in their classroom during their practical training (mean=3.16, SD=.87). Additionally, the respondents also felt that more computer courses should be added to the existing one (mean=3.54, SD=.61). However, the trainee teachers disagreed with the item saying that it is the faculty's responsible to prepare them with ICT skills (mean=2.84, SD= .96) and they were reluctantly to agree that their exposure in ICT is enough (mean=2.54, SD=.84). According to the responses, the courses provided ample hands-on opportunity for them (mean=3.28, SD=.75) and the opportunity for them to practice their knowledge of ICT in their teaching is just about right (mean=3.04, SD=.82).

According to Pelgrum (2001), teachers who are not well-trained or well- prepared can decrease the effectiveness of ICT usage in the classroom.

Therefore, Nicholson and Sanber (2007) emphasized that teacher education programmes should incorporate training on using ICT effectively in order to prepare teachers in integrating technology in their teaching and students' learning. For that reason, it is essential for the course content to be kept abreast, relevant and significant with the current technology trends to ensure that the pre-service teachers are well-prepared and confident when using ICT in their teaching practices.

At the same time, the pre-service teachers also disagreed with the statement that the courses focused more on theoretical rather than practical application of ICT which meant the courses offered did focus considerably on practical integration than merely theories.

This is in line with the suggestion by Angeli (2005) where student teachers needed to be given sufficient opportunities during their training to develop their pedagogical reasoning and be more competent in infusing technology in their teaching. Furthermore, as highlighted by Moursand and Bielefeldt (1999) and Bain and McNaught (2005), ICT should be integrated into other teacher training courses in order to provide the pre-service teachers with ample opportunities needed to put their acquired knowledge and skills into practice. Treating ICT as a standalone subject, although may help in developing basic ICT skills, may also inhibit its application and transfer of skills in an actual classroom context. Nevertheless, constant reinforcement and practice increases the ability for the pre-service teachers to apply their ICT related knowledge and understanding in a variety of educational contexts (Stuhlmann & Taylor, 1998) as cited in Choy et. al (2008).

RECOMMENDATIONS AND CONCLUSION

Schools all over the country are in urgent need of teachers who are capable and comfortable with advanced technologies to meet the learning needs of the students. The findings from this study suggested that more ICT related training or courses should be conducted for pre-service and also in-service teachers.

Based on the findings, the researchers in this study feel that more in-depth studies need to be conducted. Future studies perhaps need to look into the various approaches which may help prepare this new breed of educators. In addition to that, more research should also be carried out among the pre-service teachers in other teaching institutions across the country to identify their attitudes and competency in dealing with ICT. Besides that, more internal action research should also be conducted by school administrators to investigate the root cause of the setbacks in teaching using ICT as claimed by most teachers.

Through the challenges identified from such studies, the government will be adequately informed to further enhance ICT facilities in schools and provide relevant training to suit the needs of the teachers. Support from stakeholders especially the school's administration and the ministry are also seen as crucial in improving the current scenario.

This is based on the suggestion by a number of pre-service teachers who feel that a revised curriculum focusing on ICT literacy should be included to enhance the students' learning experience.

Correspondingly, serious thought should also be given to training skilled technical support so that the ICT equipments are regularly maintained for enhanced teaching and learning.

Previous studies (Choy et. Al., 2008); Moursand & Bielefeldt (1999); and Nicholson and Sanber (2007) have also highlighted the importance of modeling technology use in the teaching and learning at all levels which includes teacher training institutions.

 In order to motivate pre-service teachers towards the integration of ICT in their teaching, it is crucial that the use of technology is modeled first by teacher educators in teaching training institutions. Nicholson and Sanber (2007) pointed out that previous literature has shown ICT skills development programs doesn't ensure transfer and application in the classroom. Nevertheless, since modeling is recognized "as a power source of skills transfer" (Nicholson and Sanber, 2007), the concept of apprenticeship through modeling can help reduce the trainee teachers' anxiety level when dealing with technology while at the same time increasing their confidence in the utilization of ICT in teaching and learning.

Consequently, it is hoped that when the trainee teachers graduate and embark on their teaching professions, they will be inclined to imitate their previous lecturers and model the use of ICT in their classroom. Therefore it is highly recommended that teacher trainers too should be competent in the use of technology for them to be able to model its usage in teaching and learning to their teacher trainees.

On a final note, the researchers would also like to suggest future research on ICT integration in pre-service teacher training in Malaysia to consider looking into the approached of ICT integration in pre-service teacher training such as the one suggested by Steketee (2005) and Nicholson and Sanber (2007). It will be interesting to either compare these approaches and the existing module available in teacher training institutions in Malaysia or to see how far such approaches can be integrated into the Malaysian pre-service teacher training and to what extent does it help in improving and enhancing the pre-service teachers' ICT skills.

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