



**UNIVERSITI PUTRA MALAYSIA**

***PREDICTORS OF INFORMATION COMMUNICATION TECHNOLOGY  
INTEGRATION IN ESL TEACHING AMONG ENGLISH LANGUAGE  
LECTURERS IN MALAYSIAN TEACHER TRAINING INSTITUTIONS***

**SUTHAGAR NARASUMAN**

**FPP 2014 25**



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**DOCTOR OF PHILOSOPHY  
UNIVERSITY PUTRA MALAYSIA**

**2014**



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**By**

**SUTHAGAR NARASUMAN**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra  
Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of  
Philosophy**

**August 2014**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

**PREDICTORS OF INFORMATION COMMUNICATION  
TECHNOLOGY INTEGRATION IN ESL TEACHING AMONG  
ENGLISH LANGUAGE LECTURERS IN MALAYSIAN TEACHER  
TRAINING INSTITUTIONS**

By

**SUTHAGAR NARASUMAN**

**August 2014**

**Chair: Nooreen Noordin, PhD**  
**Faculty: Educational Studies**

The study is primarily an empirical effort to identify the predictors that determine ICT Integration in teaching English as a second language among faculty members in Malaysian Teacher Training Institutions. The study also examines the English Language lecturers' current level of ICT integration in TESL teacher training and the varying predictive effect of demographic factors such as age, teaching experience, gender and level of education on ICT integration. The study further examines the significance of the English Language lecturers' technology proficiency, attitude towards ICT, participation in professional development programmes and ICT infrastructure access and support services in predicting ICT Integration. Finally the study also sought to determine the extent to which the observed variability in ICT integration could be predicted by these factors. The theoretical framework for the study is drawn from a review of the literature on factors that enhance and impede ICT integration. The sample comprises 267 respondents working at the English Language Unit of various teacher training institutions. Survey questionnaires and interviews were used to collect data which was analysed using descriptive statistics, Spearman's rank order correlation, multiple regression, and reliability analysis. The finding of the study indicate that there is a correlation of 0.241 (R Square) between the dependent variable (faculty ICT integration) and the select group of independent variables. The collective level of significant variance between the dependent variable and the independent variables in the regression model is valued ( $R^2$ ) at 24.1 percent. The findings of the stepwise regression analysis indicate that the independent variables, faculty ICT proficiency, faculty ICT attitude, faculty ICT professional development and faculty ICT access are significant ( $P < 0.01$ ) predictors that contribute (24.1 percent) towards faculty ICT integration. However, demographic factors such as age, gender and experience were insignificant predictors. Apart from these, the analysis of the quantitative data

and interview transcripts revealed the lack of time, equipment, software applications and context specific professional development programmes as barriers to ICT integration. Lecturers also seemed to lack the necessary skills to integrate content knowledge, pedagogical knowledge and technological knowledge into a seamless instructional technique. The findings imply that these lecturers have the basic skills and right attitude but need to be provided with proper and up-to-date facilities and context specific professional development programmes to further enhance their capacity to integrate ICT in their teaching.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**PERAMAL INTEGRASI TEKNOLOGI MAKLUMAT DAN  
KOMUNIKASI DALAM PENGAJARAN BAHASA INGGERIS  
SEBAGAI BAHASA KEDUA DI KALANGAN PENSYARAH  
BAHASA INGGERIS DI INSTITUT PERGURUAN MALAYSIA**

Oleh

**SUTHAGAR NARASUMAN**

**Ogos 2014**

**Pengerusi: Nooreen Noordin, PhD**  
**Fakulti: Pengajian Pendidikan**

Kajian ini adalah satu usaha empirikal untuk mengenal pasti tahap integrasi ICT dan factor-faktor yang menentukan Integrasi ICT dalam pengajaran Bahasa Inggeris sebagai bahasa kedua di kalangan pensyarah TESL di Institut Perguruan Malaysia (IPGM). Kajian ini juga menyiasat tahap integrasi ICT semasa di kalangan pensyarah tersebut dalam menjalankan latihan perguruan TESL. Kajian ini juga menyelidik kesan factor umur, jantina, tahap pendidikan dan pengalaman pengajar terhadap pengintegrasian ICT dalam pengajaran. Seterusnya kajian ini menyelidik keberkesanan factor-faktor seperti tahap kemahiran teknologi, sikap terhadap ICT, penglibatan dalam program pembangunan professional, perkhidmatan bantuan teknikal dan kemudahan ICT yang disediakan dalam meramal kebarangkalian pengintegrasian ICT dalam pengajaran. Kerangka teori bagi kajian ini dibina berdasarkan tinjauan literature berkenaan factor-faktor yang membantu serta yang menghindar mengintegrasian ICT. Sampel kajian terdiri daripada 267 pensyarah bidang TESL yang bertugas di Unit Bahasa Inggeris IPGM di seluruh negara. Kaji selidik dan temu bual digunakan sebagai intrumen untuk menggumpul data yang kemudiannya dianalisis menggunakan kaedah statistik deskriptif, korelasi Spearman dan regresi berganda. Keputusan kajian menunjukkan korelasi antara pembolehubah bersandar dan keseluruhan kumpulan pembolehubah bebas adalah 0.241 (R berganda). Kadar varians pada pembolehubah bersandar yang bersekutu secara signifikan dengan semua pembolehubah bebas dapat dijelaskan melalui kuasa yang menerangkan model regresi dengan nilai ( $R^2$ ) adalah 24.1 peratus. Analisis regresi berganda menunjukkan bahawa pembolehubah bebas kemahiran teknologi, sikap terhadap ICT, penglibatan dalam program pembangunan professional, perkhidmatan bantuan teknikal dan kemudahan ICT merupakan peramal yang mempunyai korelasi dan sumbangan (24.1 peratus) yang signifikan terhadap pengintegrasian ICT di kalangan pensyarah Bahasa



Inggeris sebagai Bahasa kedua. Walau bagaimanapun faktor demografi seperti umur, jantina dan pengalaman kerja adalah peramal yang tidak signifikan. Selain daripada itu, analisis data kuantitatif dan temubual juga telah mengenal pasti kekurangan masa, prasarana ICT, perisian ICT dan program pembangunan profesional sebagai halangan kepada integrasi ICT. Responden juga kekurangan kemahiran untuk mengabungkan pengetahuan teknologi, pengetahuan pedagogi dan pengetahuan kandungan matapelajaran dalam konteks pengajaran. Penemuan kajian menunjukkan bahawa pensyarah mempunyai kemahiran asas dan sikap yang betul tetapi perlu dibantu dengan keperluan kemudahan ICT yang terbaru dan latihan pembangunan profesional mengikut kesesuaian konteks pengajaran dan pembelajaran untuk meningkatkan lagi keupayaan mereka untuk mengintegrasikan ICT dalam pengajaran mereka.



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I certify that an Examination Committee has met on 15 August, 2014 to conduct the final examination of **Suthagar Narasuman** on his thesis entitled "**Predictors of Information Communication Technology Integration in ESL Teaching Among English Language Lecturers in Malaysian Teacher Training Institutions**" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

This chapter contains a discussion on ICT in Malaysia in general and ICT in Malaysian schools. It also introduces the statement of the problem, objectives of the study, the research questions, the significance of the study, limitations and definitions of terms.

Educational technology has long been recognised as an important means of disseminating knowledge and skills to students in Malaysia and the world in general. The effective use of technology can make the process of learning and teaching English as a Second Language (ESL) less of a chore as it captures the attention and imagination of students. In the early days, educational institutions in Malaysia were supplied with television, radio cassette players, VCR sets and the ubiquitous overhead projectors. These were the technological implements of the day and they were utilised effectively by the teaching profession including English Language lecturers in teacher training colleges. The past few decades has seen the rapid transformation of that scenario with the introduction of computers, and ICT peripherals in education. The 1980's saw the introduction of desktops which were accessible and affordable for lecturers' and students' (Mason, 2007). The development of Information Technology (IT) and research on the use of these technologies as educational implements has radically transformed teaching and learning (ICT Cluster, 2010). The potential power of these new technologies to alter our lives positively is difficult to challenge. In fact there is a strong public perception that no school can prepare its students for tomorrow's society without the exposure to new technologies (Glenn, 1997). Information technology has the resources to transform information stored in less flexible and efficient analogue formats such as the audio cassette into very flexible high density media such as digital versatile disks (Negroponte, 1995). In an ESL classroom this translates to easy access of instructional data. If previously teachers had to rely on stacks of cassettes, now a single compact disk or external hard drive could store information which would fill several thousand cassettes. On another technological front, the advancements in fibre optic technology combined with improvements in the processing capacity of computer microchips such as the Intel and AMD has made surfing the worldwide web easier and faster. Today a simple desktop computer in the classroom has enabled faculty and students to send and receive e-mail, create, edit, download and upload interactive teaching and learning material with relative ease (Smith, 2000). These advancements had in the last decade enabled the transfer of large volumes of information across the globe in short durations. These advancements have naturally provided the technological impetus as Gates (1996, p. 134) believes to "empower people of all ages, both inside and outside the classroom, to learn more easily, enjoyably, and successfully than ever before".

## **1.1 The Development of ICT in Malaysia**

The establishment of the Multimedia Super Corridor (MSC) during the era of the former prime minister of Malaysia, Tun Dr. Mahathir Mohamad marked a key initiative in the government's expansion programme of Malaysia's information technology infrastructure. The MSC is located within a 750 square kilometre parcel extending from the capital Kuala Lumpur in the north to Sepang in the south. Located within the corridor are two smart cities; Putrajaya and Cyberjaya. Putrajaya is a modern hi-tech administrative centre populated by smart homes, schools and offices capable of a paperless administration and the second city, Cyberjaya serves as its satellite centre, focussing on manufacturing and trading centres specialising in multimedia and IT (Nain & Anuar, 1998).

In a recent development, the government and Telekom Malaysia Bhd. unveiled a RM15.6 billion project to upgrade the nation's high-speed broadband infrastructure (Goh, 2010). Prime Minister Najib Razak announced that the high speed broadband network would have wide reaching educational and economic implications to the country. Known as Unifi, the broadband network boasts voice services and 21 IPTV channels. Telekom Malaysia hopes to raise Malaysia's household internet penetration from 30 percent to 50 percent. The Prime Minister is upbeat that once this target is reached, 750,000 households would benefit from the project and it is expected to raise Malaysia's GDP by 1 percentage point and create over 130,000 jobs. The government's follow-up initiative would include a project to subsidise broadband and notebooks to underprivileged students. They only need to pay RM50.00 a month for a notebook computer and broadband subscription.

## **1.2 ICT in Malaysian Educational Institutions**

Teacher Training Institutions (Hence forth to be known as TTI), as the premier government administered teacher education institutions in the country, have to keep up with the technological developments instituted at the school level so that the training provided for both in-service and pre-service teachers are relevant in the present school environment (Chan, 2002). As it is, almost every secondary and primary school in Malaysia is equipped with computers. Some are fortunate enough to have a computer laboratory in their premises (Chan, 2002). Even aboriginal resettlement schools in remote areas which can only be accessed by rivers and footpaths are now replete with computers powered by solar cells. These developments are in line with the realisation of the Malaysian Ministry of Education's mission statement which is to develop a world class quality education system which will help realise the full potential of the individual and fulfil the aspiration of the Malaysian Nation (MOE, 2009). These aspirations were reiterated by Malaysia's fifth Prime Minister, Datuk Seri Abdullah Ahmad Badawi in his speech at a National Economic Action Council (NEAC) dialogue forum with the council members, corporate leaders, professionals and academics in January 2004 at the Marriot Putrajaya:

“At the heart of our quest for a strong performance culture is the need to build a world class education system. .... I believe we will need nothing less than an education revolution to ensure that our aspirations to instil a new

performance culture in the public and private sectors is not crippled by our inability to nurture a new kind of human capital that is equal to the tasks and challenges ahead.” (Abdullah, 2004 p.15)

Without a doubt, Malaysia has undertaken to build its stock of human capital by capitalising on the opportunities offered by IT. Choosing this path also meant that Malaysia was ready to face the challenges of globalisation. Striving for academic excellence in the fields of science, technology and English language proficiency for effective communication would ensure that Malaysia continued to produce human capital competent enough to face the challenges posed by globalisation. Striving for academic excellence especially in the fields of science and technology is also one of the preferred routes to continued economic success for Malaysia (Towndrow & Vallance, 2002).

The following is a brief introduction to ICT in Malaysian schools. This has to be discussed in light of the relevance of teacher training which would be discussed in the next section.

### **1.2.1 ICT in Malaysian Schools**

Private schools and secretarial colleges led the way in the 1980's, providing basic certification courses in word processing and programming (Ng, 1989). This prompted parents with children in government schools to request for ICT education to be included in the syllabus. The Ministry was aware of the need to include ICT education in schools or risk being left out in the technology race that was spreading through the rest of Asia. The ministry's technology programme was initiated in 1983 and by 1986 the Curriculum Development Centre had developed an ICT literacy syllabus to be used in upper secondary classes. Following this, a pilot project known as the Computer Literacy Pilot Project (CLPP) was launched in 20 selected secondary schools (Shahul & Ramli, 1987). Under the programme each school received five desktops with brand names such as Apple, IBM, BBC and NEC. The objective of the programme was to introduce basic ICT literacy. Students involved in the programme were required to attend classes once a week for 40 minutes.

Apart from the ministry initiated programme, schools were also setting up their own computer clubs (Ng, 1989). The ministry recommended guidelines for the clubs stipulated the use of BASIC, Logo, word processing, database management, spreadsheets, CAL and computer games (Hawkrige, Jaworski & McMahon, 1990). Ng (1989) reports that between 1981 and 1987, 500 computer clubs had been established. Each club had between one to two desktops and most of these were found to be in urban areas.

At this stage, however, teacher training colleges were yet to be inducted into the programme. There were no ICT professional development courses for the lecturers and trainees. Most lecturers felt that they were not qualified to conduct courses related to ICT. Furthermore, apart from mathematics, none of the courses conducted had any requirement in the syllabus for the inclusion of ICTs. The teacher training division of the Ministry of Education had not made any policy statements on the issue either. In some colleges, as in the schools, computer clubs had been set up (Hawkrige, Jaworski



& McMahon, 1990). Nevertheless, some universities conducting Bachelor of Education programmes had started to expose their students to the use of ICT in education (Hawkrige, Jaworski & McMahon, 1990). These teachers upon posting, apart from teaching their subjects of major, acted as advisers to computer clubs or were inducted into conducting the CLPP programme. Meanwhile, residential schools such as the Mara Junior Science Colleges had their own computer in education programmes (Shahul & Ramli, 1987). Teachers in these schools attended courses organised by the MARA headquarters. Throughout this period of induction and diffusion of the new technology, teachers remained upbeat and enthusiastic. However, the limited number of computers in their own institutions and classrooms coupled with the lack of funds to procure new computers and peripherals hampered any further development (Shahul & Ramli, 1987).

The introduction of ICT technology on a large scale in the Malaysian education system started with the implementation of the Smart Schools programme, one of the seven key flagship ventures identified under the MSC project (Multimedia Development Corporation, 2005). The main objective of the programme is to develop and introduce a new curriculum, in particular for the teaching of science, mathematics and English in selected schools designated as Smart Schools. The aim of the new curriculum would be to stimulate creative and critical thinking skills couched in well-rounded values to be delivered in an IT-rich learning environment (Curriculum Development Centre, [CDC] 1997). Inevitably, the implementation of these objectives called for changes in teacher training methods and classroom as well as school management practices (CDC, 1997). The various teacher training institutions in the country had since initiated technology units which conduct training programmes for both in-service and pre-service teachers to teach in smart schools.

The next wave of digital education impacting indirectly on the teaching and learning of English followed soon when the government of the day, under the leadership of former Prime Minister Tun Dr. Mahathir, decided that science and mathematics would be taught in English in all primary and secondary schools in the country (Kuppusamy, 2005). This was known as the PPSMI programme. However, there was an outcry from teachers as many lacked the language proficiency needed to teach science and maths in English. In order to enhance the language proficiency of these teachers, the Ministry of Education launched the EteMS (English for Teaching Mathematics and Science) programme. Henceforth, the MOE, (Ministry of Education) proposed and was accepted, that EteMS and PPSMI would rely heavily on the use of IT (Hamidah Ab Rahman, Aziz Nordin, Mukheta Isa, Fatimah Puteh, Faruk Muhammad, Norazman Abd Majid, Aminah Ahmad Khalid, Siti Fatimah Bahari, et. al, 2005; Kuppusamy, 2005). Following the acceptance of the proposal by the MOE the government allocated a budget close to a billion ringgit which was promptly used to purchase and distribute a large sum of laptops, desktops, LCD projectors and screens, scanners, digital cameras and relevant software and programmes to schools and the teacher training institutions. In a statement in parliament, the former Deputy Education Minister, Datuk Razali reported that thus far the government had spent RM2.21 billion on ICT equipment and supplies and RM2.4 million ICT software for the programme (The Sun, 15 May, 2008, p. A2.). He also said that another RM317 million was spent on training pre-service and in-service teachers. The project also involved the training of personnel to handle the equipment and subsequently the retraining of thousands of teachers throughout the country on the basics of handling the equipment as well as implementing them in the context of

teaching and learning so that they could harness and yield these new technologies in their daily classroom instruction. This task was also entrusted to the various teacher training institutions in the country. Retraining of teachers particularly those who taught Science, Maths and English started in phases beginning in 2002 and continued up to the end of 2008. In the same year science and mathematics lessons for students in year one, form one and lower six were conducted in English. This exercise was a landmark in the development in ICT integration in the classroom as it increased professional development programmes, ICT proficiency and access to ICT infrastructure in teacher training institutions and schools.

Nevertheless, there were many quarters who were not happy with the programme. Following extensive studies and forums the Ministry decided to terminate the PPSMI programme. This was stated in a circular (KP(BSPSH-SPDK)201/005/01(38)) issued by the Ministry dated 25th January, 2010. The PPSMI programme would be phased out gradually beginning in 2010 and ending in 2015. Nevertheless, the ICT equipment and professional development programs attended by teacher training institution lecturers and school teachers would have left an indelible mark in these institutions. The ICT proficiency acquired by the respondents, ICT equipment and support service personnel employed under these program needs mention in the present study, as these components are important variables in the present study, on ICT integration.

### **1.3 Statement of the Problem**

Several studies in schools and teacher training institutions in Malaysia (Samuel & Zaitun, 2006; Nykvist, 2009; Ming, Hall, Azman & Joyce, 2010) have highlighted that accessibility is no longer a problem for educators affiliated with the Education Ministry. The studies cited above, have all stated that teachers in schools and lecturers in teacher training institutions have some form of access to ICT. However, the availability of these facilities does not automatically guarantee that ICT would be integrated in teaching and learning (Wan, Hajar, Nor & Hayati, 2009) and indeed these studies have highlighted the lack of ICT integration in the classroom. Samuel and Zaitun (2006) in particular have highlighted the lack of ICT integration in teaching English. A strong indicator of the lack of ICT integration as a problem that requires further study was provided by the Malaysian Education Blueprint 2013-2025 which states that the Ministry had spent more than RM6 billion on ICT over the past decade and yet close to 80 percent of teachers spend less than an hour a week integrating ICT (Preliminary Report-Executive Summary, 2012). Because of the gaps identified in these studies and the preliminary report on the Malaysian Education Blueprint the present study, warrants the need for identifying the predictors of ICT integration in teaching English as a second language among English language lecturers' in Malaysian teacher training institutions. Identifying these predictors is a pertinent factor in the quest for enhancing ICT integration in the teaching of English in teacher training institutions.

A second problem raised by the studies mentioned above relates to the perspective of studying ICT integration in Malaysia. The studies mentioned above have identified the lack of ICT integration. While these findings may be true, the perspective of studying ICT integration by looking at individual components such as attitude, gender and the

use of certain software may not provide a true and composite picture of ICT integration (Tondeur, Braak & Vaalke, 2008).

Wong, Norliza and Ahmad (2011) sought to study the correlations between learning strategies and computer attitudes among Malaysian secondary school students. Moganashwari and Parilah (2013), has conducted a study to explore the knowledge level, attitude and the use of ICT among ESL teachers in Malaysia. Rosnaini and Mohd Arif (2010) sought to understand the impact of training and experience in using ICT on in-service teachers' basic ICT literacy among Malaysian school teachers. Helen (2012) on the other hand conducted a study to ascertain adult learner characteristics and ICT competencies among private pre-school teachers. Another interesting study on ICT in Malaysia was conducted by Kazi, Ahmad and Mosa (2012). This study sought to understand the utilization of ICT among school teachers and principals in Malaysia. Siti Mariam and Farah Dina (2014) conducted an exploratory study to investigate the perceptions of adult learners in an advanced English learning course using Wiki for collaborative writing.

In these and other studies conducted on ICT integration in Malaysian educational institutions in general and the teaching of English in specific, the context of integration and the composite nature of integration had been overlooked. This is important because the context would define the type of ICT knowledge and proficiency that would be required by the respondents. ICT integration does not exist in a vacuum. It is a culminate process involving multidimensional factors. (Ming, Hall, Azman & Joyce, 2010). This oversight can be attributed to a lack of understanding of the predictors that work as a catalyst for ICT integration especially in the context of teaching English as a second language in Malaysia. Because of the gaps identified in these studies the present study, warrants the need for identifying the predictors of ICT integration in teaching English as a second language among English language lecturers' in Malaysian teacher training institutions.

Studies which are context specific which focus on ICT integration and the teaching of English as a second language (Samuel & Zaitun, 2006, 2007), however, have found a host of factors which affect ICT integration in the teaching of English. In one context specific study, Izaham (2009) states "the integration or incorporation of computer-aided teaching and learning activities in university-level ESL courses has either been minimal or not practiced at all" (p. 36). Samuel and Zaitun (2006) in their study regarding ICT integration among English option teachers have also identified a host of issues regarding ICT integration among ESL teachers. They find that teachers rarely carried out ICT integrated English lessons and they are generally ignorant of ICT integrated and interactive lessons and quizzes on the web. On a similar note, Bates and Sangra (2009) state that students rate faculty lack of tech knowledge as a big impediment to classroom technology integration. They further state that failure to use technology to its full potential is akin to failing to teach students of the millennium the way that they want to be taught. Because of the gaps identified in these and in earlier studies mentioned and based on the researcher's observation the present study, warrants the need for identifying predictors determining information communication technology integration in teaching English as a second language among English language lecturers' in Malaysian teacher training institutions.

## 1.4 Objectives of the Study

The main objective of the present study, is to investigate the predictors affecting ICT integration among English Language lecturers in teaching English in the TTI's. The specific objectives for the present study, are as follows:

1. To determine the level of ICT integration among English Language lecturers within the context of teaching English in teacher training institutions in Malaysia.
2. To determine the varying predictive effect of demographic factors such as age, teaching experience, gender and level of education among English Language lecturers on their current level of ICT integration.
3. To determine the significance of the following factors in predicting the English Language lecturers ICT integration in TESL teacher training:
  - a) technology proficiency
  - b) attitude towards ICT
  - c) professional development
  - d) ICT infrastructure access and support services
4. To determine the extent to which the observed variability in ICT integration among English Language lecturers can be predicted by assessing the combined impact of the above mentioned factors.

## 1.5 Research Questions

This research was guided by six main factors affecting the respondents ICT usage and integration. These factors have been conceptualised in the theoretical framework developed for this study:

1. ICT Integration
2. Demographic factors
3. Organisational challenges such as infrastructure access and support services faced by the lecturers in the usage and integrating of ICT
4. Attitude towards ICT
5. Professional development
6. Technology proficiency
- 7.

The data collection process of this study was guided by the following research questions.

1. To what extent are English Language lecturers in teacher training institutions integrating ICT for instruction in the classroom?
2. Are the sub set of demographic factors, age, gender, level of education and teaching experience able to predict a significant amount of variance in ICT Integration among English Language lecturers?
3. Is there a significant positive relationship between the English Language lecturers' level of technology proficiency and their level of ICT integration?
4. What is the relationship between the English Language lecturers' attitude towards ICT and their level of ICT integration?
5. Is there a significant positive relationship between professional development and the English Language lecturers' level of ICT integration?

6. Is there a significant positive relationship between ICT infrastructure access and the English Language lecturers' level of ICT integration?
7. Is there a significant positive relationship between ICT support services and the English Language lecturers' level of ICT integration?

## **1.6 Significance of the Study**

This study is intended to be analytic and exploratory rather than prescriptive. It intends to analyse the current level of classroom ICT integration among lecturers in the English Language Department of the Malaysian Teacher Training Institutions. For lecturers, administrators, as well as policy makers, the findings of this analysis have significant implications in designing, implementing and promoting effective technological practices in the teaching of English in teacher training institutions nationwide. In terms of technology integration, the critical issues that the present study, focuses on are the availability of technology resources, support services, adequate training, lecturers' technology proficiency and attitude and their responses to change, and effective use of technology in the classroom. It will provide insights on the major factors associated with change in the assimilation of ICT and their implications for ESL teacher training.

Over the past twenty years there has been many ground-breaking and exemplary research and scholastic work focusing on ICT in education in Malaysia. However, the literature holds a great number of replications and works of limited features. Primarily most studies done in the country work from a perspective that verges on an utopian outlook of technology. While a positive view of technology is not something to be discouraged, reticence to analyse the less effective and detrimental facets of ICT restricts the field and fails to provide a balanced and reliable report of ICT inculcation in education (Toyama, 2011). The study is significant in the sense that it endeavours to provide a balanced view of ICT integration in an educational setting.

A certain tendency to avoid a theory based approach in directing research inquiry has also been noted in many studies in relation to ICT and education (Bryson & de Castell, 1994; Carr, Jonassen, Litzinger & Marra, 1998; Seels, 1997). This mistrust of theoretical perspectives has been prevalent despite attempts to channel educational ICT inquiry into an organized theory based inquiry capable of producing reliable and valid reports. In Malaysia, this reticence had produced a body of large but narrowly focused research evidence of ICT in education. This is even more evident in the field of ICT and teacher education. To date, most of the research done in ICT and teacher education in Malaysia continues to take the shape of small/medium-scale surveys and case-studies, experimental descriptions and classroom- focused analysis. This situation is retrospective of Kenway's (1996, p. 217) argument that educational computing research is "too micro-focused and unwilling to engage with wider concerns". Quite conceivably, the opportunity for change lies in the method of inquiry employed by educational computing research. For instance, despite the preponderance of small and medium scale survey methods researching ICT in teacher education, there has been a lack of quantitative studies that had so advanced other areas of educational inquiry in the country. Arguably there is a strong case that computing research is lacking the type of data needed to illustrate the extend of ICT inculcation and its attend perspectives among lecturers in teacher training institutions across the country and not in smaller samples of localized institutions which cannot be generalized to a wider context of ICT utilization.

Presently, such large scale work on ICT integration in schools is usually carried out by the Technology division of the Ministry of Education and the studies carried by the inspectorate of schools. Large scale surveys had also been carried out concerning ICT utilization in universities. Large scale studies that cover an entire institution across the country are instrumental in providing illustrations of ICT in education and identifying “patterns and conditions of success and failure, good and bad practice and the strategies which lead to the effective implementation of technology” (Selwyn, 2000, p. 95). The present study, is significant in gathering and analysing data based on the working of an entire institution numbering 27 campuses across the country. However, they work as an entity guided by the policies of the Teacher Education Division of the Ministry of Education. The findings of the proposed study would be instrumental in identifying the factors that encourage or inhibit the usage and integration of ICT in these institutions. The Teacher Education Division as the governing body could use the findings to promulgate policies to enhance the usage and integration of ICT in these institutions. Currently, lecturers in teacher training institutions are found to be using only word processing, presentation and spreadsheet software (Nykqvist, 2009).

Based on the findings, policy makers could conduct more courses on the effective use of word processors, presentation, email, telecommunication and even social networks to teach English. Lecturers could also be trained on the implementation and use of learning management systems. The findings could also serve as a guideline on the types of courses that are beneficial to the lecturers. The study would also yield data on the type of ICT equipment and maintenance services available at the institutions. For example, are there enough computers, LCD projectors, audio visual equipment, televisions, printers, scanner and other equipment for the use lecturers and students? In the event that there is breakdown of equipment, are there enough technicians to service the equipment? These data would enable policy makers and administrators to make policy adjustments and budget allocations to improve or maintain the system according to the findings and their own needs.

While quantitative surveys are significant there is also a critical need for qualitative work to balance and validate the quantitative data. Other areas of social science research had benefited immensely from qualitative research but ICT in education had seemed curiously resistant to qualitative methodology and analysis. In educational research, overreliance on any one method is detrimental and constricting. However, the supplementation of qualitative data though exigent in execution, accords “a focus on what does happen as opposed to what has apparently happened or what could happen” (Selwyn, 2000, p. 95) when ICT is adopted in an educational setting. Findings based purely on quantitative data were often found lacking in validity and reliability leading to erroneous and inconsequential reports (Hussein & Mzumbe (2009). The use of triangulation to ensure the validity and reliability of social science research is an established method (Denzin, 1978; Hussein & Mzumbe, 2009). The present study, is also significant in the sense that it correlates both quantitative and qualitative data concerning teacher education in Malaysia. Overall the significance of the present research lies in providing up-to-date and scarcely available data in a valid and reliable form.

In conclusion, it is anticipated that the current study would be able to identify factors that promote or inhibit the integration of ICT by English Language lecturers in Teacher Training Institutions. These factors would be tested and conceptualised in a model for

ICT integration. The study would provide current data in helping the Ministry of Education to develop succinct policies and educational strategies pertaining to ICT with greater certainty and effectiveness. It is also expected that the results would be able to provide the Teacher Education Division of the ministry with a set of guidelines or framework for best practices that can be utilized to facilitate effective change for the benefit of the English Language lecturers and students. The study would also be able to validate the proposed theoretical framework on the diffusion of ICT as an innovation in an educational setting.

## **1.7 Limitations of the Study**

This study aims to shed some light on the factors affecting English Language lecturers ICT usage and integration in Malaysian Teacher Training Institutions. The respondents in this study, would be selected through a random sampling of the population. The data provided Hence, from questionnaires and interviews are not necessarily generalizable to all such institutions but would be helpful in allowing us to understand the factors that promote or impede ICT integration in English Language teacher training. The data is simply representative of a select group of individuals who volunteered to participate in the study. The accuracy of data collection will be limited to the degree to which participants are willing to share relevant information. Furthermore, there are many factors that impede or aid ICT adoption in a higher learning environment. The present study, had undertaken the task of appraising some of these factors based on the element outlined in the theoretical framework.

## **1.8 Definition of Terms**

The following section contains a discussion of the terms used in the present study. These are discussed operationally and within the limits of the present study.

### **1.8.1 English Language Lecturers**

These are full time instructional staff, appointed by the Malaysian Educational Services Commission and employed by the Teacher Education Division of the Ministry of Education to teach as well as to train English Language Teachers for Malaysian Primary and secondary Schools. The term may mean or be used interchangeably with English Language teacher educator or instructor. In the present study, English Language Lecturers are the respondents. They operate within a timetable, teaching both the methodology of teaching English and English Language proficiency.

### **1.8.2 Information Communication Technology**

The term applies to any device and application used to access, manage, integrate, evaluate, create and communicate information and knowledge, including but not limited to radio, television, cellular phones, computer hardware and software, network hardware and software, satellite systems, peripherals, connections to the internet, etc. Digital technologies are included in this definition, as are the services and applications used for communication and information processing functions associated with these

devices (UNESCO 2008). In this study, ICT refers to the use of the above equipment for the purpose of teaching and learning the English language as well the use of such technology by lecturers in teacher training institutions to teach teacher education students the methodology of teaching English, or in other words the infusion or integration of the above mentioned technologies in the pedagogy of teaching English in teacher training institutions.

### **1.8.3 Teacher Training Institutions**

Government run educational institutions entrusted with the task of producing teachers for pre-school, primary and secondary schools. Teachers graduate with a diploma or degree. There are 27 such institutions in the country run by the Teacher Education Division of the Ministry of Education. In this study, teacher training institutions are where the respondents, namely English language lecturers teach.

### **1.8.4 ICT Integration**

Knowledge of pedagogy, content and technology are often thought of as separate and independent of each other. Integration involves the complex interplay between these bodies of knowledge (Mishra & Koehler, 2006). In the present study, integration is defined as the interplay of the actual subject matter that is learned and taught (content), the process, practise, theories and methods of teaching and learning (pedagogy) and ICT.

### **1.8.5 Information Communication Technology Proficiency**

Educator proficiency is defined as the proficiency of educators in implementing, assessing and supporting a variety of effective practices for teaching and learning while technology proficiency requires the nurturing of digital-age skills and processes, planning and design, implementing technology supported learning, assessment literacy, professional practice and productivity, and able to guide students as they deal with social, ethical and legal issues related to life in a technological world. In this study, technology proficiency denotes the respondents knowledge and capacity to manipulate software and hardware in implementing technology supported learning in their teaching environment.

### **1.8.6 Content Knowledge**

In this study, content knowledge, in keeping Misha and Koehler's (2006) definition, would represent the respondents knowledge of the English Language curriculum and syllabus and how these are to be conceptualized in the classroom as various skills to be taught to students.

### **1.8.7 Pedagogical Knowledge**

Misha and Koehler (2006) define pedagogical knowledge as "deep knowledge about the processes and practices or methods of teaching and learning and how it



encompasses, among other things, overall educational purposes, values, and aims. This is a generic form of knowledge that is involved in all issues of student learning, classroom management, lesson plan development and implementation, and student evaluation. It includes knowledge about techniques or methods to be used in the classroom; the nature of the target audience; and strategies for evaluating student understanding (p. 1026).”

### **1.8.8 Technology Knowledge**

In this study, technological knowledge refers to the skills to operate digital technology, particularly ICT knowledge. This would involve the knowledge to operate computer hardware, and the ability to use standard sets of software tools such as word processors, spreadsheets, browsers, and e-mail. It would also involve the knowledge to add and remove peripheral devices.



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