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Familiarity with Information and Communication Technology: A Study of the TESL Undergraduates of the Universiti Teknologi MARA, Malaysia

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Abstract

Information and Communication Technology (ICT) is now an essential part of tertiary education around the world. Through the use of ICT, students benefit more from their learning through seamless communication and synchronous knowledge interchange with others, be it on or off campus. To ensure that ICT can be integrated effectively into students' learning, there is a need to identify students' level and capability of ICT usage. Given the differences that may exist in the levels of ICT familiarity for Universiti Teknologi MARA (UiTM) students who come from diverse backgrounds, there is a need to study the use of ICT among the students in order to effectively plan for lessons integrating ICT. This survey examines the usage of ICT among UiTM Teaching English as a Second Language (TESL) students in their third or fourth semesters. The study covers the availability of ICT, use of ICT at home, use of ICT at school and attitudes towards computers. It was found that students are familiar with ICT and that they have positive attitudes towards using ICT for personal and educational purposes.

Keywords: ICT usage, tertiary education, familiarity, integrating

Introduction

Information and Communication Technology (ICT) has been introduced into education over the past two decades. During this developmental era, classrooms worldwide have witnessed the transformation from text manipulation to more interactive and communicative applications such as the web and emails (Murray, 2008). Computer Assisted Language Learning (or CALL), for example, is considered a pioneering and success method for enabling more engaged learning using ICT in education. Christison (2002) outlined that the provision of a rich environment is essential for learning. Students should take charge of their learning by engaging actively, but more importantly, a rich learning environment is induced by the availability of support for such active engagement among learners. New technologies with an emphasis on communication and self-expression support such principles (Jensen, 2007).

In Malaysia, the introduction of ICT in teaching and learning began with the introduction of the Smart School project in 1999 (Wan Zah, Hajar and Hazimi, 2009). It is considered a learning institution that incorporates teaching and learning practices and school management. Smart School aims to prepare students for the Information Age and to achieve the goals of the National Philosophy of Education (Wan Zah, Hajar, Azimi and Hayati, 2009). It aims to produce technology-literate students and a critically thinking workforce that will be competent in the 21st century. With a foundation rooted in this initiative, the integration of ICT within the Malaysian education system spread to the tertiary level.

Problem Statement

Students at the tertiary level come from various backgrounds and possess different levels of ICT skills. A large percentage of students have a strong foundation and strong skills in using ICT and are IT savvy (Khalid, 2009). However, there are some students who might have inadequate skills due to various factors, such as lack of technological infrastructure (Annan, 2003). In the current educational scenario, adapting to the use of ICT is crucial to ensuring successful learning through effective implementation of ICT in education. Thus, there is a need for the educators to first gauge their students' existing familiarity towards ICT before they can implement technology in their classroom. It has been strongly proposed that

"knowing your learners" should be the first step before designing any instruction to ensure learning outcomes are achievable (Lever-Duffy and McDonald, 2011). Hence, the students' level of familiarity may affect their attitude towards the use of ICT in education (Khalid, 2009) and their education as a whole. It is therefore crucial for the educators to be aware of their students' level of familiarity with ICT. Furthermore, information on the students' current level of ICT familiarity can also help the institution in determining facilities or courses needed in order to enhance students' ICT skills. In this paper, a student's familiarity with using ICT is informed by the student's access to ICT, the purpose of ICT usage and the student's attitude towards using ICT (Thomson and Bortoli, 2007).

Research Objectives

1. To study to what extent ICT devices are available to the students.
2. To study students' purposes for using computers at home and in the faculty.
3. To study students' attitudes towards computer usage.

Research Design

This is a descriptive research study utilising a questionnaire adopted from Thomson and Bortoli (2007). Cronbach's alpha for the instrument was 0.92 (Thomson and Bortoli, 2007). The questionnaire consists of three sections which are (1) the availability of ICT, (2) the purpose and skills of ICT usage and (3) attitudes towards computers. The first part- availability of ICT covers the availability of ICT at home, at the faculty and the general use of computers. The next part which is the use of ICT at home focuses on the regularity of computer usage at home and the Internet usage at the faculty and the amount of time spent using the computer during classroom lessons. This section also covers the participants' capability in using the computer and the use of computers outside classroom lessons. The last part of the questionnaire covers on the student's attitude towards computers.

Sample

The sample of this study is randomly selected from TESL undergraduate students who are currently in their third or fourth semester at the Faculty

of Education, Universiti Teknologi MARA. The selection resulted in a research sample of 89 respondents for this study.

Results and Discussion

Availability of devices at home

The results show that most of the ICT equipment and devices are available to the respondents at home, as shown in Table 1.

Table 1 Availability of devices at home

Devices	Yes (%)	Yes, but I don't use it (%)	No (%)
Desktop computer	47.1	25.3	27.6
Portable laptop or notebook	98.9	0.0	1.1
Internet connection	92.1	0.0	7.9
Video game console (e.g., Sony PlayStation®)	76.7	8.1	15.1
Mp3/mp4 reader, iPod or similar	81.8	2.3	15.9
Printer	93.1	2.3	4.6
USB (memory) stick	98.9	0.0	1.1

Table 1 indicated that 47.1% of respondents agreed to the statement that a desktop computer is available to them at home. Another 25.3% of respondents disclosed that they have the device at home but do not use it. Meanwhile, 27.6% of them mentioned that a desktop computer is unavailable at their home. Thus, it could be concluded that almost half of the respondents possess desktop computers at home. The Organisation for Economic Cooperation and Development (OECD) (2001) indicates that computer availability at home influences the development of students' ICT skills. Hence, it is important for the students to own computers in order to develop their digital skills. However, the OECD (2001) also suggests that the availability of computers in students' learning environments can mitigate the unavailability of a computer at home. A

total of 98.9% of the respondents claimed that a portable laptop or notebook is available to them at home—a high percentage because only 1.1% of the respondents do not have these devices at home. With regard to the availability of Internet connection, 92.1% of the respondents have it at home while only 7.9% of them stated otherwise.

The analysis also revealed that almost all of the respondents (100%) have video games and printers at their home. This makes sense, as games are now included in many devices such as desktops and notebooks, as well as mp3 players and iPods. Many users also save their games in their USB memory sticks.

Availability at the faculty

Table 2 shows that a majority of the respondents (87.6%) claim that a desktop computer is available to them at faculty, while 7.9% of them admitted that they do not use it even though it is available.

Table 2 Devices availability at faculty

Devices	Yes (%)	Yes, but I don't use it (%)	No (%)
Desktop computer	87.6	7.9	4.5
Portable laptop or notebook	29.5	9.1	61.4
Internet connection	95.5	4.5	0.0
Printer	85.1	8.0	6.9

It is interesting to discover that, in contrast to the desktop computer, only 29.5% of the respondents had a laptop available in their school. However, a large portion of the students,—61.4%,—answered "no", while the remaining 9.1% responded that the device is available in their faculties but they do not use it. This makes sense because the faculty only provide desktop computers instead of portable laptops for their students' use as part of the safety measures.

Table 2 also shows that an internet connection is available on the respondents' campus. 95.5% of them stated that they have access to the

Internet on campus while another 4.5% of them also have access even though they do not use it. This finding reflects the initiatives of the Malaysian government in providing better access towards ICT needs in educational institutions, especially in universities.

The availability of printers in the faculty is shown in Table 2. A high percentage, 85.1%, of the respondents claimed that a printer is available in their school. On the other hand, 8.0% of the respondents disclosed that they do not use the printer, although it is available in their schools. A similar percentage of the respondents (6.9%) also revealed that there is no printer provided for their use in their faculties.

The Purpose of Students Using Computers at Home and on Campus

The use of ICT at home

Based on Table 3, we can conclude that there are four main activities that they do every day or almost every day when using the computers at home: homework, email, online chatting and browsing the internet for fun. In addition to that, they also use computers to download files such as music, films, games or software once or twice a week. In using computers at home, the activities that they do least are playing single-player games, playing collaborative online games, publishing and maintaining personal blogs, and participating in online forums. It also shows that using computers at home to play single-player and collaborative games, publish and maintain a personal website, weblog or blog and participate in online forums and virtual communities are not the type of activities that the respondents prefer to do as majority of them answered “never or hardly ever”. The preference for computer usage among the respondents is highly centred on entertainment rather than on course-related tasks.

Table 3 The use of computers at home

Items	Never or hardly ever (%)	Once or twice a month (%)	Once or twice a week (%)	Every day or almost every day (%)
Play single-player games	30.7	25.0	20.5	23.9
Play collaborative online games	59.8	23.0	4.6	12.6
Doing homework on the computer	2.2	4.5	29.2	64.0
Use e-mail	4.5	16.9	36	42.7
Chat online (e.g., Skype®)	10.1	28.1	24.7	37.1
Browse the Internet for fun (such as watching videos, e.g., YouTube™)	1.1	1.1	10.1	87.6
Download music, films, games or software from the Internet	2.2	14.6	37.1	46.1
Publish and maintain a personal website, weblog or blog	39.3	28.1	12.4	20.2
Participate in online forums, virtual communities or spaces (e.g., Second Life® or MySpace™)	42.7	19.1	16.9	21.3

The use of Internet and email for course-related tasks

Table 4 reports the findings on the respondents' general activities with their computers when they are at home. The most frequent school-related activities that the respondents do at home are communicating with their peers regarding schoolwork through email, browsing the internet for schoolwork, downloading, uploading or browsing materials from the school's website, and checking the school's website once or twice a week. The least frequent activity that the respondents do at home in terms of course-related tasks is using email to communicate with lecturers and to submit their assignments.

Table 4 The use of Internet and email for course-related tasks

Items	Never or hardly ever (%)	Once or twice a month (%)	Once or twice a week (%)	Every day or almost every day (%)
Browse the Internet for assignments (e.g., preparing an essay or presentation)	2.2	3.4	47.2	47.2
Use e-mail for communication with others about assignments	12.4	21.3	31.5	34.8
Use e-mail for communication with lecturers or submission of assignments	14.6	39.3	34.8	11.2
Download, upload or browse material from your school's website (e.g., time table or course materials)	6.7	29.2	48.3	15.7
Check the faculty's website for announcements, e.g., absence of lecturers	6.7	20.2	49.4	23.6

The most frequent course-related activities that the respondents do at home are communicating with their peers regarding assignments through email, and browsing the internet for assignments, downloading, uploading or browsing materials from the faculty's website, and checking the faculty's website once or twice a week. The least frequent activity that the respondents do at home in terms of course-related tasks is using email to communicate with the lecturers and to submit their assignments. The purpose of using ICT for course-related tasks has been identified as one of the factors in determining effective integration of ICT in education (Ainley, Enger and Searle, 2008). Hence, the high percentage of Internet browsing suggest that more effective instruction can be carried out by asking students to retrieve information through the internet as this indicates effective integration of ICT in the course.

Skills using computers

Five skills were listed in the questionnaire and the respondents were asked to indicate whether they "can do this very well myself", "can do this with help from someone", "know what this means but I cannot do it", or "don't know what it means".

Table 5 Skills in using computer

Items	I can do this very well by myself (%)	I can do this with help from someone (%)	I know what this means but I cannot do it (%)	I don't know what It means (%)
Digital photographs or other graphic images	49.4	39.3	9.0	2.2
Create a database (e.g., using Microsoft Access®)	11.2	44.9	31.5	12.4
Use a spreadsheet to plot a graph	43.8	44.9	6.7	4.5
Create a presentation (e.g., using Microsoft PowerPoint®)	97.8	2.2	0.0	0.0
Create a multi-media presentation (with sound, pictures, video)	82.0	16.9	1.1	0.0

Based on Table 5, the respondents are very well versed in editing photographs or other graphic images, creating presentations and creating a multi-media presentation. This is expected, as students are usually required to do presentations in the classrooms. In addition to that, with the advancement of technology, digital cameras are widely used and there are myriad software programs catered for photographs and image-editing. Hence, they would have developed the skills in image editing. Creating database and using a spreadsheet to plot a graph is the third highest statement being voted as something the students can perform on their own. This is most likely because the students are familiar with plotting graphs using spreadsheets through their experience of extracting academic reports.

Students' attitudes towards computers

The findings reveal that the respondents have positive attitudes towards computers. This result is obtained by analysing the last section of the questionnaire. This section contains four questions that focus on the importance of working with a computer, feelings while working and playing with a computer, interest in using a computer and finally, the sense of time that the respondents experience while working with a computer.

Table 6 Students' attitudes towards computers

Items	Strongly disagree (%)	Disagree (%)	Agree (%)	Strongly agree (%)
It is very important to me to work with a computer	5.6	1.1	44.9	48.3
I think playing or working with a computer is really fun	3.4	1.1	52.8	42.7
I use a computer because I am very interested	4.5	4.5	51.7	39.3
I lose track of time when I am working with the computer	5.6	28.1	37.1	29.2

Table 6 shows that most of the respondents agreed with the four statements regarding their attitudes towards the computer. The results reflect respondents' positive attitude in embracing technology into their ways of doing work. As stated by Gay (2006), a learning institution that provides better ICT facilities fosters positive attitudes towards the use of computers in students' learning. Hence, the findings of this research support such statements, as the respondents agreed that by having computers, they are able to perform their academic tasks (Ghabili and Alizadeh, 2008).

Conclusion

This paper has found that students of Universiti Teknologi MARA (UiTM) are geared towards integrating ICT in their learning. Additionally, it was found that ICT devices are widely available for the students at either home or school.

Students are found to be familiar with ICT and they have positive attitudes towards using ICT for personal and educational purposes. It has to be noted that, given direct access to ICT devices, the students should make smart use of this access by channeling ICT tools toward education purposes. An effective integration of ICT into education can expose them to skills that would facilitate more meaningful learning.

Because this study involves a small number or respondents, the result might not be generalisable to the whole population of students in the UiTM. However, this could be an indicator for the university to provide better facilities to support students' learning, as well as gear students towards becoming competent and skillful, thus increasing the human capital of the nation.

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