

E-SKILLS OF UNDERGRADUATE STUDENTS

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ABSTRACT

Multimedia Super Corridor (MSC) is one of the Malaysia initiatives to become a developed nation. Through this initiative, Information Technology (IT) and Information and Communication Technology (ICT) have been popularized among Malaysian community and businesses. IT tools such as computer and Internet have dominated the workplace to support all aspects of activities and work. In line with this progress, the workers have to be equipped with adequate skills on how to use and utilizes the ICT to full fill their jobs need. Therefore, students graduated from the higher education of learning should possess adequate IT skills in conjunction with the core academic knowledge. This paper discusses the assessment of ICT skills that have been conducted on a group of undergraduate students. In this study, the students have been given a questionnaire to state their perception towards ICT tools and application. Later, they are given a task to be completed in an hour. The task was aimed to assess students' actual skill level. The finding shows that most of the have positive perception towards ICT, however the actual assessment shows that students ICT skills are still at average level. The findings suggest that the students need to sharpen their ICT skills before graduating to prepare themselves for the working environment. While, the university need to take some more initiative to encourage students to apply IT knowledge and skills.

Key words: Information Technology, Information and Communication Technology, ICT knowledge, IT Competencies, IT Skills.

Introduction

E-skills has been broadly defined as Information and Communication Technology (ICT) related skills (Lanvin and Kralik, 2009). ICT related skills are the capability to utilize ICT for various purposes including personal, social and business. E-skills can be divided into three categories: ICT user skills, ICT practitioner skills, and e-leadership skills (Gareis et al., 2014). ICT practitioner skill is the capability related to applying ICT skills for various tasks such as problem solving, marketing, administering and planning. ICT user skill is the capability related to the effective use of ICT application, systems, tools, and devices by individuals. While, e-leadership skills refer to the capability owned by the leader of the organization in order to achieve organizational objective. In this paper, e-skill focuses on the skill that is related to the use of ICT and information technology (IT) tools and applications by undergraduate students. Therefore, e-skill is also referred to as ICT skills or IT skills.

E-skills is vital among undergraduate students as this skill is a value added skills that a student must have in conjunction with their domain knowledge and the soft skills. E-skills has become one of the main requirements before graduate can enter the job market (Lanvin and Kralik, 2009; Tyler, 2005) and those who lacks of this skill will lose an opportunity to compete in the work place (Tyler, 2005). At the organizational level, the lack of e-skills will reduce the efficiency of ICT usage (Plaatjies & Mitrovic, 2014), thus ICT will be under-utilized. In a global economy, organizations that are not utilizing ICT will lose their competitive power.

Students with adequate ICT skills are expected to be able to utilize the resources that they have such as the computer, network and search engine in order to achieve their information need. Through these tools and applications, students can find all sorts of information, filter and analyze them. Moreover, knowledge of ICT and subject domain will contribute to the positive searching behaviour that will drive to the success of information searching (Yamin et al., 2013; 2015).

This paper discusses the e-skills assessment conducted on a group of students at a higher education institution. Students with various backgrounds have been given a task to be completed within an hour. The output produced by the students shows that the students' e-skills are at an average level. The next section highlight the need for e-skills through the establishment of Multimedia Super Corridor (MSC). The following section presents the methodology followed by the findings and conclusion sections.

The Need for E Skills

The introduction of the MSC in the late 1990s has encouraged Malaysian to utilize information technology (IT) in all aspects of living including personal, education and businesses. Surveys by Malaysian Communications and Multimedia Commission (MCMC) in 2014 shows that Malaysian is actively utilizing ICT tools and gadgets in their daily activities (MCMC, 2015a; 2015b). This shows that MSC Malaysia has been successful in making IT or ICT as a part of Malaysian life.

In business, ICT has been recognized as one of the driving factors that pushing businesses worldwide. The Malaysia Digital Economy Corporation (MDEC) has been established by the Malaysian government to direct and oversee MSC Malaysia, the national ICT development initiative, advising the Malaysian government on legislation and policies, developing industry-specific practices and setting the standards for multimedia and digital operations (MSC Malaysia, 2016). MDEC identify and award ICT and ICT-facilitated businesses with MSC Malaysia status. This status is a recognition given by the Malaysian government through MDEC to recognize the companies' effort in developing or using multimedia technologies to produce and enhance their products and services. According to MDEC (2015) until 2014, a total of 3,632 companies have been awarded with MSC Malaysia status. These companies have created a total of 147,568 jobs and 87% of these total jobs are Malaysian worker.

The success of MSC Malaysia has shown that ICT is a vital tool that drives Malaysia towards developing country in 2020. Thus, workers with high ICT skills are highly demanded (Expert Group on Future Skills Needs, 2012) to fulfil the need of those MSC status companies. Therefore, students at the higher education institution should be equipped with adequate ICT skills. The skills can be blended into existing curriculum or offered individually as an independent course. In addition, an ICT skill is essential to promote (Quadri, 2012) and increase interactivity in e-learning (Yamin and Ishak, 2015).

Methodology

This study took place at one of the universities located in northern Malaysia. This university offers various programs that covers social, economic, finance, accountancy, management, and IT. Final year undergraduate students are selected in this study as they are about to complete their study and about to be ready for the job market. This study is conducted in a computer lab with a limited number of computer facility. Due to this limitation, only a total of 61 students were randomly selected from a list of final year undergraduate students. The students were given a questionnaire with Likert scale from 1 to 4 to state their perception towards the importance of ICT. The scale represents totally disagree (1), disagree (2), agree (3), and totally agree (4). The questionnaire was adopted from Yusof and Balogun (2011). Descriptive statistical analysis is conducted on the students' feedback.

Students were given a task to prepare a certificate for the traditional kite festival (Figure 1). Detail descriptions and format on each information in the certificate are also provided to the students. In order to complete this task, students are expected to utilize several desktop applications such as Microsoft Office, Microsoft Excel, Microsoft PowerPoint, and web browser. Students are also tested on how they manage and structure the documents, find and edit the images, zipping the files, and using email system.

Students are given approximately one hour to complete the task. Once completed, students were instructed to submit their work together with the materials they used as an email attachment. Students' work was marked and appropriate grade was given based on the score they obtained (Table 1).

Table 1: Score Range and Grade

Score Range	Grade
$x < 34.45$	F
$34.45 \leq x < 39.45$	D
$39.45 \leq x < 44.45$	D+
$44.45 \leq x < 49.45$	C-
$49.45 \leq x < 54.45$	C
$54.45 \leq x < 59.45$	C+
$59.45 \leq x < 64.45$	B-
$64.45 \leq x < 69.45$	B
$69.45 \leq x < 74.45$	B+
$74.45 \leq x < 79.45$	A-
$79.45 \leq x < 89.45$	A
$x \geq 89.45$	A+

Figure 1: Example of the certificate



Findings

Figure 2 shows the gender distribution among students involved in this study. As shown in the figure, most of the respondents are female (83%) while male is only 17%.

Figure 2: Gender

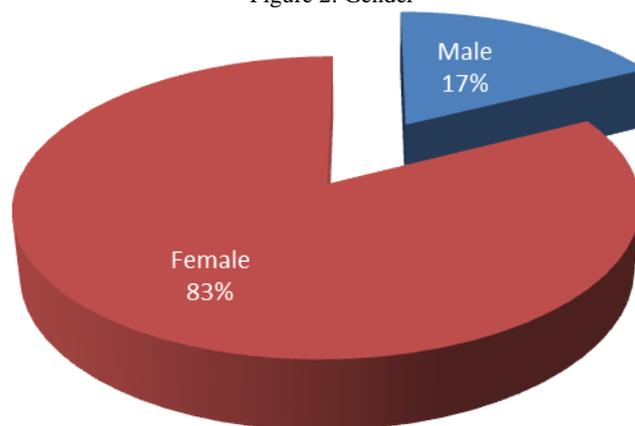


Table 2 summarizes students' perception on ICT. Students' feedback was simplified by merging the scale 1 to 4 into 2 classes (agree and disagree), where 3 and 4 were grouped as agree and 1 and 2 as disagree. The finding shows that most of the students have very positive perception toward ICT. Students agree that ICT is useful for their study and their daily activities. This finding also reflects that students are also aware that ICT is important for their future career.

Table 2: Student Perception

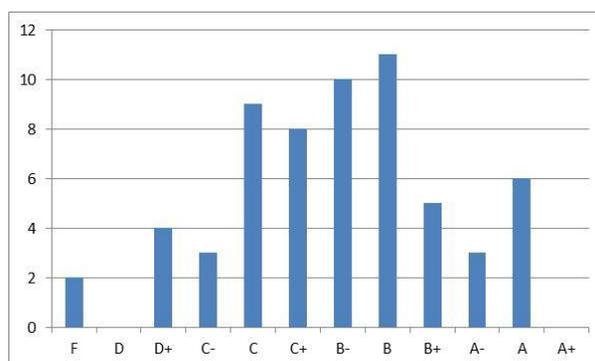
No.	Items	Agree (%)	Disagree (%)
1.	ICT enhances my learning.	100	0
2.	ICT provides better learning experiences.	100	0
3.	I would work harder if I could use ICT.	90.48	9.52
4.	I learn more from ICT than I do from books.	76.19	23.81
5.	ICT is useful in dissemination of information.	96.83	3.17
6.	ICT makes the course more interesting.	96.83	3.17
7.	ICT skill is worthwhile.	95.24	4.76
8.	ICT gives opportunity to learn more.	98.41	1.59
9.	I won't have anything to do with ICT.	9.52	90.48
10.	I have a phobia for ICT equipment.	7.94	92.06
11.	ICT can't address the needs of the university system.	17.46	82.54
12.	The state of facilities discourages me from using ICT	26.98	73.02

Table 3 summarizes the score obtained by the students based on the task that they have completed. Two students fail the test while the rest passes at minimum grade D+. Most of the students appear to score at grade C, C+, B- and B. Six students obtain grade A and three obtain A-. The score distributions are visualized as graph as shown in Figure 3.

Table 3: Score for the task

Minimum Score	Grade	Frequency	Percentage
0	F	2	3.28
34.45	D	0	0.00
39.45	D+	4	6.56
44.45	C-	3	4.92
49.45	C	9	14.75
54.45	C+	8	13.11
59.45	B-	10	16.39
64.45	B	11	18.03
69.45	B+	5	8.20
74.45	A-	3	4.92
79.45	A	6	9.84
89.45	A+	0	0.00
	TOTAL	61	100

Figure 3: Graph Score Distribution



Conclusion

The findings show that students have an awareness of the importance of ICT towards the success of their study and future career. However, assessment of the current students' e-skills shows that their e-skill is still at the average level. Students should give more effort to learn and improve their ICT competencies. Critically, the skills need to be enhanced before graduating as to prepare themselves for the working environment. At the same time, the university need to take some more initiative to encourage students to apply IT knowledge and skills while taking the courses.

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