

COMPUTER USAGE AND PERCEPTIONS AMONG ACCOUNTING STUDENTS: A SURVEY IN A PUBLIC UNIVERSITY

Noor Ismawati Jaafar

ABSTRAK

Satu kajian telah dijalankan ke atas 288 orang pelajar jurusan perakaunan di Universiti Malaya untuk mengenal pasti arah aliran penggunaan komputer di kalangan bakal graduan perakaunan. Kajian ini yang menerangkan tahap penggunaan komputer pada masa kini di kalangan pelajar perakaunan di dalam negeri dan juga tanggapan mereka ke atas komputer dapat memberikan gambaran sama ada aka un tan yang dilahirkan nanti mempunyai kemahiran teknologi maklumat dan komunikasi (ICT) seperti dikehendaki oleh majikan. Kemahiran ini dapat membantu mereka menghadapi cabaran mencari pekerjaan dan juga bersaing dengan graduan luar negara. Malaysia yang sedang menuju ke arah ekonomi yang berasaskan pengetahuan (K-economy) memerlukan generasi yang celik ICT. Kajian ini menggambarkan kesediaan para bakal graduan merealisasikan cabaran tersebut dan juga menunjukkan sama ada usaha Kerajaan dapat memenuhi matlamat keseluruhan agenda pendidikan dan teknologi maklumat negara.

INTRODUCTION

The importance of ICT and computers in today's environment has captured the attention of people from all walks of life. Moreover, the emerging trends of internetworked organizations have placed ICT as an important component and its application to organizational success is undeniable. Computer usage is almost unavoidable in our daily lives. Its impact is felt in almost every aspect of society including the increasing demand of its familiarity in the workplace. Future employees are required to attain a certain level of ICT literacy before entering the job market. Davis (1997) reported that core computer skills are very important to the employability of recent college graduates. However, a computer background is among the qualifications found lacking in accounting graduates especially in the entry-level accountants as revealed by Oliver, Que, Farinacci and Garland (1996).

Efforts have been made at all educational levels to ensure our students are prepared for the challenges of the ICT revolution and the intense competition for success (Nor Azan et al., 2000). The Malaysian Government through its Eighth Malaysia Plan has outlined a few policies and strategies to increase ICT and computer usage among students at all educational levels. This includes the Smart School application, which is a part of seven flagship applications of the Multimedia Super Corridor (MSC).

The pilot Smart Schools project worth RM300 million is targeted for implementation in 90 rural and suburban schools by the end of 2002. One of the objectives is to produce a thinking and technologically literate workforce, which is an important foundation

for a knowledge-based economy (MDC, 2002). In addition, the Ministry of Education has recently proposed that ICT would be an elective course offered in schools by 2003. However, the Government's efforts will not succeed unless educational institutions take the necessary actions and provide infrastructure towards producing computer literate students.

Undoubtedly, schools and other institutions of higher learning are responsible for providing adequate ICT training and knowledge to their students. Nevertheless, a number of studies in the United Kingdom and the United States have revealed that higher educational institutions have failed to prepare students with necessary skills to compete in an increasingly global economy (Buckley, Peach, & Wietzel, 1989; Hotch, 1992; Oliver et al., 1996; Parry, Ruthford, & Merrier, 1996). There is also a trend of mismatch between industry requirements and the skills students acquire in educational institutions especially in the developing countries (Oliver et al., 1996). Malaysian public universities among the other higher education institutions, too, have been blamed in not meeting the nation's aspiration of producing well-prepared graduates. These universities have been criticized for not incorporating IT among other languages and interpersonal skills as compulsory subjects (The Star, 2002).

As such, this study has been done to indicate appropriate programs and efforts needed to ensure good quality and continuous employability of these local accounting students. This is especially important for them to compete in the information age with the foreign accounting students. Therefore, this study has been conducted to achieve the following objectives:

1. To examine the computer usage trends among local accounting students.
2. To identify the characteristics of students with high and low computer usage.
3. To examine the local accounting students' perceptions towards the use of computers.

LITERATURE REVIEW

Malaysia is currently transforming into a knowledge-based economy where ICT is part of the National Information Technology Agenda (NITA). The NITA vision is to transform Malaysian society into an information society through ICT, then to a knowledge society and finally to a value-based knowledge society by 2020. NITA focuses not only on developing people, infrastructure and applications to create value, but also on providing equity and access to all Malaysians. Realizing the importance of ICT in economic growth, the Government, through the Eighth Malaysia Plan, allocated a total of RM5.1 billion for various initiatives to facilitate greater adoption and diffusion of ICT in business and industry, as shown in Table 1. An important aspect of ICT development in Malaysia is the Smart School where one of the objectives is to produce a thinking and technologically literate workforce. At the national level, the Ministry of Education has announced that all schools would be equipped with computer laboratories by 2003 to fulfil the Smart School project aspirations (Ling, 2002).

Table 1
Development Allocation for ICT-Related Programs and Projects, 2001- 2005

Programs/Projects	Allocation (RM million)	%
Flagship Application	1,824.9	35.4
E-Government	434.8	
Smart Schools	401.1	
Telehealth	400.0	
Multi Purpose Card	418.1	
R & D Cluster	1.9	
Cross Flagship	169.0	
Computerization	1,641.8	31.8
Research & Development	300.0	5.8
Bridging the Digital Divide	1,098.0	21.3
Infodesa	30.2	
Internet Desa	3.0	
Universal Service Provision	119.8	
Computer Infrastructure for Rural Schools	945.0	
Local Content	10.0	0.2
Others	284.4	5.5
TOTAL	5,159.1	100.0

Source: Eighth Malaysia Plan (2001)

Several studies have also been done in Malaysia relating to computer usage among accounting graduates. Noor Azizi, Faisol, Kamarul Bahrain and Rosmawati (2001) found that accounting graduates in Malaysia are equipped with adequate computer knowledge and skills. However, from the practitioners perspective, local accounting graduates are perceived as less K'T or computer savvy as compared to the foreign graduates (Foong, 2002). This may affect the former's employability due to their lack of non-technical skills such as communications skills, which are as important as their accounting technical skills.

Previous studies on computer usage have been done from various perspectives. In terms of gender differences it was found that males show more interest than females in computers, know more about information technology and use it more than females (Badagliacco, 1990; Reinen & Plomp, 1997). Similarly, a study carried out in a Malaysian university found a significant difference in computer usage level between male and female students where males were found to be more computer literate and use computers more than females (Nor Azan et al., 2000). Harrison and Rainer (1992) in their study on individual differences in computer skills found that the older people are the lower their computing skill. Other researchers however found that age was a negligible variable in their studies (Harris & Grandgenett, 1996; Kubeck, Miller-Albrecht, & Murphy, 1999).

Parents' socioeconomic status (SES) affects the students' educational expectation and achievement. Among the factors were occupation, income and education of parents. This was reported by Serbin, Zelkowitz, Doyle, Gold and Wheaton (1990) who found that SES was the major factor in predicting children's performance including the ability to use computers. SES was also confirmed to have significant influence on students' attitudes towards computers (Shashaani & Khalili, 2001). A study conducted in Malaysia found

that ownership and previous experience of computer use does affect computer literacy and usage among students (Nor Azan et al., 2000).

The extent of computer usage among individuals is also influenced by their perceptions towards computers. Ease of use refers to the degree to which the user expects the system to be user friendly. If a system is easy to use, it requires less effort on the user's part. As such, it is more likely that it will be adopted and used. Conversely, if a system requires extra expertise or skills to operate, it is less likely to be used. Previous research has generally confirmed that perceived ease of use can directly influence computer usage (Davis, 1989).

Another perception of computer usage is in terms of enjoyment which can be defined as the extent to which the activity of using the computer is perceived as enjoyable. Individuals who experience immediate pleasure and joy from computer use will be more likely to use computers extensively. Perceived enjoyment has significant effects on intention to use a particular application (Davis, Bagozzi, & Warshaw, 1992). Individuals will use a computer only if they perceive it will help them to achieve the desired task performance (Thompson, 2001). Previous studies show perceived usefulness has strong direct effects on and is positively correlated to system usage (Adams, Nelson, & Todd, 1992; Igbaria & Ivari, 1995).

FRAMEWORK OF STUDY

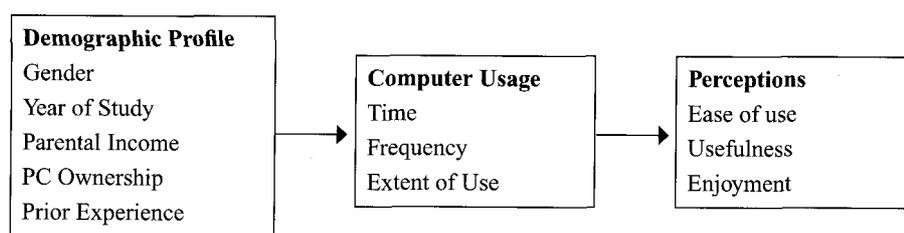


Figure 1. Framework of study

From the available literature on computer usage and perceptions, a framework was established. Figure 1 shows the framework to be used in the study. It will be used as a basis of discussion in the subsequent section of this paper.

METHODOLOGY

Sampling Method and Survey Instrument

Some 100 students each from Year 1, 2, 3, and 4 of the University of Malaya Accounting program were identified during Semester 1 of the 2002/2003 course registration. This made up a total of 400 students in the sample. The study was conducted using the survey method. Self-administered questionnaires were distributed to the students during lectures of the program core courses. The questionnaires were divided into three main sections. Section A captured the students' profile; Section B gathered data on computer usage; and Section C acquired data on perceptions of the computer in terms of ease of use, usefulness and enjoyment.

In this study, computer usage was measured using three measures previously used by Igbaria, Livari & Maragahh (1995) modified for the local environment. The measures were daily usage, weekly usage and extent of usage related to students' activities. Students were asked to rate their usage level on eight activities using a five-point Likert scale ranging from "1 = do not use at all" to "5 = use a lot". The total score of each student was then regrouped into two categories namely high usage and low usage. In addition, students were asked to indicate the various types of ICT applications they would normally use in their activities.

The students' perceptions were measured using scales used by Davis (1989) and Igbaria et al. (1995). In order to measure perceptions towards computer ease of use, students were asked to indicate their agreement or disagreement with several statements using a five-point Likert scale ranging from "1 = strongly disagree" to "5 = strongly agree". The statements are: learning to use computers would be easy for me; I would find it easy to use computers to do what I want to do; it would be easy for me to become skilful at using computers; and, I would find the computers easy to use.

Similarly, in measuring perception on usefulness, students were asked to indicate their agreement or disagreement with several statements using a five-point Likert scale ranging from "1 = strongly disagree" to "5 = strongly agree". The statements are: using computers improves my work performance; using computers increases my work productivity; I find computers useful for my work; using computers enhances my effectiveness in my work as a student; and, using computers provides me with information that would lead to better decisions.

Seven pairs of seven-point semantic differential scale adapted from Igbaria et al. (1995) were used to measure student perception of computer enjoyment. The students were asked how they feel about using the computer by choosing one word from each pair: fun-frustrating, pleasant-unpleasant, positive-negative, pleasurable-painful, exciting-dull, foolish-wise and enjoyable-unenjoyable.

Data Collection

The respondents were given a week to complete and return their questionnaires. The responses were either self-collected during program core course lectures or returned by hand to the researcher. At the end of the period, only 288 questionnaires were received and subsequently used in the study. This represented a 72.0% response rate.

Data Analysis

The survey data were analyzed using the statistical software SPSS Version 10.0. Frequency distribution was used to analyze the accounting students' profile, their computer usage level and perceptions of computers. Cross-tabulation was used to analyze the relationship between computer usage and student profile. Similarly, cross-tabulations were used to analyze the relationship between level of computer usage and student perceptions.

RESULTS

This section presents the survey findings. It starts with a description of the general characteristics of the respondents. This is followed by examination of students' computer usage patterns. Comparisons are made between groups of varying computer usage levels. Finally, the students' perceptions of computers from the viewpoint of ease of use, usefulness and enjoyment are examined.

Accounting Students' Profile

Table 2 illustrates the profile of the respondents. It was found that the majority of the accounting students were females (78.8%). More than half of the respondents were in the intermediate stage of the program as indicated by the high percentages of 35.4% each from the Year Two and Year Three students. The majority of students were from the urban areas of Malaysia with family income of up to RM5,000 a month (89.2%). In terms of computer ownership, 72.6% of the students indicated having their own computers. The majority (98.3%) also indicated having previous experience of computer use.

Computer Usage

In terms of computer daily usage (Figure 2) more than half of respondents (50.2%) spend 1-2 hours working on a computer for various purposes while only 3.2% of them indicated spending more than 4 hours on computers daily. The majority (68.6%) spend between 2 to 4 times using computers in a week while only 7.1 % of them used computers more than 7 times a week (Figure 3).

Table 2
Profile of Accounting Students

Profile	Categories	Frequency (%)
Sex	Male	61 (21.2)
	Female	227 (78.8)
Year	1	58 (20.1)
	2	102 (35.4)
	3	102 (35.4)
	4	26 (9.1)
Parents Income	Up to RM5,000	257 (89.2)
	> RM5,000	31 (10.8)
PC Ownership	Yes	209 (72.6)
	No	79 (27.4)
Prior PC Experience	Yes	283 (98.3)
	No	5 (1.7)

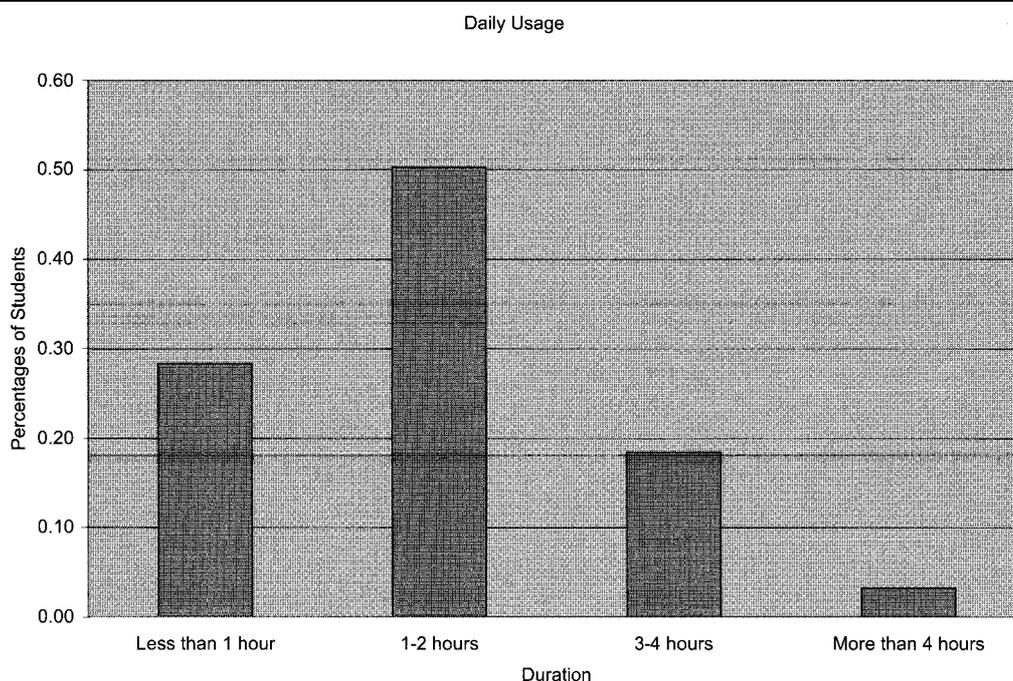


Figure 2. Daily usage of computers by accounting students

The majority of these local accounting students use computers for their assignments and communications using the Internet. Figure 4 shows that most of them used computers for their assignments (68.1%) followed by web surfing (61.1%), communication (44.4%), searching for other resources (41.0%) and searching for academic resources (40.3%). On the other hand, computer usage for activities like online purchasing and programming among these students was found to be very low. Some 91.7% of them showed little usage of online purchasing. Similarly, 72.2% of them indicated little usage of computers in programming.

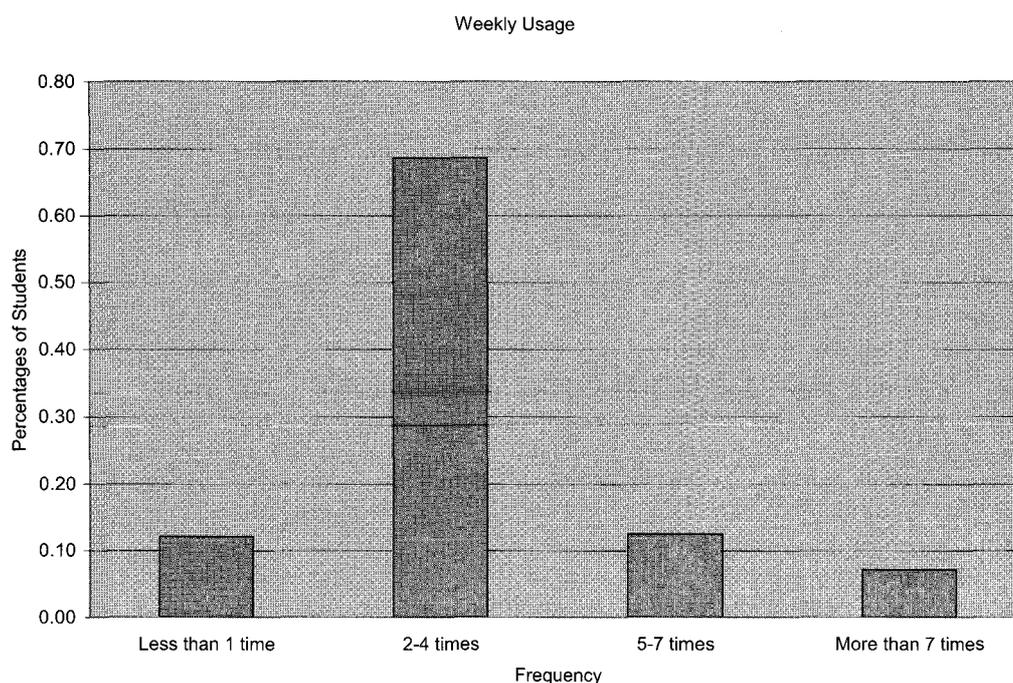


Figure 3. Weekly usage of computers by accounting students

Scores for each student were accumulated and the students were regrouped into two categories, namely the high computer usage and low computer usage groups. The results of the study revealed that 60.4% of the students are in the low usage category while the remaining 39.6% fall into the high usage category (Table 3).

Table 3
Computer Usage of Computers by Accounting Students

Usage	Frequency	Percent (%)
Low	174	60.4
High	114	39.6
Total	288	100.0

Further analyses of cross tabulations were carried out to determine the characteristics of these two groups. Only year of study was found to be significant in determining the extent of computer usage. In Table 4, the high usage students are from Year Three (57.0%) followed by Year Two (24.6%). It can be concluded that the extent of computer usage is influenced by students' age because, in general, the third year students are older than those in the first and second years. In addition, the work assigned for the more senior students require more discussions, group work and class presentations. As such, these students are indirectly encouraged to use more computer applications for their assignments.

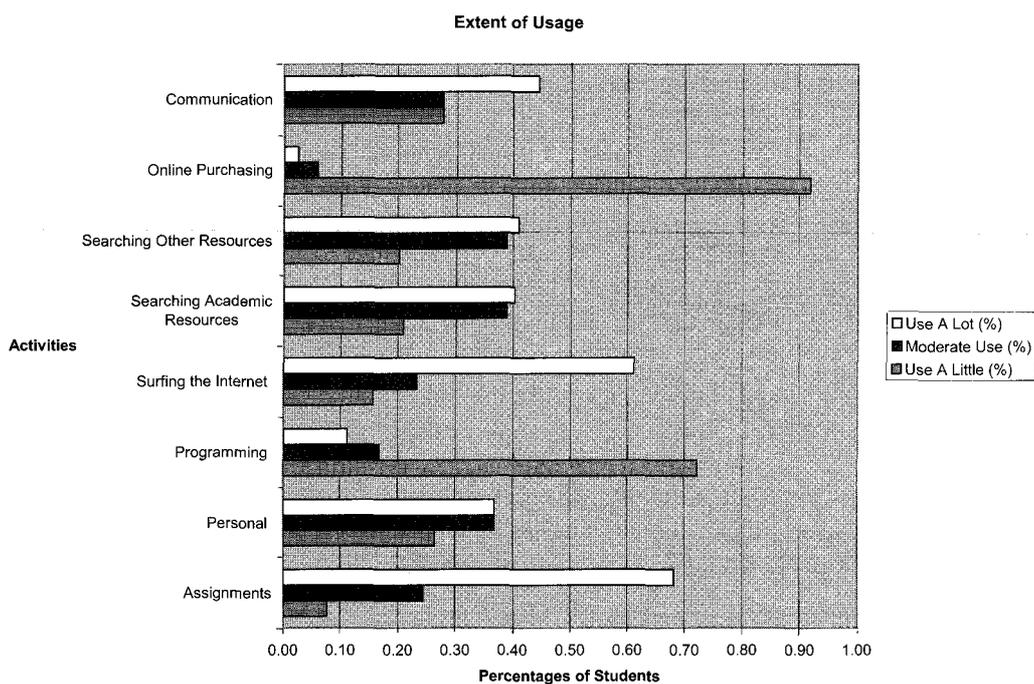


Figure 4. Extent of computer usage in accounting students' activities

Table 4
Cross Tabulation Between Year and Computer Usage

Year	Low Usage	High Usage	Total
Year One	29.3%	6.1%	20.1%
Year Two	42.5%	24.6%	35.4%
Year Three	21.3%	57.0%	35.4%
Year Four	6.9%	12.3%	9.1%
Total	60.4%	39.6%	100.0%
Chi-square (χ^2)	= 0.000		

Perceptions of Computers

Scores of Likert-scales of the students were classified into two categories of low and high to derive their general perceptions of computers. The study found that more than half of accounting students perceived computers as not easy to use, not very useful and not a source of much enjoyment (Table 5).

Table 5
Categories of Perceptions

Category	Perception	Frequency	Percentages (%)
Ease of Use	Low	173	60.1
	High	115	39.9
Usefulness	Low	159	55.2
	High	129	44.8
Enjoyment	Low (Negative)	147	51.0
	High (Positive)	141	49.0

Cross tabulations were done to find significant differences between the various perceptions of computers and computer usage levels. This is shown in Table 6. It was found that those who use computers extensively do have good perceptions of computers. There is a strong association between high usage and positive feelings towards using computers. Similarly, there is also significant association between high usage and usefulness, and high usage with perceived ease of use.

Table 6
Cross Tabulations Between Perceptions and Computer Usage

Perception	Low Usage	High Usage	Total
Negative Feeling	63.2%	32.5%	51.0%
Positive Feeling	36.8%	67.5%	49.0%
			100.0%
Chi-square (χ^2)	= 0.000*		
Low Usefulness	61.5%	45.6%	55.2%
High Usefulness	38.5%	54.4%	44.8%
			100.0%
Chi-square (χ^2)	= 0.008*		
Low Ease of Use	74.7%	37.7%	60.1%
High Ease of Use	25.3%	62.3%	39.9%
			100.0%
Chi-square (χ^2)	= 0.000*		

* Statistically significant differences ($p < 0.05$)

DISCUSSION AND CONCLUSION

This study found that the local accounting students show a low level of computer usage. The fact that they are spending only 1-2 hours on computers in a day and between 2-4 times in a week shows that these students spend very little time on computers. In fact, they merely rely on the required credit hours of courses in the program. This can be partly

attributed to the limited computer facilities offered by the faculty. Although there are currently three computer laboratories, only one is open outside classroom hours. Besides that, currently students are required to attend compulsory courses which incorporate the teaching of software applications only once a week.

Another explanation is the students' attitude. Local accounting students have generally low perceptions of computers despite the fact that 72.6% of them do have PCs. They do not feel that computers are enjoyable and easy to use. They also find computers are not useful in their work as university students and this indirectly affects their usage level. More training and awareness programs are needed to educate these students on the importance of computer literacy. Close cooperation between ICT industry practitioners and academicians is required to ensure these students keep up with the latest technology. Accounting practitioners can give their suggestions and expectations of the skills they seek in future employees. However, before executing any program, the basic infrastructure must be in place. These include computer labs, high speed Internet connection and adequate technical support teams.

Students do use computers in their daily activities although the level is still low. They are not using computers for online purchasing and this could be due to the requirement for personal information such as credit card number which they do not possess. The majority of respondents use computers for general purposes and communications; their low involvement in programming indicates they are not interested in the more difficult activities which require extra computer skills. Although the accounting students are exposed to programming in their third year of study, the findings indirectly show they do not regard programming as important as other courses such as word processing which is introduced earlier in the program.

It is suggested that early exposure to computers be given before these students enter university. In fact, preschools are introducing the computer as one of the subjects in their curriculum. Some schools have also introduced computers in line with the Government's move to implement ICT as an elective in 305 schools nationwide by 2005 (*Computimes*, 15 July 2002). These moves will require teachers to be more proactive in using ICT in line with the Smart School project aspiration. But teachers must first be equipped with adequate ICT knowledge and skills. To date, only 3,800 teachers have been trained in the Smart School concept (Ling, 2002).

One way to increase computer usage among university students is to encourage computer ownership. A special scheme whereby students can buy computers through minimal monthly instalments is one solution worth considering. Another solution is a rental or lease arrangement with option to purchase the computers upon graduation.

The Government's "one home one computer" campaign implemented through the Employees Provident Fund (EPF) scheme has helped reduce the digital divide between the lower and high income earning families in Malaysia. The Eighth Malaysia Plan reported that since its inception in October 1999, some 245,640 applications have been received by the EPF scheme, out of which 199,293 were approved. This involved RM665.3 million of ICT expenditure. The Eighth Malaysia Plan also reported a rise in personal computer ownership, from 610,000 in 1995 to 2.2 million in 2000.

This study shows that local accounting students lack computer skills and are not comfortable working with computers. This will affect their employability especially when employers are seeking extra skills in future employees. For example, accountants are

required to be proficient not only in spreadsheet software but also multimedia presentation tools. If local accounting students do not catch up with technological advancement, they will lose out to the foreign university graduates who are generally perceived as being more computer savvy.

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