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INTERNET USE AMONGST SECONDARY SCHOOL STUDENTS IN KUALA LUMPUR, MALAYSIA

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ABSTRACT

This study identifies the pattern of Internet use among 608 upper secondary science students from fourteen schools in Kuala Lumpur, Malaysia. All schools have computers, out of which 9 have Internet facilities and 3 Internet terminals are located in the school resource centres. About 51.5% of respondent used the Internet. The main reasons for non-use are lack of skill and non-availability. The users mainly accessed the Net from their homes and acquired Internet skills by self-teaching or learning from friends. Slightly over 70% of Net users spent less than 5 hours a week on various functions, but few used it for study-related activities. The average time spent on the Internet was 4.89 hours per week. Most of the Net users (91.4%) explored the World Wide Web while 75.4% used E-mail, 52.1% used IRC or ICQ, 15.7% joined Newsgroups, 2.2% used it for downloading, and 0.6% used it for playing online games. Major problems faced were "lack of skills" and "lack of time". The Internet was perceived to be a rich information reservoir that provides fast and efficient access to information. The majority believed that Internet did not affect their learning process, with 20.7% reporting a positive effect and 4.5% a negative effect. There were significant relationships between the use of Internet with gender, English grade, parents' level of education, parents' income, availability of Internet in school, and locality of Internet in school.

Keywords: Internet use; Information sources; Secondary schools; School students; Information literate; Kuala Lumpur.

INTRODUCTION

Computers in Malaysian Schools

In the 1980s, computer clubs in schools provided opportunities for teachers and schools to be familiar with personal computers. In 1981, the La Salle Secondary School in Petaling Jaya, Selangor set up the first computer club in Malaysia. Many schools follow suite subsequently.

In 1989, a Joint council of the Ministry of Education (MOE) and the Malaysian Institute of Microelectronics System (MIMOS) proposed the computer-in-education (CIE) policy. It recommended the shift from teaching computer literacy to the integration of computers in the teaching-learning process across the curriculum. The following year witnessed the launching of the Atom-1 PC compatibles, the personal computer designed and produced locally to provide for a

cost-effective and functional computer use in the schools. The Computer Intergrated Learning System (ComIL), a software written in the Malay language was launced on August 8, 1991 to be used as the basic tool to generate educational materials tailored to local curriculum needs (Shukor, 1992). In 1992, sixty schools were equipped with computers costing RM4.3 million as part of the CIE pilot project. Each of the schools was equipped with twenty Atom-1 PCs that were networked with a server. In this project, a new computer literacy project syllabus was to be introduced to secondary one and two students. In 1996, the MOE announced the Smart Schools Project. Ninety schools are expected to receive thirty-eight units of computers each in 1999 under this project. The computers are to be located in the school's administration office, teachers' room, the library and computer laboratory.

Internet in Malaysian Schools

On 14 June 1994, the Ministry of Education announced another joint council project called the National Education Network or Jaringan Pendidikan (Zulkifly, 1994). The project involves fifteen secondary schools nation-wide linked to the Internet via Jaring, the Malaysian gateway to the international computer network. The main objective of this project is to provide opportunities for teachers and students to communicate, access and share a variety of information through the use of computers (KPM, 1994). Another objective is to enable secondary school students to communicate and exchange information with students from other parts of the world via computers, hence uplifting the standard of education in Malaysia compatible with those in developed countries. The network would also provide access to information from government departments and research centres. The National Education Network is also viewed as a tool for Malaysian students to acquire the necessary skills to meet the need of future workforce in the era of information technology. Through this network the Internet was introduced to many secondary schools, both in the urban and rural settings. Many schools have sourced their own funding to equip their schools with Internet facilities.

With the rapid advancement of information technology and a decline in the price of personal computers, information sources have become affordable to students both in printed form and online. The question is, are Malaysian students using the online sources available to them? Are they information literate? According to Tenopir and King (1996), only those who are information literate will thrive and succeed. Doyle (1994) stressed that the "*individual of the 21st century must have the ability to access information, evaluate, and use information from a variety of sources*" in order to be considered information literate. These sources include traditional paper-based information as well as digital information.

AIMS AND OBJECTIVES

With the MOE efforts, tax incentives and various advantages offered by the Internet, it is expected that Malaysian students would exploit this media for personal and educational purposes. This study aims to find out the patterns of Internet use amongst upper secondary

science students, especially how the Internet is used for study or school-related activities. The effects of the Internet on the students' learning process, the usefulness of the Net and problems associated with its use, as perceived by the students, are also investigated.

METHODOLOGY

This study has chosen the schools in Kuala Lumpur for three reasons. Firstly, the infrastructure for Internet connections is available throughout the city and more likely to be available in respondents' homes. Secondly, the schools under study included those that have already been provided with Internet connections as well as those that are still in the planning stage to establish connections. Thirdly, there are innumerable cyber cafes scattered within the city, which are available for student's use.

The population of this study comprises 2,274 students from all form four and six science students from fourteen schools in Kuala Lumpur. A stratified random sample of 608 students answered the questionnaire which constitute 219 male and 139 female students from the fourth form and 100 male and 150 female respondents from the sixth form. This figure constituted 26.74% of the population. The questionnaire was distributed personally to the students during class hours and collected at the end of a 40 minute period, resulting in a 100% response rate. The items that have not been answered fully and correctly were treated as missing data. The calculations of percentages were based on the actual responses of each item listed in the questionnaire.

RESULTS AND DISCUSSIONS

The availability of computer and Internet facilities in school and at home is expected to influence the use of Internet by students.

Computers and Internet Facilities in School

All the fourteen schools have computer facilities, the least being two units while at the other extreme, one school has 81 units (Table 1). The average student-computer ratio is 72 : 1. Six schools have a ratio below this average value. The highest student-computer ratio being 18 : 1 and the lowest 633 : 1.

Only nine schools are connected to the Internet. The number of computers that are actually networked to the Internet is very small. Four out of nine schools provided only one terminal for browsing. Three of the schools have two units of computers each for accessing the Net. One school has five terminals, while another has 36 terminals. This extraordinarily large number is attributed to a sponsored pilot smart school project launched in 1997.

Location of the Internet terminals vary from school to school. The locations identified are the school resource centre, the computer room, a special room for Internet use, rooms used by the school's computer clubs, the school office and the principal's office.

Table 1: Number of Computers in Schools

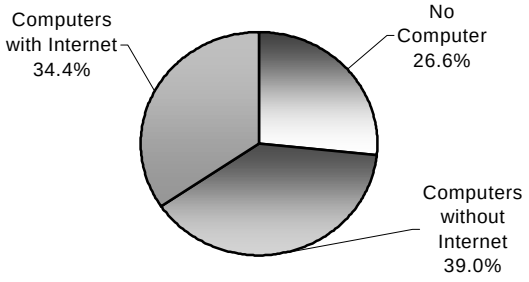
	School	No. of Computers	Student : Computer	Internet Availability	Access* Points	No. of Net Computers
1.	A	2	633 : 1	No	-	-
2.	B	2	620 : 1	No	-	-
3.	C	4	603 : 1	Yes	Principal	1
4.	D	5	368 : 1	No	-	-
5.	E	6	236 : 1	Yes	SRC	1
6.	F	7	214 : 1	Yes	Internet	5
7.	G	8	158 : 1	No	-	-
8.	H	11	135 : 1	Yes	SRC	2
9.	I	28	56 : 1	No	-	-
10.	J	29	38 : 1	Yes	Com	1
11.	K	31	48 : 1	Yes	SRC, Com	2
12.	L	41	35 : 1	Yes	Internet	36
13.	M	66	18 : 1	Yes	Com	1
14.	N	81	37 : 1	Yes	Admin	2

* Admin = Administrative Office; Com = Computer Club's Room;
Internet = Internet Room; Principal = Principal's Office;
SRC = School Resource Centre.

Computers and Internet at Home

Among the 608 respondents, 446 (73.4%) had computers at home. However, 237 respondents (39.0%) had computers which were not connected to the Internet while the other 209 (34.4%) could access the Net (Figure 1). The results indicate that computer ownership was quite common, and slightly more than one-third of the respondents had Internet access from their home.

Figure 1: Computer Ownership and Internet Access



Use of computers

The results indicate that 565 respondents (92.9%) use the computer and only 43 (7.1%) are non-users. For those who use computers, 35 (5.7%) first started using it before 1990 (Figure 2). The number of new computer users has increased over the 1990s, and peaked in 1997 with 80 new users.

Use of Internet

A total of 313 respondents (51.5%) indicated that they use the Internet, while 295 (48.5%) said otherwise. Figure 3 depicts the year when respondents started using the Internet. Five respondents first accessed the Net in 1993. The number of new users increased steadily until 1995 and peaked to 148 in 1997.

Figure 2: Number of New Computer Users by Year

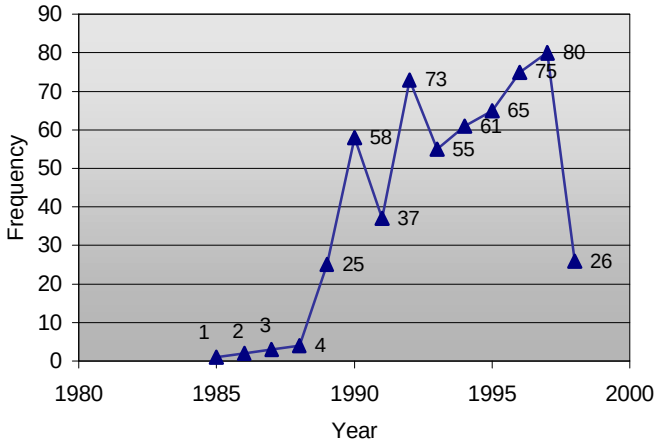
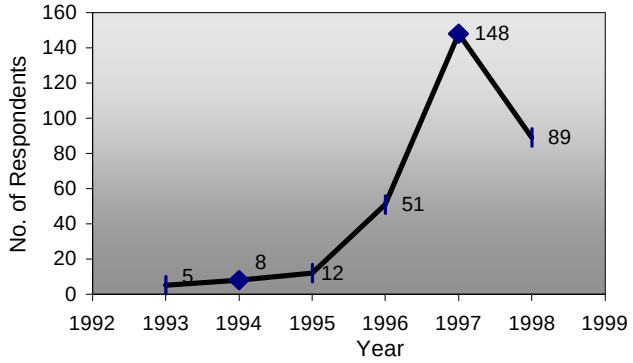


Figure 3: Number of New Internet Users by Year



Reason for Not Using the Internet

When queried as to the reason for not using the Internet, the most common reason quoted by non-users was "do not know how to use it". Table 2 shows the various reasons reported and the percentages were based on the number of Internet non-users, that is, 295 only. "Not available at home" was also a hindrance to Internet use. "Not available in school", "do not have any reason to use it', "do not have time to use it", "inconvenience" and "payment of fees" were other reasons mentioned.

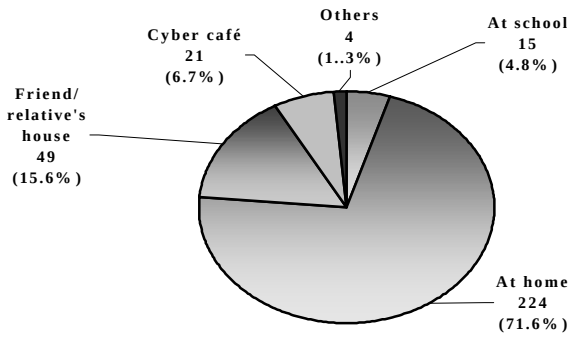
Table 2: Reasons Why Respondents do not Use the Internet

Reason	Frequency	%
Do not know how to use it.	107	36.3
Not available at home.	67	22.7
Not available in school.	34	11.5
No reason to use it.	32	10.8
Do not have time to use it.	25	8.5
Available but inconvenient to use in school	25	8.5
Available in school, but must pay a fee	5	1.7
Total	**295**	**100.0**

Places Used to Access the Internet

Most of the respondents primarily used the Internet at home. Figure 4 shows that as many as 224 out of 313 respondents gave this response. The second most important place for these respondents was friends' or relatives' houses (49 respondents). The data suggests that school's Internet facility was under utilised when compared to cyber cafes. Other places where respondents use the Internet were parents' offices and libraries.

Figure 4: Places Where Students Access the Internet



Method of Acquiring Internet Skills

The respondents learned to use the Internet by themselves, learning from friends, teachers, fathers and siblings, or attending training programmes. Table 3 indicates that 147 respondents (47.0%) learned through self-teaching, while 132 (42.1%) learned from friends. Only 19 respondents (6.1%) learned to use the Internet by attending training programmes. The role of teachers in this respect was even less significant, with only 8 respondents (2.6%) gaining the skill through their teachers. Very few respondents (7 or 2.2%) learned the use of Internet from their parents or siblings.

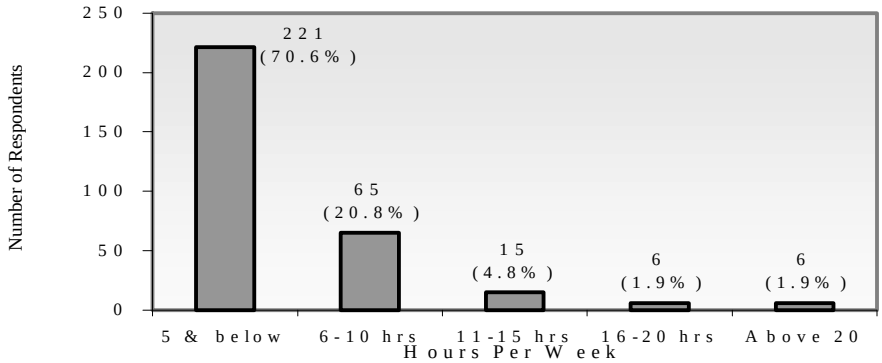
Table 3: Method of Acquiring Internet Skill

How	Frequency	%
Self-taught	147	47.0
From friends	132	42.1
From training programmes	19	6.1
From teachers	8	2.6
From father/siblings	7	2.2
Total	**313**	**100.0**

Time Spent on Internet

Figure 5 shows that 221 respondents (70.6%) spent five hours or less per week accessing the Internet. This works out to be less than one hour a day. Relatively very few respondents go on the Internet for more than 10 hours per week. Only fifteen (4.8%), six (1.9%) and six (1.9%) respondents respectively spent 11-15 hours, 16-20 hours and more than 20 hours per week on this superhighway. The respondents spent an average of 4.89 hours per week on Internet (Table 4).

Figure 5: Time Spent on Internet



Types of Internet Functions Usage

Table 4 shows the distribution of time spent on each of the Internet functions. The World Wide Web (WWW), e-mail, newsgroups and other functions were used. As many as 286 (91.4%) of those who used the Internet explored WWW. On an average, 2.18 hours per week were used for browsing, the highest among all functions. The standard deviation was 2.24 hours, and maximum time spent by respondents was 14 hours.

Frequency of Using the WWW

Very few respondents use the WWW everyday. Table 5 shows that, only 37 respondents (11.8%) searched the Web every day. The majority (116, 37.1%) accessed the Web more than once a week but not every day.

Table 4: Time Spent on Various Internet Functions

Function	No. of respondents	% of Net Users	Time spent per week (hours)		
			Mean	Std. deviation	Maximum
WWW	286	91.4	2.18	2.24	14.00
E-mail	236	75.4	0.84	1.13	12.00
Newsgroups	49	15.7	0.22	0.67	6.00
Others	172	55.0	1.65	2.88	22.00
Overall	**313**	**-**	**4.89**	**4.75**	**30.00**

Table 5: Frequency of Using the WWW

Frequency of Use	No. of respondents	%
Every Day	37	11.8
More than once a Week	116	37.1
Once a Week	73	23.3
> once a month but < once a week	60	19.2
Do not use	27	8.6
Total	**313**	**100.0**

Browsers / Search Engines Preferred

The majority of the Web users (199, 69.6%) used only one browser for surfing. The most popular Net browser used was Internet Explorer (195 respondents), closely followed by Netscape (179 respondents).

Although most of the Web users (174, 60.8%) keep to one single search engine, some do make use of two (80, 28.0%), three (24, 8.4%), or four (8, 2.8%) search engines for their tasks.

Yahoo! was the most popular search engine with 274 (95.8%) users (Figure 6). This was followed by Alta Vista, Infoseek, and Webcrawler respectively. Other search engines named by the respondents were Lycos (16), Cari (6), and Excite (2).

Types of Use Made of the WWW

Close to half (142, 49.7%) of those who searched the Web, used it for study-related activities. However, when asked to describe how WWW was used for this purpose, few provided the details. Table 6 contains some activities mentioned by more than one respondent. Many of the described searches were confined to general subject terms.

Figure 6: Preference for Search Engines

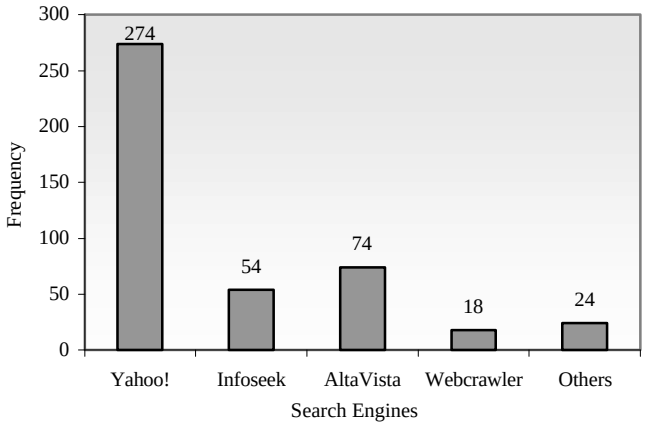


Table 6: Activities Using WWW for Information

Activities	Frequency
Assignments or Projects	64
Biography	5
Biology	5
English assignments	7
English Literature	2
General Paper	5
History	12

Web Sites Frequented

When requested to name three Web sites that were most frequently visited by them, most of the respondents failed to do so. This may be taken as an indication that the respondents are not familiar with the sites or that the respondents cannot remember the URL addresses of websites visited. Only 86 respondents could give 3 Web sites, while 23 could name 2, and 28 named only 1 Web site respectively. As the sites named were diverse, only those mentioned by five or more respondents are listed in Table 7. www.yahoo.com tops the lists of favorite sites, followed closely by www.hotmail.com.

Table 7: Some WWW Sites Frequented by Respondents

WWW Sites	Frequency
www.casio.com	5
www.fifa.com	5
www.geocities.com	22
www.hotmail.com	60
www.lyrics.com	6
www.mp3.com	9
www.microsoft.com	9
www.nba.com	7
www.sony.com	8
www.soccernet.com	7
www.yahoo.com	64

Frequency of E-Mail Usage

A total of 236 respondents (75.4%) used the e-mail function (Table 4). Relatively less time was spent on this function. The mean time was only 0.84 hours per week with a standard deviation of 1.27. Maximum time spent here was 12.00 hours per week. The frequency of use is presented in Table 8. Again it is observed that a relatively small percentage of the respondents accessed E-mail every day. The more common frequency was "more than once a week but not every day".

Table 8: Frequency of E-mail Usage

Frequency of Use	No. of respondents	%
Every day	40	12.8
More than once a week	94	30.0
Once a week	53	16.9
> Once a month but < once a week	49	15.7
Do not use	77	24.6
Total	**313**	**100.0**

Types of E-Mail Usage

Activities carried out by respondents using the e-mail facility are presented in Table 9. The common activities were, corresponding with parents, brothers and sisters, or friends (164, 69.5%), and with "key-pals" (141, 59.7%). Study-related discussion through e-mail was not popular, having only been applied by 25 respondents. Eight respondents (3.4%) used e-mail to receive regular updates on products.

On study-related activities using e-mail, 10 out of the 25 users did not specify the mode. Exchange of information with foreign friends, discussing mathematics, history and other homework, asking for information on subject assignments were examples of how the respondents used e-mail for study.

Table 9: E-mail Activities of Respondents

Activities	Frequency	%
Study-related	25	10.6
Corresponds with parents/siblings/friends	164	69.5
Corresponds with "key-pals"	141	59.7
Receive updates on products	8	3.4

Participation in Newsgroups

A very small number of respondents used the Newsgroups or Discussion Lists. Table 4 shows that only 49 respondents (15.7%) spent some time with this function. It had a mean value of 0.22 hours per week with a standard deviation of 0.67. Seven respondents used it everyday, 20 used it more than once a week but not everyday, 10 used it once a week, and 12 used it more than once a month but less than once a week.

Only 15 out of the 49 respondents used Newsgroups for study-related activities. Eleven of them did not give details on the types of assignments or topics discussed (Table 10). Two respondents mentioned that the Lists were used to gather information for English literature assignments.

Table 10: Study-related Activities using Newsgroups

Activities	Frequency
Class discussion on assignments	11
English Literature	2
Others (undetermined)	2
Total	**15**

Other Uses of the Internet

Beside those mentioned above, other Internet functions used by the respondents were Internet Relay Chat or IRC and I Seek You or ICQ (163 respondents), downloading (7 respondents), and playing games (2 respondents). A mean value of 1.65 hours per week for these purposes is shown in Table 4.

Availability of Internet Facilities and Internet Use

It is natural to assume that all students who have Internet connections in their homes would use the Net. Only 224 out of 237 Internet subscribers use it at home. Those respondents who do not use their own home facilities quoted "control by parents", and "lack of time" as reasons for non-use.

The effect of Internet availability in a school over its use by the students is analyzed. Table 11 shows the proportion of Net users and non-users in schools with and without Internet facilities. The availability of Internet in school seems to significantly influence the use of Internet by students. In schools without Internet connection, only 39.0% of the students used the Net and in schools with access to the Information Superhighway, a relatively higher percentage (58.0%) of the students used the Internet (χ^2 = 19.9, df. 1, $p<0.01$).

Table 11: Availability of Internet in School and Use of Internet (N=608)

		School Internet Facilities		
		Yes	**No**	**Total**
Use of Internet	Yes	231 (58.0%)	82 (39.0%)	313
	No	167 (42.0%)	128 (61.0%)	295
	Total	**398 (100.0%)**	**210 (100.0%)**	**608**

χ^2 = 19.9, df 1, sig. < 0.01

On further analysis, the results indicate a significant relationship between the location of the Internet terminals and its use by the students (χ^2 = 24.9, p≤ 0.01). The results indicate that the use of Internet is significantly related to the locality of Internet access.

Academic Background and Internet Use

The use of computers and Internet has always been associated with English proficiency and mathematical ability. These abilities, indicated by English language and mathematics scores of the students in the lower secondary assessment (PMR) examination, and its relationship with the use of Internet were investigated.

English Language Proficiency

Table 12 depicts the distribution of respondent's achievement in English language in relation to the use of Internet. The use of Internet is significantly related to student's English language ability. Among those who obtained 'A' in the PMR level English, 55.4% used the Internet when compared to only 39.3% and 38.7% of those who obtained 'B' and 'C' (χ^2 = 11.8, df 2, p ≤ 0.01). The results indicate that the students who obtain better grade in the English language are more likely to use the Internet.

Mathematical Ability

When the distribution of mathematics score were cross-tabulated with use of Internet, no significant relationship was indicated even though the student's performance in mathematics were generally high.

Student's Level of Education

Internet use by the students from two different levels of study (Form 4 and 6) were compared. Although a higher proportion of respondents from the fourth form (53.9%) use the Internet as compared to those in the sixth form (48.0%), no significant difference is indicated in the results obtained. The use of Internet amongst secondary science students is not related to level of education.

Table 12: English Language Achievement and Use of Internet

		English Language			
		A	**B**	**C**	**Total**
Use of Internet	Yes	255 (55.4%)	46 (39.3%)	12 (38.7%)	313
	No	205 (44.6%)	71 (60.7%)	19 (61.3%)	295
	Total	**460 (100.0%)**	**117 (100.0%)**	**31 (100.0%)**	**608**

χ^2 = 11.8, df 2, p ≤ 0.01

Demographic Variables and Internet Use

Parents' Education Level and Internet Use

Table 13 presents the distribution of highest educational level achieved by either the father or mother of respondents. The results indicate that, as the education level of parents becomes lower, the percentage of students who use the Internet decreases. The 7 respondents (1.2%) who answered that they did not know the academic qualification of their parents were not included in the analysis. The results significantly showed that children of parents who received higher education are more likely to be Internet users (χ^2 = 43.5, df 5, $p \leq 0.01$).

Total Family Income

Total family income includes both the father's and mother's earnings. The results indicate that as the family income decreases, the proportion of students who use the Internet also decreases (Table 14). As many as 220 respondents (36.2%) did not know their parents' income per month, and these responses were omitted in the analysis. The results significantly indicated that students from families with higher income are more likely to use the Internet (χ^2 = 27.9, df 5, $p \leq 0.01$).

Table 13: Highest Education Level of Parents and Use of Internet

		Highest Education Level*							
		Univ.	**HSC**	**MCE**	**LCE**	**Primary**	**No Ed.**	**DNK**	**Total**
Use Internet	Yes	59 (72.8%)	52 (67.5%)	119 (53.8%)	44 (35.5%)	36 (37.5%)	1 (50.0%)	2 (28.6%)	313
	No	22 (27.2%)	25 (32.5%)	102 (46.2%)	80 (64.5%)	60 (62.5%)	1 (50.0%)	5 (71.4%)	295
		81	**77**	**221**	**124**	**96**	**2**	**7**	**608**

χ^2 = 43.5, df 5, $p \leq 0.01$.

* Univ. = University; HSC = Higher School Certificate;
MCE = Malaysian Certificate of Education; LCE = Lower Certificate of Education;
Primary = Primary School; No Ed. = No Education; DNK = Do not know

Table 14: Total Family Income and Use of Internet

		Income Group*							
		1	**2**	**3**	**4**	**5**	**6**	**DNK**	**Total**
Use Internet	Yes	12 (92.3%)	3 (50.0%)	14 (63.6%)	33 (58.9%)	63 (52.1%)	59 (34.7%)	129 (58.6%)	313
	No	1 (7.7%)	3 (50.0%)	8 (36.4%)	23 (41.1%)	58 (47.9%)	111 (65.3%)	91 (41.4%)	295
		13	**6**	**22**	**56**	**121**	**170**	**220**	**608**

χ^2 = 43.5, df 5, $p \leq 0.01$.

*1. RM10,000 & Above; 2. RM8,000 to 9,999; 3. RM6,000 to 7,999;
4. RM4,000 to 5,999; 5. RM2,000 to 3,999; 6. Below RM2,000; DNK = Do Not know

Gender

Cross tabulation of gender and use of Internet shows that a higher fraction of boys (62.4%) used the Net compared to girls (39.4%) (Table 15). The results indicated a significant relationship between gender and use of Internet (χ^2 = 31.9, df 1, $p \leq 0.01$).

Problems in Using the Internet

Of those who used the Internet, 74 (23.6%) claimed that they did not face any major problem in using the Net. Table 16 displays the various problems related to the use of Internet faced by the respondents. Lack of skills (30.7%) topped the problem list, followed by the lack of time (20.8%). Other problems mentioned are "unable to get connected", "lack of funds", and "parental control".

Advantages and Disadvantages of Using Internet

To find out how respondents viewed the pros and cons of using the Internet as a source of information, the opinions of Net users were sought. Those who did not use Internet were excluded.

Table 15: Gender and Internet Use

		Gender		
		Male	**Female**	**Total**
Use of Internet	Yes	199 (62.4%)	114 (39.4%)	313
	No	120 (37.6%)	175 (60.6%)	295
	Total	**319 (100.0%)**	**289 (100.0%)**	**608**

χ^2 = 31.9, df 1, $p \leq 0.01$

Table 16: Problems When Using Internet

Problems	**Frequency**	**%**
No major problems	74	23.6
Lack of skills	96	30.7
Lack of time	65	20.8
Unable to get connected	38	12.1
Lack of funds	34	10.9
Parental control	6	1.9
Total	**313**	**100.0**

The advantages of using Internet to obtain information mentioned by the Internet users are listed in Table 17. The types of advantages comprises "Internet provides fast and efficient access to information" (100, 31.9%), "Internet contains lots of information" (51, 16.3%), "easy to get information" (47, 15.0%), "wide variety of information" (32, 10.2%), and "up-to-date information" (31,9.9%). Table 18 indicates that 38 respondents (12.1%) felt that the Internet offers no disadvantages, 81 (25.9%) felt that "using the Internet to obtain information is very costly", while another 58 (18.5%) expressed that "it is very time-consuming". Other disadvantages were "it has uncensored pornographic or criminal materials", "irrelevant information is quite often obtained", "it is difficult to find precisely the desired information", "reliability of information obtained is questionable", and "information obtained is insufficient".

Table 17: Advantages of Obtaining Information from Internet

Advantages	Frequency	%
Fast and efficient	100	31.9
Lots of information	51	16.3
Easy to get information	47	15.0
Wide variety of information	32	10.2
Up to date information	31	9.9
Convenient	17	5.4
Fun and entertaining	8	2.6
Can exchange view globally	8	2.6
Did not give any response	19	6.1
Total	**313**	**100.0**

Table 18. Disadvantages of Obtaining Information from Internet

Disadvantages	Frequency	%
No disadvantage	38	12.1
Costly	81	25.9
Time consuming	58	18.5
Uncensored pornography	41	13.1
Relevancy of information	31	9.9
Difficult to find desired information	28	8.9
Reliability of information	23	7.4
Insufficient information obtained	5	1.6
Did not give any response	8	2.6
Total	**313**	**100.0**

Perceived Effects of the Internet

The effects of Internet on the students as perceived by the respondents are presented in Table 19. A great majority of the respondents (234, 74.8%) expressed the opinion that the Internet did not affect one's learning process. Only 14 respondents (4.5%) considered the use of Internet very time consuming, thus reducing the time for study. The remaining respondents were of the opinion that Internet had a positive effect on their learning process. A total of 38 respondents (12.1%) said that Internet had increased their scope of knowledge and broadened their minds, 18 (5.7%) felt that it allows information to be gathered more efficiently, and 9 (2.9%) claimed that it had increased their English proficiency.

Table 20. Effects of Internet on Respondents

Effects	Frequency	%
No effect	234	74.8
Increase scope of knowledge	38	12.1
More efficient information gathering for study	18	5.7
Increase English proficiency	9	2.9
Waste time	14	4.5
Total	**313**	**100.0**

CONCLUSION

Although all schools in this study have computers, only 64.3% of the computers are connected to the Internet. This figure is unsatisfactory, especially for schools in Kuala Lumpur where telecommunication access is not a problem. Connectivity to the world is a basic amenity if the country wants to achieve globalization and provide world class education.

In addition, only three of the nine schools linked to the Information Superhighway locate Internet terminals in the school resource centres. Physical separation from the school resource centre will not be able to promote awareness among students that the Internet can supplement the traditional sources of information. Furthermore, as students who are reluctant users of traditional sources of information may be motivated to use the Internet (Olen, 1996), schools should take advantage of this interest in technology to provide an environment for learning the survival skills to meet the digital information waves.

Among the 295 non-Internet users, the most common reason quoted was lack of knowledge on its use. Shoemaker (1997) has also identified this inhibitor on the use of Internet by school students. This implies that to promote Internet use to potential users, training

needs to be provided. Formal training should be extended to current Internet users since 30.7% of the current users acknowledged that lack of Internet skills is also a major problem to them. Information skills as well as Internet skills should be taught to all students and intergrated in the school's curriculum. By doing this, the students can fully reap the full benefits of this information superstore to complement traditional sources in fulfilling their information needs.

Non-availability of Internet facilities at home and in school was quoted as a barrier to its use. This concurs with the findings of Gan (1998). It was obvious from the findings of this study that socio-economic background directly affects Internet availability at home and its use by the students. Since it is impossible to ensure Internet access to all homes, providing Internet access to all schools is a necessity. All students should be given the opportunities and access to this digital information tool of the 21st century, so that they will be able to match and meet the foreseeable needs of the country.

The study also shows that the locality where Internet terminals are placed is related to its usage. This agrees with the findings of earlier studies (Johnson, 1995; Johnson, 1997). Thus the school must plan well, providing easy and convenient access to students. It might be suggested that the best location is the school resource centre. This is based on the assumption that if an Internet terminal were placed in the school resource center, it would be most accessible to students and thus most used. Furthermore, it reinforces the notion that Internet is an information source.

"Time consuming" is a disadvantage quoted by 18.5% of the respondents, which concurs with Christensen (1997), Gan (1998) and Olen's (1996) observations. Many others (9.9%) have mentioned "relevancy of information retrieved" as a disadvantage of using the Internet. Olen (1996), Orr and Fankhauser (1996) have reported on the same weakness. Another disadvantage mentioned was "difficult to find desired information" (8.9%) which is also indicated in Levin's (1996) findings. A weakness of the Internet cited by 13.1% of the respondents was the presence of pornographic materials. This issue has been much debated (Ang and Nadarajah, 1996; Barron, 1996; Maddux, 1994; Rheingold, 1994; Truett, 1997). Other weaknesses cited are "cost" (25.9%), "reliability of information" (7.4%) and "incompleteness of the information". For all its disadvantages, the use of computers and especially the Internet to obtain and disseminate information is here to stay. It is therefore, the responsibility of the schools to equip future students with the appropriate facilities and necessary skills to be information literate in order to thrive and succeed in today's information-abundant and rapidly changing world.

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