A Study on Computer Usage among Secondary School Students: A Comparative Analysis on Hours Spent Using Computers without Activities Connecting to Internet and Hours Spent Doing Internet Activities Respective to Genders

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Abstract: - The aim of this paper is to investigate the computer usage among secondary school students in one of a secondary school in Malaysia according on hours spent using computers without activities connecting to internet and hours spent doing internet activities. Questionnaires were given to the students, and seventy secondary school students had participated. This study involves some normal activities such as to find out (i) the value and percentage of students who had computers and internet connections at homes, (ii) the venues of the students spent time using computers without activities connecting to internet, (iii) the venues of the students spent time doing internet activities. In addition, (iv) hours spent using computers without activities connecting to internet, and (v) hours spent doing internet activities are also studied. Besides that the gender analyses based on some basic activities that can be done with computer were also analyzed. This study utilized Descriptive Statistics and Independent t-Test for the analysis methods. As for the result although more than half of the students had computers in their homes, however only half from this figure had accessed to the Internet. Many of the students also liked to use the computer whether it was connected or not connected to the internet by going to the cyber café. In addition, the hours spent on using computer weekly by male and female students were also revealed, that in many basic activities, male students were more likely to spend their valuable hours significantly sitting in front of computers doing things compared to the female students.

Key-Words: - Hours spent using computer without activities connecting to internet, Hours spent doing internet activities, Genders

1 Introduction

The dissemination of Information and Communication Technologies (ICT) in society is yielding different kinds of transformations. The school environment especially, as a part of the social system, is not beyond these transformations derived from the inclusion of the technologies. In fact, since some years and from different institutions setting action plans are being set, as a last resort, in order to establish the adequate use of these technologies as much in questions of didactic and practical application as in those referred to its deontology-; and thus, to adapt to new social requirements.

With the objective to know the evolution of the ICT integration process, which heads for the adequate use of the internet in secondary educational institutions in Malaysia, it is born the Observatory of new Technologies in the certain school in Malaysia to be observed on how strong the usage pf internet tools amongst the students, neither in school or at

home.

The Internet is a resource with the potential to helps students improve their knowledge and to being the most powerful ingenuity to Malaysian students nowadays. Over the last twenty years, the Ministry of Education (MOE) in Malaysia has embarked on many different projects on the use of ICT in the school. Some of these projects include Computer Literacy, Computers in Education, Smart Schools, and the latest is the use of ICT for a program entitled, English for Teaching Mathematics and Science.

In 2003, a reported has been detailed that the Ministry of Education (MOE) budgeted 30 per cent of its annual budget (approximately MYR 4.2 billion) to connect 230 rural schools to the Internet: 120 with ISDN lines, 100 with PSTN lines, and 10 with VSAT connection. It is expected that in 2003, almost all educational institutions will have at least one computer laboratory equipped with Pentium class PCs [1].

This is to say about 75 per cent to 90 per cent of schools and 100 per cent of universities will have access to the Internet through either dial-up, broadband, leased line or cable-broadband connection.

The use of ICT in Malaysia is fueled by the government's initiatives such as the Malaysian Superhighway Corridor (MSC) and Vision 2020 which emphasizes the use of ICT as the main impetus in bringing Malaysia into the digital and global 21st century.

On 14 June 1994, the MOE announced another joint council project called the National Education Network or *Jaringan Pendidikan* [2]. 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 [3].

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 department and research centers. 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 school shave 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, only those who are information literate will thrive and succeed [4]. Doyle 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 [5].

These sources include traditional paper-based information as well as digital information. Referring to the RM report on the Internet in Secondary School in United Kingdom (1998) the low usage of the Internet in classroom illustrated in their survey shows both the need for more networks with multiple Internet access in schools and more National Curriculum specific content on the Internet. The Government, and all those involved in the National Grid for Learning, must take a number of urgent steps if its aims are to be achieved. We detailed these steps below and believe this report is an important contribution to the current discussion on the priorities for a successful National Grid for Learning [6].

Several schools in Malaysia were selected to be 'smart schools' – have computers and internet connections at the schools. Most secondary schools in Malaysia have computers provided for the students' usage. Some of the computers connected to internet.

This study focused on study on computer usage among secondary school students, where it will emphasize more on comparative analysis on hours spent using computers without activities connecting to Internet and hours spent doing Internet activities computer usage among secondary school students in one of a secondary school in Malaysia. The selected school has computers in the school but without internet connections to the computer.

2 Methodology

Seventy secondary school students had participated in the study by answering the questionnaires. The questionnaire consisted of three parts: Part 1: Background of the respondent, Part 2: Activities done with computer without connecting to internet

and Part 3: Activities done with computer with internet connection.

Statistical Package for Social Science (SPSS) was used to perform statistical analysis on the data collected from the survey forms. The analysis that were performed in this study were Descriptive analysis and Independent t-tests.

3 Results

3.1 Reliability Analysis

Reliability analysis was used to determine the internal consistency of the scales using Cronbach's Alpha [7]. There were 6 items for activities done with computer without connecting to internet and 9 items for activities done with computer with internet connection.

The reliability analysis results showed that the Cronbach's Alpha for activities done with computer without connecting to internet was 0.733, the Cronbach's Alpha for activities done with computer with internet connection was 0.718 and the Cronbach's Alpha for total 15 items was 0.829. Mohd Salleh Abu and Zaidatun Tasir stated that the reliability coefficient more than 0.6 is always used [8]. Therefore, there were internal consistency of the scales. Hence, this instrument used in this study had high realibility value.

3.2 Descriptive Statistics

There were 70 secondary school students had participated in the study. 44 (62.9%) respondents were male respondents and 26 (37.1%) were female respondents. Figure 1 shows the pie chart of the number of students and the percentage for male and female students.

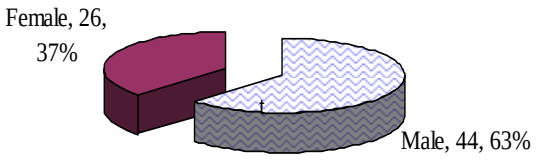

Fig. 1. Pie chart of the number of students and the percentage for male and female students

Table 1 shows the number and percentage of students who had computers and internet connections at homes. Forty-one (58.6%) of the secondary school students had computers at their homes while 29 (41.4%) of the secondary school students did not have computers at their homes. Twenty-one (30%) of the secondary school students had internet connections at their homes while 49 (70%) of the secondary school students did not have internet connections at their homes.

Table 1. The number and percentage of students who had computers and internet connections at homes

	Yes		No	
Items	N	%	N	%
Own computer at homes	41	58.6	29	41.4
Had internet connection at homes	21	30.0	49	70.0

Table 2 shows the venues of the students spent time using computers without activities connecting to internet. 21 (30%) of the secondary school students spent time using computers without activities connecting to internet at the cyber café. 20 (28.6%) of the secondary school students spent time using computers without activities connecting to internet at homes. 12 (17.1%) of the secondary school students spent time using computers without activities connecting to internet at homes and cyber cafes.

Table 2. The venues of the students spent time using computers without activities connecting to internet

Venues students used computers without activities connecting to internet	N	%
Cyber cafe	21	30.0
Home	20	28.6
Home and cyber cafe	12	17.1
School and cyber cafe	4	5.7
Home, school, cyber café and friend's house	4	5.7
School	3	4.3
Cyber cafe and friend's house	3	4.3
School and friend's house	2	2.9
Friend's house	1	1.4
Total	70	100.0

Table 3 shows the venues of the students spent time doing internet activities. 40 (57.1%) of the secondary school students spent time doing internet activities at the cyber cafés. 14 (20%) of the secondary school students spent time doing internet activities at homes. 6 (8.6%) of the secondary school students did not have experience doing internet activities.

Table 3. The venues of the students spent time doing internet activities

Venues doing internet activities	N	%
Cyber cafe	40	57.1
Home	14	20.0
Cyber cafe and friend's house	6	8.6
Home and cyber cafe	3	4.3
Friend's house	1	1.4
Did not use internet	6	8.6
Total	70	100.0

Table 4 shows the means and standard deviations of hours spent using computers without activities connecting to internet respective to gender. The results showed the highest mean was 6.02 hours per week male students played computer games whereas female students only spent 2.15 hours per week played computer games. On average 0.39 hours per week male students watched pornography CD without connecting to internet while on average female students did not watch pornography CD. Further analysis using Independent t-test were done to test whether there were significant means differences between male and female students on all activities without connecting to internet.

Table 4. The means and standard deviations of hours spent using computers without activities connecting to internet respective to gender

Activities without connecting to internet	Gender	Mean	Standard Deviation
Use Microsofft Word	Male	1.42	1.883
	Female	2.15	2.588
Play computer game	Male	6.02	9.257
	Female	2.15	3.674
Watch CD/VCD film	Male	1.48	2.464
	Female	1.31	1.871
Listen CD/VCD song	Male	4.51	8.716
	Female	4.00	6.020
Watch pornography CD	Male	0.39	1.528
	Female	0.00	.000
Other activities	Male	1.50	6.330
	Female	0.46	1.392

Table 5 shows the means and standard deviations of hours spent per week using computers doing internet activities. The results showed the highest mean was 3.30 hours per week male students chatting while female students only spent 1.65 hours on that. Male students played internet computer games on average 3.16 hours per week, and female students spent only 1.12 mean of hours per week for the same reason. As for the other activities shows an avearge spending hours for both male and female students. Further analysis using Independent t-test were done to test whether there were significant means differences between male and female students on all activities connecting to internet.

Table 5. The means and standard deviations of hours spent per week doing internet activities respective to gender

Internet activities	Gender	Mean	Standard Deviation
Play internet computer game	Male	3.16	5.167
	Female	1.12	3.241
Chatting	Male	3.30	6.897
	Female	1.65	2.297
Email	Male	1.64	2.373
	Female	2.04	6.820
Retrieve academic information	Male	1.73	2.245
	Female	1.58	3.126
Retrieve current issues	Male	1.20	2.097
	Female	.65	1.018
Download files	Male	2.70	6.033
	Female	.42	1.065
Webcam	Male	.23	.565
	Female	.27	.962
Surfing negative web page	Male	.57	1.576
	Female	.08	.392
Other internet activities	Male	.25	.576
	Female	.23	.430

3.3 Independent t-tests

As shows in Table 6 and Table 7 the independent t-test of using computers without connecting to the internet respective to genders and doing internet activities respective to genders specifically. It is obvious that male students were more likely to spent hours playing computer games momentously rather than female students. As for internet activities once again male students were also liked to spent their valuable hours on playing the internet computer game, downloading files, and also surfing negative web page compared to their conterparts.

Table 6. The independent t-test of using computers without activities connecting to internet respective to gender

Activities without connecting to internet	t	Sig. (2-tailed)
Use Microsofft Word	-1.367	.176
Play computer game	2.463	**.017**
Watch CD/VCD film	.303	.763
Listen CD/VCD song	.264	.793
Watch pornography CD	1.677	.101
Other activities	.823	.414

Table 7. The independent t-test doing internet activities respective to gender

Internet activities	t	Sig. (2-tailed)
Play internet computer game	1.814	**.07**4
Chatting	1.173	.245
Email	-.358	.722
Retrieve academic information	.233	.816
Retrieve current issues	1.252	.215
Download files	2.445	**.018**
Webcam	-.230	.818
Surfing negative web page	1.967	**.055**
Other internet activities	.148	.883

4 Conclusion

This paper presented the result of the study on computer usage among secondary school students in a selected school in Malaysia. It is to identify the routine of the students in using computer and internet access.

From this study, the results revealed that more than half of the students had computers at their homes but unfortunately only about half from the figures had internet access. This study also disclosed that the venue of the most students spent using computers to get their internet access was at the cyber café.

In addition, the difference between genders were also make known that male students spent more hours significantly compared to female students in playing computer game, downloading files and also surfing negative web page from the internet.

5 Future Work

Further study should be done on time spent at the cyber café for retrieving academic and non-academic information from internet would increase the students performance and social problems.

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