

Experienced and inexperienced Internet users among pre-service teachers: Their use and attitudes toward the Internet

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Abstract

Much has been said about the benefits of the Internet as a teaching and learning tool but to realize these benefits, teachers must be willing and able to use the Internet effectively in their teaching. Studies have also clearly shown that the likeliness of teachers using the Internet effectively and the success of Internet utilization was very much related to the users' attitudes toward the Internet (Liaw, 2002; Moon & Kim, 2001; Johnson & Hignite, 2000). This paper describes a study on pre-service teachers with differing levels of Internet experience, at one of the premier universities in Malaysia, to assess their Internet use and attitudes toward the Internet. The study is exploratory in essence and seeks to ascertain the comfort level of pre-service teachers where the Internet is concerned and hence to provide a glimpse of the future of the Internet in education within the Malaysian context.

Keywords

Pre-service teachers, Internet Use, Internet Attitudes, Internet experience

Introduction

The Internet is without doubt the fastest growing communication technology today (Dlodlo & Sithole, 2001). It took only four years for the Internet to achieve the same mark as the television revolution, which took 13 years to reach 50 million viewers (Molosi, 2001). With such rapid speed, the education field has not been spared the onslaught of this revolution. The Internet revolution has brought drastic changes to the area of education. It has revolutionized the way students learn and how teachers teach in the classrooms. Indeed, the permeation of the Internet technology into classrooms has created the opportunities for students to be active learners and allowed instructors to be facilitators (Anderson & Reed, 1998).

The Internet as an Educational Tool and its Impact on Teachers

The Internet serves not only as a delivery medium but also as a teaching and learning tool. According to Lê and Lê (1999), three phases exist between the Internet and education. They comprised learning about the Web (getting to know its functions), learning the Web (using it for certain purposes) and learning via the Web (using it as a mode of learning).

The effectiveness of the Internet in the classrooms is profound when used either as a teaching tool or as a delivery medium. Mathew and Dohery-Poirier (2000) suggested that Web-Based Instruction (WBI), creates an environment where teachers will have more time working with individual students and small groups because instructions are delivered via the Web. Teachers are spared the burden of repeating their teaching tasks with the use of WBI, while communication between teachers and students are more targeted and directed (Boer, 2001). Under these circumstances, the student centred learning environment is greatly enhanced.

Lessons become more interactive and students become more independent (Lê & Lê, 1999). Lê and Lê stressed that teachers and students are no longer bound by the traditional mode of learning but instead their interactions with one another is immediate, prompt, widely shared and resource supportive. This is true with the incorporation of synchronous and asynchronous communication tools such as the e-mail, instant messaging and bulletin boards.

The impact of this new education technology on teachers is, therefore, undeniably immense. They will need support as they face personal, social and professional changes (Fetherston, 1999). Their responsibilities are more complicated as they are expected to be content experts, technology specialists, motivators, cooperative and collaborative learning advocates and monitors of student progress (Abtar & Kuldip, 2001). Abtar and Kuldip further added that this new learning environment instead, puts the lone teacher in a challenging and demanding work condition. Teachers also constantly need to face unfamiliar format and teaching strategies (Stoney & Wild, 1998). Duggan, Hess, Morgan, Kim and Wilson (2001) stressed that within any format or teaching strategies, the likeliness of teachers using the Internet effectively could be influenced by their attitudes toward the Internet.

In the Malaysian context, the impact of the Internet on education has not been very encouraging. A study by Ramayah, Muhamad and Bushra (2003) found that the level of Internet use among university students was still far below expectation. They used the Internet mainly to search for information and to access their e-mail. In another study, Wong, Kamariah, Ramlah, Rohani and Tang (2003) reported that less than 50% of pre-service teachers in a government funded university possessed a high level of Internet skills despite having just completed an introductory Information Technology course that comprised six hours of hands on training on the Internet. This is worrying because only those with good basic Internet skills tend to have positive attitudes toward the Internet (Hong, Ridzuan & Kuek, 2003) and pre-service teachers' attitudes toward the Internet can significantly influence the future integration of the Internet into their teaching.

Objectives of the Study

The specific objectives of this study are to 1). explore the types of Internet services used by pre-service teachers; 2). explore pre-service teachers' attitudes toward the Internet; 3). explore the relationship between pre-service teachers' use of the Internet and their attitudes toward the Internet; 4). determine if differences exist in Internet service preference between pre-service teachers with differing levels of Internet experience; 5). determine if differences exist in attitudes between pre-service teachers with differing levels of Internet experience.

In this study, attitude is measured in terms of perceived usefulness, affection and perceived control while Internet experience is measured in terms of numbers of years of using the Internet.

Method

Participants

The target population of this study was pre-service teachers at the Faculty of Educational Studies, UPM ($N=1601$). The number of participants accessible at the time of data collection was 313 and the participants were from seven different programs. Of the 313 participants, three of them had no experience using the Internet. According to them, they avoided using the Internet because they did not know how to use it. They also reported that they did not have the time to learn how to use the Internet. Data from these participants were eliminated. The remaining participants were from the following programs: Bachelor of Education majoring in Agricultural Science (AS), Information Technology (IT), Home Science (HS), Counseling and Guidance (C&G), Teaching English as a Second Language (TESL), Teaching Malay as a First Language (TMFL) and Physical Education (PE). Table 1 shows the number of participants from each program.

Table 1. Number of participants according to programs

Program	Number of participants
AS	46
IT	16
HS	53
C&G	54
TESL	48
TMFL	40
PE	53
Total	310

The mean age of the participants was 22.63 (S.D.= 3.74). The youngest and oldest participants were 19 and 39 years old respectively. The participants were composed of 238 females and 72 males.

Instrumentation

The instrument developed for this study was in the national language (Malay Language). The instrument comprised three sections (Appendix A) as follows:

1. First section: Participants' demographic background, Internet experience and sources of Internet knowledge;
2. Second section: Types of the Internet services used;
3. Third section: Attitude towards the Internet

All items in the second section except for items 2.9, 2.10 and 2.11, were adapted from the instrument developed by Hills and Argyle (2003). Hills and Argyle categorized the types of Internet use into work, social, use at home and leisure. All the items in the third section were adapted from Tsai, Lin and Tsai (2001). Tsai et al. measured attitudes toward the Internet in terms of perceived usefulness, affection, perceived control and behavior.

Part E of the second section comprised 11 different types of Internet services and the participants were required to indicate their frequency of use for each service. The items were measured by a five point Likert-type scale, ranging from never, rarely (average of 15 minutes per day), sometimes (average of between 15 minutes and 1 hour per day), frequently (average of between 1 and 3 hours per day) and very frequently (average of more than 3 hours per day). For this study, the Internet services were grouped into three categories: information (items 2.4, 2.5, 2.6, 2.10), social (items 2.2, 2.3, 2.7, 2.9) and leisure (items 2.8, 2.11, 2.12). The participants were also required to state the average number of hours per week spent on the Internet.

Fifteen items measured attitudes toward the Internet in section three of the instrument (three items were removed after conducting pilot test). Each item was measured against a five point Likert-type scale ranging from strongly disagree (5) to strongly agree (1). This meant that the lower the mean scores, the more positive participants' attitudes were as the scores given for the items were in reversed order. The subscales that made up this construct were perceived usefulness (items 3.3, 3.6, 3.8, 3.11, 3.14), affection (items 3.2, 3.5, 3.7, 3.10, 3.13) and perceived control (items 3.1, 3.4, 3.9, 3.12, 3.15). Items 3.2, 3.4, 3.5, 3.7, 3.10 and 3.13 were reverse scored.

Validation and pilot test

Two of the authors of this paper content validated all the items in the questionnaire. The items were also checked for clarity. The item "The Internet can allow me to do more interesting and imaginative work" was changed to "The Internet can allow me to do more imaginative work" because it was double barreled in nature. A qualified person with vast experience in the field of computer technology but not involved in the research was also asked to validate the items. All three content validators found the items to be suitable in the Malaysian context.

A double back translation was carried out on items to ensure that the items in the Malay Language were equivalent to the original English version. Three bilingual schoolteachers were involved in the translation process. The first teacher translated the original English version into Malay. The second teacher then retranslated the Malay version into English without looking at the original version. Finally, the third teacher compared the original and the translated English versions. The teacher agreed that the meanings of both versions were consistent.

The instrument was pilot tested on a group of teachers from the TESL program. They were not included in the actual study. Twenty-nine out of thirty respondents answered the items fully. Of the 29 respondents, seven were males. The mean age was 32.00 years old (S.D.= 4.00) with the youngest and oldest respondents being 25 and 42 years old respectively. One of the items from the behavioral construct was removed to improve the reliability of the instrument. The removal of this item meant that there would only be two items left to measure this construct. The authors were then concerned that the small number of items would not be a valid measure of behavior and eventually decided to remove the entire construct from the final version of the instrument. The Cronbach alphas recorded for sections two and three were .62 and .77 (after the removal of three items) respectively.

One of the authors of this paper collected the data for the pilot test at the beginning of a lecture with the prior permission of the course instructor. The same author was present throughout the data collection process to entertain any queries from the participants. There were, however, no queries suggesting that the items were clear and comprehensible.

Data collection

Data were collected from the participants on a voluntary basis at the beginning of their lectures with prior permission from the instructors involved. As in the pilot study, the same author was present throughout the data collection process. After a brief introduction of the research, the survey forms were distributed to students. The same author waited until everyone finished and collected the survey forms. On the average, students took about 10 minutes to answer the survey forms. There were also no queries from the participants.

Results

Participants' demographic background, Internet experience and sources of Internet knowledge

The participants reported spending an average of 3.41 hours (S.D.= 3.21) per week on the Internet. The majority of them did not have Internet access at home (n= 197) while the rest had (n= 113). Those with such access spent an average of 4.20 hours (S.D.= 4.09) surfing per week while those without such access spent an average of 2.96 hours (S.D.= 2.47) per week

Table 2 shows the various sources of learning the Internet against the number of participants. The most common source was learning through friends. Most of the participants indicated that they learned from more than one source.

Table 2. Sources of Internet learning

Sources	Number of participants	Percentage (%)
Learning through friends	214	69.0
Learning on their own	188	60.6
Learning while in school	120	38.7
Learning through courses while in university	109	35.2
Learning from commercial computer centres	92	29.7
Others	16	5.2

Use of Internet services

The Cronbach's alphas for sections two and three for the actual study were recorded at .78 and .77. These values were considered high as they surpassed the minimal consistency guidelines (>.70) recommended by DeVellis (1991).

Table 3 shows that the participants used the Internet mostly for information related purposes as indicated by the high mean value (>3.70). The information sought by the students online was mainly for their studies. The two least favored activities among the participants were online shopping and banking as indicated by the low means (1.08 and 1.25). This shows that students have a higher tendency to use the Internet for gaining information and to use it least for socializing. It also shows that the students treated the Internet as a useful learning tool.

Table 3. Types of Internet services

Service	Number of users	Mean frequency of use
Getting information for studies ⁱ	305	3.80±0.96
Getting information in general ⁱ	300	3.71±1.17
E-mail for studies ⁱ	269	2.91± 1.17
E-mail to friends ^s	250	2.48±1.07
Downloading free software ^s	208	2.36±1.25
Accessing online newspaper ⁱ	184	2.13±1.18
Online games ^l	148	1.85±1.07
Online discussion ^l	118	1.71±1.08
E-mail to family ^s	114	1.54±0.81
Online banking ^s	44	1.25±0.69
Online shopping ^s	14	1.08±.411

i= information, s= social, l= leisure

Attitude towards the Internet

Attitude towards the Internet was measured in terms of perceived usefulness, affection and perceived control. Table 4 presents the participants' means scores with the standard deviations of the three subscales. The participants scored the lowest on the affection subscale (an average of 1.93 per item) followed by the perceived usefulness subscale (an average of 1.95 per item) and lastly the perceived control subscale (an average of 2.47 per item). This means that the participants showed feelings that were more positive and perceived the Internet as useful. The results, however, show that they did not perceive themselves to be in control when using the Internet suggesting a lack of skill in navigating through the Internet and needing assistance to surf the Internet. On the whole the participants were nevertheless aware of the benefits of the Internet and were willing to use it to assist them in important tasks.

Table 4. Scores of perceived usefulness, affection and perceived control

Subscale	Number of Items	Possible range	Actual range	Mean	S.D.
Perceived usefulness	5	5-25	5-24	9.74	2.50
Affection	5	5-25	5-25	9.64	2.85
Perceived control	5	5-25	6-19	12.34	2.55

The lower the mean scores, the more positive the attitudes

The relationships between pre-service teachers' attitudes toward the Internet and two other variables were also investigated using the Pearson product-moment correlation coefficient. The variables were the participants' length of time being online per week and their use of the Internet. For this analysis, the scores of items representing types of services were summed up to arrive at a composite score. Cohen's (1988) rule of thumb was used for both relationships. There was a negative correlation between their attitudes toward the Internet and the time spent being online [$r = -.153$, $n = 310$, $P = .007$]. The strength of relationship was considered as almost negligible. There was also a negative correlation between attitudes and Internet use [$r = -.314$, $n = 310$, $P < .0005$]. The strength of relationship was considered as moderate. Both relationships were found to be statistically significant. The results suggests that the more positive attitudes they have toward the Internet, the more time they spent on the Internet for various purposes.

Internet experience and preferences of Internet services

A one-way between groups multivariate analysis of variance was performed to investigate whether participants with differing levels of Internet experience had any preferences for different types of Internet services. Three dependent variables (types of Internet services) were measured: social, information and leisure. The independent variable was Internet experience that was categorized into two levels; those with at least one year Internet experience (Group 1) and those with more than one year experience (Group 2). Group 1 was considered to be inexperienced Internet users while Group 2 was considered to be experienced Internet users.

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity. No serious violation was noted

except for the equality of variance for the dependent variable (leisure) which was not met. Pallant (2001) suggested that if this assumption was violated, a more conservative alpha level for determining the significance for that variable be set. Tabachnick and Fidell (1996) recommended an alpha of .025 or .01. The authors decided to use the most stringent alpha level, .01 for the entire analysis because of the aforesaid violation.

There was a statistical significant difference between Groups 1 and 2 on the combined dependent variables: $F(3,306) = 9.79, P < .0005$; Wilks' Lambda = 0.912, partial eta squared = 0.088. When the results for the dependent variables were considered separately using the Bonferroni adjusted alpha level of .003, the mean scores for the two variables reached statistical significance (Table 5).

Table 5. Differences between Groups 1 and 2 in terms of types of Internet use

Dependent variables	Group 1		Group 2		F	P	Partial Eta Squared
	Mean	S.D.	Mean	S.D.			
Social	7.49	2.03	8.94	2.71	13.168	.000*	.041
Information	10.51	2.77	12.95	3.05	28.132	.000*	.084
Leisure	2.92	1.32	3.68	1.89	7.435	.007	.024

* Significant at $p < .003$

The variables were information [$F(1,308) = 28.132, P < .0005$, partial eta squared = 0.084] and social [$F(1,308) = 13.168, P < .0005$, partial eta squared = 0.041]. The mean score for the variable, leisure was not statistically significant [$F(1,308) = 7.435, P = .007$, partial eta squared = 0.024]. This suggests that participants with more than a year of Internet experience used the Internet more for information and social purposes compared to those who had a year or less of Internet experience. However, there was no statistical significant difference between them when measured in terms of leisure.

Internet experience and attitude towards the Internet

A one-way between groups multivariate analysis of variance was also performed to determine whether participants with differing levels of Internet experience differed in terms of their attitudes toward the Internet. The three dependent variables (attitudes) were perceived usefulness, perceived control and affection.

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity. No serious violation was noted except for the presence of multivariate outliers. Pallant (2001) suggested that if this happened, two alternatives were available. The data could be transformed or the cases with outliers be removed. The authors decided on the second option as only three cases needed to be deleted. This left 307 participants as samples. The alpha level, .01 was still used for this second MANOVA analysis.

There was a statistical significant difference between Groups 1 and 2 for attitudes: $F(3,303) = 6.60, P < .0005$; Wilks' Lambda = 0.939, partial eta squared = 0.061. Using the Benferroni method, each ANOVA was tested at the adjusted alpha level of .003. The results are shown in Table 6.

Table 6. Differences between Groups 1 and 2 in terms of attitudes

Dependent variables	Group 1		Group 2		F	P	Partial Eta Squared
	Mean	S.D.	Mean	S.D.			
Perceived usefulness	10.22	1.88	9.57	2.35	3.403	.066	.011
Perceived control	13.59	2.48	12.06	2.47	16.152	.000*	.050
Affection	10.75	3.02	9.33	2.55	12.260	.001*	.039

* Significant at $p < .003$

The ANOVA on the mean scores for perceived control was statistically significant [$F(1,305) = 16.152, P < .0005$, partial eta squared = 0.050]; the mean scores for affection was also statistically significant [$F(1,305) = 12.260, p = .001$, partial eta squared = 0.024]. The mean scores for perceived usefulness was not statistically significant [$F(1,305) = 3.403, P = .066$, partial eta squared = 0.011]. The results suggested that participants with more than a

year Internet experience had better control over the use of the Internet. Both groups, however, did not show any statistical significant difference in terms of their perceived usefulness of the Internet.

Discussion

An overwhelming majority of participants involved in this study indicated that they learned to use the Internet through several sources. As learning through friends was most common, it can be assumed that the participants were more comfortable being online when someone who was Internet savvy accompanied them. The results also showed that besides learning through friends, a high number of participants were self-taught. These findings are consistent with those by Duggan et al. (2001) and Wei He and Jacobson (1996) who found self-taught or learning from peers to be the most common methods.

The participants spent an average of 3.41 hours per week when asked to indicate how long they used the Internet either at home or in campus. This is much higher than that of Nigerian students where the average online time per week was only one hour (Jagboro 2003). However it is rather low when compared to a developed nation such as England where Hills and Argyle (2003) reported that their participants in Oxfordshire, England, spent an average of 7.9 hours online per week. Malaysian pre-service teachers' average online time may thus be said to be moderate.

The moderate online time among the participants in this study may be due to insufficient Internet facilities in the university concerned. The computer laboratories in the university were usually fully booked and utilized for practical sessions. They were seldom available to students to surf the Internet during their free time.

Even those with Internet access at home spent an average of only 4.20 hours online per week. This is still unsatisfactory compared to the average online time reported by Hills and Argyle (2003). This moderate level of use may be due to the high Internet subscription rates in Malaysia where users pay by the minute. The longer they used the Internet, the more they had to pay. This would certainly discourage users from using the Internet for a long time. By charging a high rate, it was possible that participants who did not have Internet access at home were deterred from subscribing to any Internet services. Affordability or the ability to pay for Internet access has been proven to be a dominant factor in determining the number of Internet subscribers (Minges, 2003).

When the participants were online, almost all of them used the Internet for searching information that was mostly for educational and general purposes. They, however, seemed to spend longer hours online searching for educational related information. It could be assumed that the most popular Internet service used was information related. This assumption is supported by a study by Duggan et al. (2001) which reported that university students usually used the Internet mostly for term paper research, course notes retrieval and consultation with lecturers. They spent longer hours on this type of service compared to the others. The use of the e-mail for their studies was also prevalent among the participants. It is not surprising that the preferred services were related to information rather than for social or leisure purposes as the participants were undergraduate students in a university. The results concur with the results reported by Ramayah et al. (2003) that undergraduates used the Internet mainly for seeking information. The result of this study was, however, in contrast to findings by Mathews and Schrum (2003). They reported that although students in a large research institution in the southeast United States used the Internet for academic purposes, they spent less time on it compared to nonacademic matters.

The least used services were online banking and shopping. Online banking and shopping are rather new services in this country and it may take a while for people to see the benefits of using such services. Moreover, most Malaysian undergraduate students do not own credit cards as banks require their customers to have steady incomes and jobs. It is, therefore, unlikely that undergraduate students own credit cards unless they are given supplementary cards by their parents or if they have worked before. As online shopping is usually payable by credit cards, not many students would be able to carry out such activities. Since the introduction of online banking in this country four years ago, many banking customers still express distrust at such services.

The relatively higher scores on the perceived control subscale suggest a lack of skill while online. It can be assumed that they would prefer to have someone more experienced to guide them while online. Despite the moderate level of Internet use generally, the participants' attitudes toward the Internet when assessed, were positive. Tsai et al (2001) suggested this could indicate that they had low anxiety with high confidence when using the Internet. It was highly likely that the participants would not be phobic to future use of the Internet as

well. They also perceived the Internet as a useful tool. The results were substantiated by the fact that the participants used the Internet for many purposes as shown in Table 3. They seemed to believe that the technology helped to improve their productivity as students in a higher institution. They regarded the Internet more as an educational tool rather than a tool for seeking entertainment or improving their social lives. According to Duggan et al. (2001), those who favored the Internet as an educational tool tended to share them with their friends. Duggan et al. went on further to suggest that this kind of feelings might actually enhance social use of this technology.

The authors of this research also found that the more positive attitudes the participants had, the longer they stayed online. This result concurred with Anderson and Reed's (1998) findings which revealed that positive attitudes were related to increased Internet use. Students with longer Internet exposure time and more opportunities to use the Internet in campus were found to have more positive attitudes toward learning to use the technology (Hong et al., 2003).

The results from MANOVA revealed that those with differing levels of Internet experience differed significantly in their preferences of the Internet services. Participants with more experience used the Internet more for seeking information and improving their social lives. When compared in terms of entertainment, no statistical significant difference was detected suggesting that Internet experience was not related to students' relaxation preferences.

The results from the second MANOVA conducted in this study also found that there was a statistical significant difference between those with differing levels of Internet when measured in terms of their attitudes toward the Internet. Those who had more experience using the Internet were in better control while online compared to those with less experience. The experienced participants appeared more independent while online and it was likely that they surfed alone. The results also suggest that these participants tended to be certain of what they were looking for and could navigate through the web with ease. In terms of perceived usefulness, both groups did not show any statistical significant difference.

Conclusion

This research shows that the vast majority of pre-service teachers in this public university used the Internet for many reasons. They appeared to be aware that the Internet held many benefits for them as undergraduate students in a higher learning institution. Their attitudes toward this technology were positive. Although much need to be done to increase Internet use and skills among pre-service teachers, this finding proves encouraging as studies have clearly shown that the success of Internet utilization was very much related to the users' attitudes toward the Internet (Liaw, 2002; Moon & Kim, 2001; Johnson & Hignite, 2000). The tendency of those who have more positive attitudes, to use and integrate the Internet in their teaching-learning process in the classrooms is very high. It is likely that they will integrate the new technology effectively in their classroom instruction as they are convinced of the benefits of the Internet either as a teaching tool or as a learning medium.

The research also provides some evidence that Internet experience plays a pivotal role in increasing Internet use. Experienced Internet users tended to remain online longer than those with lesser experience each time they access the Internet. The more experienced they were, the more likely they would use it for information related activities compared to activities of a social nature. Minges (2003) asserted that Internet use was closely linked to education. Internet experience also encouraged positive attitudes toward the Internet. Pre-service teachers with longer Internet exposure had more control over the Internet.

It should be noted that this study is preliminary and exploratory in nature. All data collected were based entirely on the honesty and how the participants perceived their use and attitudes toward the Internet. A further limitation of this study was that it provided only a snapshot of the time when data were collected. It also must be recognized that the participants involved were undergraduate students who majored in education in one public university and had volunteered to participate in this study. Therefore, caution must be taken when generalizing any findings for the entire population at the faculty where this study was conducted.

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Appendix A

Internet Use and Attitude towards the Internet Survey

Thank you for taking the time to complete this survey. Your responses will provide valuable insight into pre-teachers' Internet use and attitudes toward the Internet. Please answer each question in the following three sections to the best of your ability.

SECTION 1

Please complete Parts A, B and C by placing checkmarks in the appropriate boxes and filling in the blanks for written answers.

Part A: Background

The purpose of this part is to collect some basic information about your background.

- 1.1 Age _____ years
- 1.2 Program of study
- B.Ed (Teaching Malay as a First Language)
 - B.Ed (Teaching English as a Second Language)
 - B.Ed (Agricultural Science)
 - B.Ed (Home Economics)
 - B.Ed (Physical Education)
 - B.Ed (Counseling and Guidance)
 - B.Ed (Information Technology)
- 1.3 Gender
- Male
 - Female
- 1.4 Do you have access to the Internet at home?
- Yes
 - No

Part B: Internet Experience

The purpose of this section is to collect some basic information about your Internet experience.

- 1.5 Do you have experience in using the Internet?
- Yes (Proceed to Question 1.6)
 - No (Proceed to Question 1.7)
- 1.6 How long have you been using the Internet? _____ years
- 1.7 If you answer 'No' in question 1.5, please indicate why.
(You may place more than one checkmark in the appropriate boxes)
(You do not need to proceed to Sections 2 and 3)
- Don't know how to use the Internet
 - No time to learn about the Internet
 - No time to use the Internet

No interest at all

Others (Please indicate) _____

Part C: Source of Internet knowledge

The purpose of this section is to gather some information about the source of your Internet knowledge.

1.8 I gained my Internet knowledge from:
(You may place more than one checkmark in the appropriate boxes)

courses at university

courses at commercial computer center

school

self-study

friends

Others (Please indicate) _____

SECTION 2

Please complete Parts D and E by placing checkmarks in the appropriate boxes and filling in the blanks for written answers.

Part D: Length of Internet use						
2.1	On the average, how long do you use the Internet in a week?	_____ hours				
Part E: Frequency of Internet Use						
The purpose of this part is to determine the frequency of your Internet use on a scale of:						
1= Never						
2= Rarely (Average of 15 minutes per day)						
3= Sometimes (Average of between 15 minutes and 1 hour per day)						
4= Frequently (Average of between 1 and 3 hours per day)						
5= Very Frequently (Average of more than 3 hours per day)						
		1	2	3	4	5
2.2	E-mail to friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3	E-mail to family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.4	Obtain information in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.5	E-mail for studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.6	Obtain information for studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7	Online banking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.8	Online shopping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.9	Download software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.10	Access online newspaper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.11	Online discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.12	Online games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 3

Please complete Part F by placing checkmarks in the appropriate boxes.

Part F: Attitudes toward the Internet						
The purpose of this part is to assess your attitudes toward the Internet on a scale of:						
1= Strongly Agree						
2= Agree						
3= Not Sure						
4= Disagree						
5= Strongly Disagree						
		1	2	3	4	5
3.1	I could probably teach myself most of the things I need to know about the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2	I hesitate to use the Internet in case I look stupid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3	The Internet can allow me to do more imaginative work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4	I need an experienced person nearby when I use the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.5	If given the opportunity to use the Internet, I am afraid that I might damage it in some way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.6	The Internet makes society more advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.7	The Internet makes me feel uncomfortable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.8	The Internet enlarges my scope	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.9	I do not need someone to tell me the best way to use the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.10	I feel bored toward using the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	3.11	The Internet makes a great contribution to human life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.12	I can use the Internet independently, without the assistance of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.13	When using the Internet, I am not quite confident about what I am doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.14	The Internet helps me acquire relevant information I need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.15	If I get problems using the Internet, I can usually solve them one way or the other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>