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Gender Differences in Attitudes towards Information Technology among Malaysian Student Teachers: A Case Study at Universiti Putra Malaysia

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ABSTRACT

This article presents a quantitative study on gender differences in attitudes toward the usage of Information Technology (IT) related tools and applications. The study was conducted at Universiti Putra Malaysia, Malaysia, with 73 female and 29 male student teachers involved as participants. They were each presented with a questionnaire to relate their attitudes toward IT before and after undergoing a discrete IT course for the duration of one semester (14 weeks). The attitudes of the respondents were measured in terms of three dimensions, namely, usefulness, confidence and aversion. There were no significant differences between female and male student teachers when the pre- and post-test mean scores were compared. Both genders exhibited the same levels of attitudes before and after undergoing the comprehensive IT course. This suggests that the exposure to IT did not contribute to any significant gender disparity. The paired sample *t*-test results showed improved attitudes toward IT usage in both females and males after the exposure to IT. The biggest improvement for both females and males was in the aversion dimension which showed that their initial strong dislike toward IT was greatly reduced at the end of the course. In terms of confidence, female participants exhibited an enhanced confidence level after the course as opposed to the male participants. The results support the view that computer experience is gender-based as the increase in IT confidence over time assumed different patterns for females and males.

Keywords

Gender differences, IT attitudes, Student teachers

Introduction

Malaysia is one of the fastest developing nations in South-East Asia. Indeed, she has a national ambition, named Vision 2020, to attain developed-nation status by the year 2020 (Mohammad, 1998). Achieving Vision 2020 would be a big step towards Malaysia's success and achievement internationally. Various national policies have been formulated by the Malaysian government in its blueprint to achieve Vision 2020, one of which was known as the Smart School Policy and was designed to introduce Information Technology (IT) into mainstream education. It was introduced as one of the specific responses to Malaysia's need to make the critical transition from an industrial-based economy to a knowledge-based society (Mohammad, 1998).

The main thrust of the Smart School Policy is that by the year 2010, more than 10,000 of Malaysia's primary and secondary schools will be Smart Schools (Smart School Project Team, 1997). The Smart School Project Team (1997) has defined the Malaysian Smart School as a learning institution "…reinvented in terms of teaching-learning practices and school management in order to prepare children for the Information Age…" (p.20). All teachers will by then be expected to have the ability to use IT tools and applications in the teaching and learning processes. They are now expected to progressively adapt themselves from being knowledge presenters to knowledge facilitators in the IT based classroom. As knowledge facilitators, teachers will have new roles to play that are different from the conventional classroom teaching practices that they were used to (Shelley, Cashman, Gunter & Gunter, 2004). As Lai (1993) pointed out, apart from the role of teachers, they have to assume the roles of planners and managers, participants and guides (Lai, 1993). In Lai's view, as planners and managers, teachers will have to plan when setting up a computer-supported learning environment and will have to know how computer software can be integrated into existing school curricula. Lai (1993) also added that teachers will no longer be knowledge authorities but instead,

will have to learn alongside the students. In addition, teachers must also be able to guide students to acquire metacognitive knowledge and higher level thinking skills in their knowledge construction.

As IT becomes more ubiquitous in our everyday lives, educational settings are being transformed where educators and students are expected to teach and learn, using the technology (Li, Kirkup & Hodgson, 2001; Lee, 2003). Educational institutions around the world are beginning to recognise the potential of IT in pedagogy (Oblinger & Rush, 1997). Introductory IT courses are compulsory for first year students in most of the institutions of higher learning around the world where students are taught to integrate IT tools and applications into their own learning process. Instructors are also encouraged to integrate IT into their teaching process to complement the integration of IT into the learning process. With the widespread influence of IT in education, the issues of gender differences in its use, access and attitudes have emerged and have attracted keen interest among researchers. Broos (2005), for example, pointed out that the growing importance of IT in diverse sectors of society has led to social divisions and gender discrepancy is one of such problems.

Research Background

The issue of the gender gap in IT has caught the attention of many researchers and as a result, numerous studies have been conducted to study the extent of this gap (Margolis & Fisher, 2002). As early as the 1980s, studies had reported that females exhibited more negative views and perceptions towards the use of computers than males (Dambrot, Watkins-Malek, Silling, Marshall & Garver, 1985; Koohang, 1987). Studies reported in the literature over 20 years ago suggested that gender has had a mediating effect on attitudes and perceptions towards IT but it is important to note that IT was an adequate term then when computers were mostly used for mathematical and word processing tasks but today, computers are being used in various facets of life (Mitra, Lenzmeier, Steffenmeirer, Avon, Qu & Hazen, 2000). The integration of computers and IT into the education system have greatly influenced the mindset towards IT. Hence, although the literature shows that extensive research related to gender and attitudes towards IT has been carried out over the years, such findings may be irrelevant today because of the ever expanding nature of IT.

The debate over the gender gap that started since the 1980s still persists in the new millennium. Many researchers have revisited this issue and many are continuing to do so. For example, the study by Houtz and Gupta (2001) found significant gender differences in the way females and males rated themselves in their ability to master technology skills. Even though both genders were positive about their technological ability, males rated themselves higher than females. In another study, Shashaani and Khalili (2001) reported that female undergraduate students had significantly lower confidence than males when it came to their ability to use computers. Females also reported feeling helpless, nervous and uncomfortable around computers. Both genders, however, viewed computers as a useful tool and equally believed that computers had positive effects on individuals and society. Tsai, Lin and Tsai (2001) reported similar results in their study which showed no significant gender differences in the perceived usefulness of the Internet.

Consistent with earlier studies (Houtz & Gupta, 2001; Shashaani & Khalili, 2001; Margolis & Fisher, 2002), a recent study by Broos (2005) also found significant gender differences – favouring males in terms of attitudes toward new communications technology, the extent of computer use and self-perceived computer experience. Even when females perceived themselves as being more competent in using computers, they expressed higher computer anxiety levels compared to males. This is not surprising as Liaw's study (2002) had also indicated that males had more positive perceptions towards computers and Web technologies than females.

Although they may not provide conclusive evidence of specific gender disparity, all the abovementioned studies, which were carried out among high school or undergraduate students except for Broos (2005), indicated that gender disparity in the use of IT for educational purposes existed to a certain extent. This is definitely a cause for concern as IT is considered a crucial tool for effective teaching and learning in most curricula.

The debate on gender disparity in IT has also been documented by several researchers who recognised the importance of other variables, such as students' computer experiences, socioeconomic status and age, in explaining gender differences. In the case of students' computer experience, Chen (1985) found that females and males responded with similar levels of interest toward computers when they possessed similar amounts of computer

experience. Shashaani (1997) provided further evidence that computer attitudes and related experience were reciprocally related. Shashaani (1997) revealed that students who were more knowledgeable in computers had used computers more frequently and had greater access to home computers. They were also more interested in computers and had more confidence working with them. This suggests that the discrepancy between male and female attitudes can be reduced to a certain extent if computer experience is controlled (Shashaani, 1994a; 1997). Kirkpatrick and Cuban (1998) noted that the gender gap was narrowed when both genders were exposed to the same amounts and types of experiences when using computers. On the contrary, Kadijevich's (2000) study found that males exhibited more positive attitudes toward computers than females even when computer experience was controlled. This means that such experience does not necessarily have a mediating effect on computer attitudes.

Most of the early studies revealed that computer experience played a role in narrowing the gender gap while other studies indicated that such experience might be gender-based. Broos (2005), for instance, found that prior computer experience would only have a positive effect for males. More experienced male users showed greater positive attitudes toward IT while females with equal computer experience reported having computer anxiety. Todman (2000), on the other hand, found that the reduction in computer anxiety for males was more apparent over time than in the case of females.

Similarly, socioeconomic status and age are also important variables to consider. Shashaani (1994b) found that socioeconomic status, as indicated by parents' occupations and incomes, had a significant influence on students' attitude towards computers. Students from families with higher socioeconomic status were found to have more positive computer attitudes than those from families with lower status (Shashaani & Khalili, 2001). It can be assumed that those from the higher socioeconomic end are more likely to have a computer at home or have better opportunities of gaining access to one. In terms of age, studies have also found gender differences in attitudes in younger individuals and the differences increase among older individuals (Kirkpatrick & Cuban, 1998; Jennings & Onwuegbuzie, 2001). These studies are, however, inconsistent with the study by Lau and Ang (1998) and Roussos (2007) who found that age had no significant relationship with attitudes towards computing.

Purpose of Study

The rapid IT developments in the Malaysian education system in the past decade, especially the implementation of Smart Schools, have influenced expectations from higher institutions in Malaysia. These institutions are expected to train and equip graduate teachers with adequate knowledge and skills to utilise IT as an effective tool in their teaching practices. Teachers are also expected to possess the right attitudes towards the usage of IT. Mitra et al. (2000) stressed that the aspect of gender has remained relatively constant as an independent variable in determining the levels of learning, attitudes and the use of computers. In fact, a review of existing literature reveals that gender disparity in attitudes still exists among undergraduate students in higher institutions of learning. Premised on this assumption, the present study was conducted to examine gender differences in attitudes among student teachers at Universiti Putra Malaysia (UPM), Malaysia. As prior research has also shown that experience in using IT can influence attitudes toward the usage of IT, this study also assumed that there would be a significant difference in such attitudes of student teachers before and after their completion of a discrete IT course. In this study, the following research questions were investigated:

1. Are there gender differences in attitudes towards IT among the student teachers before their enrolment in the discrete IT course?
2. Are there gender differences in attitudes towards IT among the student teachers after their enrolment in the discrete IT course?
3. Are there differences in attitudes towards IT for the female student teachers before and after their enrolment in the discrete IT course?
4. Are there differences in attitudes towards IT for the male student teachers before and after their enrolment in the discrete IT course?

Methodology

Subjects and procedures

There were 102 participants in this study (73 females and 29 males) from three intact student groups from the Faculty of Educational Studies, UPM. These students were registered for a compulsory discrete IT course. Their ages ranged from 19 to 30 years old (M= 21.06 years; SD= 1.86 years). The female students had an average of 1.81 years of computer experience (maximum computer experience= 9 years; S.D.= 0.23 year) while their male counterparts had an average of 1.60 years of experience (maximum computer experience= 7 years; S.E.= 0.36 year) prior to their enrolment in the discrete IT course. The mean ages of females and males were 20.81 (SD=1.32) years old and 21.72 (SD=2.74) year olds respectively. All these students majored in education and were predominantly from middle-class income families.

The enrolment in the discrete IT course − Information Technology in Education (EDU 3033) − which was introductory in nature, was compulsory for all participants in the survey. This course was facilitated by a female instructor who met with the students for three hours a week for fourteen weeks in a computer laboratory. In addition, the students were also given a two-hour lecture each week by a course instructor who introduced the fundamentals of each IT tool and application via a laptop computer. The laptop display was projected onto a big screen at the front of the lecture hall to enable all the students to view every aspect of the instructor's display. The laboratory sessions, on the other hand, comprised hands-on instructions and several projects to be completed by the students. The projects consisted of assignments and hands-on exercises in word processing, presentations, databases, spreadsheets and homepages. Only the assignments were graded.

The first set of questionnaires was administered to the students on the first day of the course (Time 1) while the second identical set was administered on the final day (Time 2) of the course. The duration between Time 1 and Time 2 was one semester (14 weeks). The two questionnaires generated a matched pair of data for each student. This was done to determine the effect of exposure on the attitudes towards IT among the student teachers.

Instrumentation

Two sets of identical questionnaires were developed in the Malay language. The English version of the questionnaire is shown in Appendix A. The questionnaire used was adapted from Wong (2002) and it measures the attitudes of participants towards IT. Several items in Wong's (2002) study were adapted from Christensen and Knezek (1998) and Loyld and Gressard (1984). Three dimensions were measured, these being usefulness, confidence and aversion. Wong (2002) and Davis (1989) defined usefulness as the student teachers' beliefs in the enhancement of the quality of their academic or non-academic related work by using a specific system. Confidence and aversion were defined as the student teachers' feelings of uncertainty and strong dislike respectively in using the Internet, specific software applications, other general software applications as well as the computer and IT in general for leisure or academic work respectively (Wong, 2002).

The questionnaire comprised 23 items and each item was accompanied by a Likert scale ranging from a score of 1 to 5, with 1 representing "strongly disagree" and 5 representing "strongly agree" for positive items (and vice versa for negative items). The questionnaire was validated by an independent course instructor. The questionnaire was pilot tested on a group of students (N= 29) who took the same course a semester before this study was conducted. No ambiguous items were found and the reliability for the 23 items was established at .87 using the Cronbach alpha, indicating good internal consistency.

Data analysis

An independent *t*-test was conducted to determine if there was any significant difference between females and males in terms of their prior computer experience before taking the EDU 3033 course. A one-way between-group multivariate analysis of variance (MANOVA) was performed on the pre- and post- test scores separately to examine if mean differences were significant between females and males in terms of usefulness, confidence and aversion before and after completing the course. Preliminary assumption testing was conducted to check for normality,

linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity. No serious violations were noted in any of the test scores. Analyses of variances (ANOVA) on each dependent variable were conducted as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at the adjusted alpha level of .003. It is important to note that the alpha levels reported for confidence and aversion were the cumulative sum of the separate alpha levels for both as these two variables have reciprocal effects and are, thus not considered mutually exclusive of each other. A paired-sample *t*-test was conducted and tested at the .05 level to evaluate if there was any significant difference between scores from Time 1 and Time 2 in respect of the three dependent variables. The analysis was conducted separately for both females and males, to examine if female and male students' attitudes were more positive after completing the EDU 3033 course.

Results

The independent *t*-test did not yield any significant difference between the mean scores of the female (M= 1.81; SD= 1.96; S.E.=0.23) and those of the male respondents [M=1.60; SD= 1.91; S.E.=0.36; t(100)= .485, p= .628] in respect of their prior computer experience. This suggests that both genders had almost equal prior computer experience before enrolling in EDU 3033.

Pre-test Gender Differences

Based on MANOVA, the pre-test mean scores did not show any statistical significant difference between females and males on the combined dependent variables (usefulness, confidence and aversion): $F(3,98)= .259$, $P= .855$; Wilks' Lambda= 0.992, partial eta squared= 0.008. This means that none of the three dependent variables reached a statistical significance even though female participants recorded slightly higher mean scores than male participants in these variables.

Table 1: Pre-test Differences between Females and Males

	Females		Males				
Dependent variables	Mean	S.D.	Mean	S.D.	F	*p*	Partial Eta Squared
Usefulness	38.81	4.48	38.75	5.07	.002	.961	.000
Confidence	23.70	3.52	23.66	4.43	.003	.958	.000
[#]Aversion	26.32	2.73	25.80	3.59	.631	.429	.006

[#]A high score represents low aversion
*significant at $p<.003$

Post-test Gender Differences

The post-test mean scores also did not show any statistical significant difference between female and male participants on the combined dependent variables: $F(3,98)= .259$, $P= .992$; Wilks' Lambda= 0.999, partial eta squared= 0.001. No significant differences were found between the mean scores of the females and the males in respect of the three variables (usefulness, confidence and aversion towards IT) after completion of the EDU 3033 course.

Table 2: Post-test Differences between Females and Males

	Females		Males				
Dependent variables	Mean	S.D.	Mean	S.D.	F	*p*	Partial Eta Squared
Usefulness	42.77	4.46	42.55	4.49	.048	.826	.000
Confidence	25.23	5.58	24.90	4.77	.082	.776	.001
[#]Aversion	42.86	8.15	42.52	9.07	.030	.863	.000

[#]A high score represents low aversion
*significant at $p<.003$

Effects of the EDU 3033 Course on Gender

Two paired sample *t*-test were conducted to examine the effect of one semester of the EDU 3033 course on female and male student teachers' attitudes toward IT. The results showed significant differences in the three dimensions of attitudes towards IT for females but only in two dimensions for males (Table 3).

For females, there was a statistically significant difference between the mean scores from Time 1 (M= 38.81; S.D.= 4.48) and Time 2 (M= 42.77; S.D.= 4.45), $t(72)$= -7.196, p<.0005 for usefulness. The analysis also found a statistical difference between the mean scores from Time 1 (M= 23.70; S.D.= 3.52) and Time 2 (M= 25.23; S.D.= 5.58), $t(72)$= -2.545 , p=.013 for confidence as well as the mean scores from Time 1 (M= 26.32; S.D.= 2.73) and Time 2 (M= 42.84; S.D.= 8.15), $t(72)$= -18.885, p<.0005 for aversion.

For males, a statistically significant difference was detected between the mean scores from Time 1 (M= 38.76; S.D.= 5.07) and Time 2 (M= 42.55; S.D.= 4.48), $t(28)$= -4.462, p<.0005 for usefulness as well as the mean scores from Time 1 (M= 25.80; S.D. = 3.59) and Time 2 (M= 42.52; S.D.= 9.07), $t(28)$= -10.820, p<.0005 for aversion. However, no statistical difference was detected between the mean scores from Time 1 (M= 23.66; S.D.= 4.43) and Time 2 (M= 24.90; S.D.= 4.76), $t(28)$= -1.415 , p=.168 for confidence.

Table 3: Mean Difference between Pre- and Post-tests

Subscale	Pre-test		Post-test		t	P
	M	*S.D.*	*M*	*S.D.*		
			Females (n=73)			
Usefulness	38.81	4.48	42.77	4.45	-7.20*	.000
Confidence	23.70	3.52	25.23	5.58	-2.55*	.013
Aversion	26.32	2.73	42.84	8.15	-18.89*	.000
			Males (n=29)			
Usefulness	38.76	5.07	42.55	4.48	-4.46*	.000
Confidence	23.66	4.43	24.90	4.76	-1.42	.168
Aversion	25.80	3.59	42.52	9.07	-10.82*	.000

*significant at p<.005

Discussion

The results of this study do not support the assumption that there are significant gender differences in the attitudes of student teachers at UPM towards IT. This is because no significant difference in attitudes was detected between females and males before their enrolment in the EDU 3033 course. The results suggest that gender disparity does not exist even though the student teachers had no formal exposure to IT prior to taking the course. Perhaps this was because they possessed almost equal prior computer experience before their enrolment in the course, with most of them having at least one year of relevant experience. This is evident from the earlier *t*-test conducted where no significant difference was detected between females and males in terms of their prior computer experience measured in years. It is important to note that these student teachers' prior computer experiences were primarily acquired informally through the existence of computer clubs in most Malaysian schools. It is therefore very likely that they were exposed only to the basics of word processing software in such an informal learning environment. It is also unlikely that they acquired their computer experience from the home because most of the participants shared almost the same social background where the availability of home computers was limited.

In Malaysian lower secondary schools, the subject "Computer in Education" has been introduced over the last four years as a non-examination subject and these schools are equipped with adequate computer facilities to teach this subject to their students. Generally, almost all secondary schools in Malaysia have at least one computer laboratory equipped with a minimum of 15 personal computers. Lower secondary students are exposed to the fundamentals of productivity tools for at least 40 minutes per week. Most of the teachers conducting this laboratory class have no formal prior training on the use of IT related tools and applications. They have been exposed only to the in-service courses conducted by relevant authorities. This means that the student teachers who participated in this study did not receive any formal IT training while in school.

Likewise, no significant difference in attitude was detected between females and males after the completion of the EDU 3033 course. This suggests that exposure to the IT course had no effect on gender disparity between females and males. Interestingly, even after gaining more IT knowledge and using it increasingly for academic and non-academic purposes, both females and males participants showed equal interest in the subject. They agreed that IT was useful to them because the productivity tools, such as word processing, spreadsheets and database software applications, could enhance and improve the quality of their academic work and presentation. They also had a positive impression of Internet technology as it has the ability to improve their communication skills with peers for personal or educational purposes.

The results of the first MANOVA analysis did not indicate any apparent gender disparity between the female and male student teachers despite their limited knowledge on IT prior to pursuing a degree programme at UPM. The results of the MANOVA analysis also did not indicate any apparent gender difference after both females and males have been exposed to a formal IT training course. This suggests that both genders acquired almost the same levels of knowledge and skill and had similar attitudes and perceptions towards the use of IT tools and applications. These results concurred well with those of Chen (1985) who found that both females and males, with almost equal amounts of computer experience, responded similarly to computer exposure. The results of this study are, however, contradictory to the findings of Houtz and Gupta (2001), Shashaani and Khalili (2001) and Broos (2005) which found that females and males differed significantly in many ways in terms of IT related matters. However, caution is called for when comparing the results of this study with that of the earlier studies because of the different methods and instruments used. A definitive conclusion cannot be made unless the same instruments and methods are utilised each time.

The paired sample *t*-test results showed that at the end of the course, both females and males expressed enhanced positive attitudes and less negative attitudes towards IT usage. The biggest difference for both females and males was in the aversion dimension which showed that the magnitude of their strong dislike toward IT was greatly reduced at the end of the course. At this stage, both genders also agreed more strongly that IT was useful for them. They were also more inclined to agree that IT was valuable to them as students primarily due to the enhancement in the quality of their academic work. However, only females exhibited significantly more confidence in IT at the end of the course. This is surprising as earlier studies by Houtz and Gupta (2001) and Shashaani and Khalili (2001) showed otherwise with females exhibiting lower confidence than males in their ability and confidence to use computers. The higher confidence level exhibited by females in this study could be due to the age difference. In this study, female participants were slightly younger than their male counterparts. Age could have played a role in enhancing confidence among the younger female participants (Kirkpatrick & Cuban, 1998; Jennings & Onwuegbuzie, 2001). Another possibility could be the effect of the role model. The instructor for this course was a female instructor and her presence during the entire duration of the course could have increased the female students' confidence level.

With the exception of the confidence dimension, the results of this study also support the argument that IT experience gained from undergoing a course can improve the attitudes of both genders towards computers. The students were more skilful and knowledgeable at the end of the course. The findings also support the view that computer experience is gender-based as the increase in IT confidence over time assumed different patterns for females and males. In other words, gender interacts indirectly with computer experience by influencing IT confidence. The results run parallel to the findings of Broos (2005) and Todman (2000) which found that such experience could help reduce the anxiety level of males more than that of females.

Limitations of Study

It should be noted that the ratio of females to males who participated in this study was unequal and the number of participants involved was relatively small (N=102). These factors could pose a threat to the results generated from the MANOVA analysis. Based on the recommendations by Pallant (2001), the number of cases in each cell should be more than the number of dependent variables. The minimum number of cases in each cell for this study was three (the number of dependent variables). In this study, the number of cases per cell far exceeded the minimum number of cases set.

The fact that there were many more females than males in the particular course was unavoidable. This is because there are more female than male undergraduate students at UPM at the ratio of 60:40. It would have been more appropriate if this study was to be based on a more balanced ratio of females to males. Future studies should consider using the stratified sampling method to get a more representative sample. It is also recommended that the sample size be increased for future studies.

It is important to note that this study was preliminary and exploratory in nature. All data collected was based entirely on the honesty and the perceptions of participants regarding their attitudes towards IT. A further limitation of this study was that it provided only a "snapshot" of the time when data was collected. It must also be recognised that the participants involved were undergraduate students majoring in education at a public university and had volunteered to participate in this study. Clearly, this was a self-selected group who might have possessed a different set of expectations compared to the general body of student teachers. Therefore, caution must be taken when generalising any findings for the entire population at the faculty where this study was conducted.

Conclusion

The findings of this research suggest that gender does not have an impact on the attitudes of female nor male student teachers towards IT when the same amount of exposure is given to both groups. These findings, however, would apply only when these student teachers possess equivalent level of IT experience and are homogenous in their background knowledge and skill prior the exposure as was the case in this research group. In other words, when the amount of IT experience is controlled, females and males respond equally in terms of attitude towards IT. When detailed dimensional analyses of attitude were conducted in terms of confidence, usefulness and aversion on the part of the students, the dimension of aversion recorded the biggest improvement which indicated that the magnitude of their strong dislike toward IT was greatly reduced at the end of the course. There was also a significant difference in the aversion and usefulness dimensions for both genders at the end of course, an indication that the course played a role towards improving the attitudinal measurement in these two dimensions. However, in respect of confidence, only female participants exhibited an enhanced confidence level. The confidence level of the males remained the same despite the exposure. In general, the results of this study suggest that there is no obvious gender disparity in the student teachers' attitude towards IT after an exposure to a comprehensive IT course. These student teachers have a very important role to play when they graduate and embark on their teaching profession in Malaysian schools. The relevant educational authorities, students and society at large can look forward to the future positively knowing that the teachers possess positive attitudes towards the use of IT in their instructional approaches regardless of their gender.

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Appendix A

A Survey on Attitudes towards Information Technology

Thank you for taking the time to complete this survey. Your responses will provide valuable insight into student-teachers' attitudes towards Information Technology. Please answer each question in the following three sections to the best of your ability.

Please complete all three sections by placing checkmarks in the appropriate boxes and filling in the blanks for written answers.

SECTION 1: Background
The purpose of this section is to collect some basic information about your background.

1.1	Age		_____years
1.2	Matriculation Number		_____
1.3	Gender	☐	Male
		☐	Female
1.4	Do you have experience using computers?	☐	Yes (Please proceed to question 1.5)
		☐	No (Please proceed to Section 2)
1.5	How many years have you been using computers?		_____years

SECTION 2: Attitudes toward Information Technology
The purpose of this section is to assess your attitudes towards Information Technology

		Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
2.1	The use of electronic mail makes it easier to contact my friends.	☐	☐	☐	☐	☐
2.2	The Internet is useful when searching for information.	☐	☐	☐	☐	☐
2.3	Word processing software allows me to edit my work more frequently.	☐	☐	☐	☐	☐
2.4	My writing is of quality when I use word processing software.	☐	☐	☐	☐	☐
2.5	Database software makes it easier to manage information.	☐	☐	☐	☐	☐
2.6	Database software allows me to keep information systematically.	☐	☐	☐	☐	☐
2.7	My presentation is more effective when I use presentation software.	☐	☐	☐	☐	☐
2.8	My presentation is more interesting when I use presentation software.	☐	☐	☐	☐	☐
2.9	Spreadsheet software allows me to do calculations easily.	☐	☐	☐	☐	☐
2.10	Spreadsheet software allows me to create various charts easily.	☐	☐	☐	☐	☐
2.11	I feel that I will not master advance computer software skills.	☐	☐	☐	☐	☐

2.12	I feel that using a computer is difficult for me.	☐	☐	☐	☐	☐
2.13	The challenge of solving problems with computers does not appeal to me.	☐	☐	☐	☐	☐
2.14	I am not skilful in using a computer.	☐	☐	☐	☐	☐
2.15	I can get good grades in Information Technology courses.	☐	☐	☐	☐	☐
2.16	I have great confidence when attending Information Technology courses.	☐	☐	☐	☐	☐
2.17	I feel that I take a long time understanding some issues taught in Information Technology classes.	☐	☐	☐	☐	☐
2.18	Only intelligent people can use Information Technology.	☐	☐	☐	☐	☐
2.19	I will never take a job where I have to work with Information Technology.	☐	☐	☐	☐	☐
2.20	The use of information technology prevents me from being creative.	☐	☐	☐	☐	☐
2.21	Only people who are skilled should use Information Technology.	☐	☐	☐	☐	☐
2.22	Learning about Information Technology is a waste of my time.	☐	☐	☐	☐	☐
2.23	The time spent on learning Information Technology is better spent on learning something else.	☐	☐	☐	☐	☐