

# Knowledge of and Attitudes towards Using the Internet for Learning: Gender and Discipline

Bader Alfelaj<sup>1</sup>, Abdullah Aldhafiri<sup>2</sup>

<sup>1,2</sup>Researchers, <sup>1,2</sup>Ministry of Education, Kuwait

---

**Abstract:** In Kuwait, teachers and educators must encourage students to use the Internet more for their own sake. However, I believe it is first of all important to explore students' knowledge of and attitudes towards accepting and using the Internet, before actually asking them to use it. Most importantly, we need to determine the extent to which gender and discipline differences impact the acceptance and use of the Internet. Therefore, this study aims to explore knowledge of and attitudes towards the significance of the Internet, when endeavouring to enhance male and female students' learning at (PAAET) in Kuwait. Furthermore, the impact of gender and discipline differences on such acceptance and use will also be explored at PAAET. The sample selected was a convenience sample, consisting of 30 (15 male and 15 female) pre-service teachers from different backgrounds (i.e. in terms of gender and discipline). A questionnaire was used to collect the data. The findings reveal that there were no differences related to students' gender on levels of knowledge. However, there were differences related to discipline. Furthermore, the findings show differences between male and female students as regards their attitudes to using the Internet, with the difference in favour of male students. Although it is recognised that the range and generalisability of the study is limited, due to its small and non-representative sample, this study could be considered as an apt initial inroad into the study area, which could be useful in future, providing clues for future research in this specific field.

**Keywords:** Knowledge of, attitude, Internet, gender and discipline.

---

## I. INTRODUCTION

Globally, in the last twenty years, a great deal of attention has been drawn by educators and researchers towards using the Internet to support teaching and learning methods. However, in spite of the rising interest and use of the Internet by significant numbers of individuals in many educational institutions around the world, the use of the Internet by pre-service teachers at PAAET remains limited. This is mainly due to the many challenges. For instance, the availability of computers there is limited and not commensurate with the number of students. There is also a lack of maintenance, limited time for using and accessing the Internet and a lack of Wi-Fi services [1]. Working as a part time lecturer at College of Basic Education (CBE) in (PAAET) for two years made me aware of the deficiencies in the efficient use of the Internet in that environment.

Warf and Vincent [2], have identified and explained some of the obstacles limiting the use of the Internet in the Arab region. One obstacle is the widespread predominance of English and corresponding use of the Latin alphabet in this domain. Further issues which have delayed the diffusion of the Internet include "low Arab literacy rates, and restrictive gender relations that keep the proportion of female users low" [2]. Other factors retarding the spread of the Internet in the Arab world consist of the relatively high cost of Internet access [3]. However, discussing such obstacles to using the Internet in the Arab region in greater detail and more extensively is outside the scope of this investigation.

One good point which could be made here is that adequate knowledge and positive attitudes are important factors for achieving an acceptable level of Internet use [4]. If students have poor knowledge, negative attitudes, or inaccurate perceptions of Internet use, it is expected they will face difficulties using it to serve their learning. This introduction is now followed by a brief review of previous studies on embedding the Internet in the lives of tertiary students.

## 2. LITERATURE REVIEW

Ogan et al. [5], conducted a study in Indiana University, US, on embedding the Internet in the lives of tertiary students. The findings suggest that the university students concerned used the Internet more than four hours a day. All the students were of the opinion that the Internet had a positive impact on their lives. For example, for news and information, 64% of the students declared that they preferred to consult Internet, rather than offline sources.

In another study at a Malaysian University, Sam et al. [6], carried out a study on mixed gender undergraduate students (i.e. 81 female and 67 male) to examine differences in levels of computer anxiety, computer self-efficacy and attitudes toward the Internet. One of the most significant findings is that the students used the Internet widely for educational purposes, e.g. e-mail communication, downloading E-resources and doing research. Furthermore, gender did not account for differences in Internet use patterns, computer self-efficacy, computer anxiety, or attitudes towards the Internet. The above authors challenged claims of the superiority of men over women in Internet use. Some researchers (Brosnan & Lee, [9], Balka & Smith [7], Li & Kirkup, [8]) reported that males have more experience, engage in more computer use and are more self-confident about their computer skills than women are.

However, there are differences in students' usage levels which are based on the study discipline. For example, students from the Faculty of Computer Science and Information Technology (FCSIT) and the Faculty of Applied and Creative Arts (FACA) were found to use the Internet longer than other students. This shows that tertiary students in general, at least in this context, have sufficient knowledge and a positive attitude to using the Internet, in spite of their gender, but their area of study can have either a positive or negative effect on their Internet usage.

Other researchers, Li and Kirkup [8], investigated differences between Chinese and British students in their use of and attitudes to the Internet, alongside gender differences. They found that, "Men played more computer games than women; Chinese men being the most active games players. Men in both countries were more self-confident about their computer skills than women, and were more likely to express the opinion that using computers was a male activity and skill than were women" [8].

It is clear that the results from the last two studies mentioned are contradictory, with Sam et al. [6], at least tacitly, failing to find any impact of gender on the acceptance and use of the Internet. Li & Kirkup [8], however, claim the opposite. Hopefully, the result of this study could resolve such a contradiction and offer a clearer picture of the impact of gender differences on accepting and using the Internet.

Regardless of the above, Peng et al. [10], point out that university students generally have a positive attitude to the Internet and adequate Internet self-efficacy. They further suggest that students at this level view the Internet as a functional tool/technology. In their study, they report that male students have a more positive attitude to the Internet than their female peers. What is more, Peng et. al. [10], indicate that those students who consider the Internet as a leisure tool demonstrate more positive attitudes and communicative self-efficacy than students who merely use the Internet as a functional tool. With regard to perceptions of the Internet, male students consider the Internet as a toy, while female students tend to consider it as a tool.

Locally, in the same academic institution under study (PAAET), Alayyar et al. [11], found that 96% of participants (78 pre-service female science teachers in total) had an Internet connection at home and fewer (about 88%) had access to a computer in their department at PAAET. Most importantly, participants generally showed a positive attitude to Internet use, once they had received adequate support. However, it is questionable whether the male pre-service teachers at PAAET have the same facilities (e.g. enough computers and Internet access). It must be borne in mind that, in Kuwait, state-funded schools and higher academic institutions, like Kuwait University and PAAET, are forced by law to apply gender segregation [12].

## 3. AIMS OF THIS STUDY

The purpose of this small-scale enquiry is to explore knowledge of and attitudes to the significance of the Internet for enhancing male and female students' learning at PAAET in Kuwait. This study focuses on the following:

1. The students' knowledge of and attitudes towards using the Internet to enhance their learning.

- The impact of background variables, gender and subject specialism upon male and female students' knowledge of and attitudes towards the Internet.

***The Administration of Multi-item Instruments:***

Utilising short multi-item questionnaire instruments, the constructs shall be operationalised as follows:

- Knowledge of Internet issues: male and female students' ability to correctly answer 10 closed, multiple-choice questions, based upon the topic of the Internet and five questions with 'right or wrong' answers. A high score will indicate high levels of knowledge of the significance of the Internet's impact on enhancing learning and a low score will indicate low levels of knowledge.
- Attitudes to Internet-related issues: male and female students' self-reported responses to 14 statements regarding Internet-related issues. For each statement, the respondents were required to report their level of agreement on a five point Likert scale (1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, 5=strongly disagree).

Regarding the overall design of the questionnaire, it was self-administered and included open questions about background issues, as well as closed questions. The respondents were asked to circle or tick their answers from various options. Oppenheim [13], indicates some advantages of these types of questions, such as their being quick to answer with no need to spend time writing; they are useful for testing specific hypotheses and the quantification is straightforward. However, there are disadvantages, such as a loss of spontaneity and expressiveness on the side of the respondents. As regards the administration of the questionnaire, it was provided in person and with the current class tutor. All participants were asked to complete the questionnaire independently and a brief description of the purpose of the study was presented, with instructions for filling out the questionnaire being made clear to the respondents.

***Background Data:***

The respondents' background data shall be collected on:

- Gender: Male and female.
- Subject Specialism: Special Education, Computer Science, Family Science, Arabic Language, Kindergarten Teaching and Islamic Studies.

***Questionnaire Development:***

The development of the questionnaire, knowledge and attitudes (see Appendix 1 and 2), matching the above specifications, followed by three successive phases:

- Consultation with experts: One expert was consulted on the significance of the Internet for learning: (a) the Head of the Educational Technology Department at (PAAET).
- Literature searches: Educational technology journals explored for existing attitudes to the Internet and knowledge-testing instruments.
- Pilot distribution: A preliminary version of the questionnaire was distributed to a pilot sample of six respondents, this group being mixed-gender and across specialisms at the Education Department in PAAET. This version and the final version were translated into the students' language, which is Arabic.

***Hypotheses:***

Each hypothesis refers to operationalised knowledge and attitudes, as mentioned above.

H1: There will be differences between students' genders on the level of knowledge concerning the significance of the Internet for learning.

H01: No differences will appear in relation to students' gender and their levels of knowledge of the significance of the Internet for learning.

H2: Students from different disciplines will demonstrate significant differences in their level of acceptance and use of the Internet for learning.

H02: No significant differences will occur between students from different disciplines as regards the acceptance and use of the Internet for learning.

H3: There will be differences between male and female students, related to their attitudes to using the Internet for learning.

H03: There are no differences between male and female students in their attitudes to using the Internet for learning.

#### 4. METHODOLOGY

##### *Measuring Instruments:*

The study adopted a descriptive methodology of inferential analysis and a questionnaire was distributed to a group of individuals to measure the hypothesis under study. Findings were drawn from the results of the questionnaire (see Appendix 1). The questionnaire, as the study's main instrument, comprised a number of questions about gender, discipline and other personal information on the respondents. It also included 14 items intended to measure behaviour and attitudes to the Internet amongst the sample, with these attitudes being classified using a five point Likert scale, as follows:

5=	SA	= I strongly agree with the statement
4=	A	= I agree with the statement
3=	N	= I neither agree nor disagree with the statement
2=	D	= I disagree with the statement
1=	SD	= I strongly disagree with the statement

Moreover, in order to measure 'knowledge', the questionnaire included 15 items, in two sets of questions:

- A. The first set asked the respondents to circle the letter indicating the correct answer, as each question was assigned four potential answers – only one being correct. There are 10 measurement items in this set.
- B. The second set consists of statements that can be indicated as either true or false. This set includes five items.

Sample answers were checked (see Appendix 2). However, the correct answers for the 15 items – the total number of items contained in both the first and second set of questions - are presented in the Appendices. In short, this study instrument contains various variables (e.g. gender, discipline, attitudes and knowledge).

#### 5. SAMPLE

The selected sample consisted of 30 participants (15 male and 15 female), living in Kuwait and enrolled at PAAET as pre-service teachers. They had various background variables (gender, specialism). Obviously, the gender categories were just male and female, but specialisms varied between Special Education, Computer Science, Family Science, Arabic, Kindergarten Teaching and Islamic Studies. The students were in their first academic year and their ages at this stage normally range between 18 and 20 years old. It must also be mentioned that Educational Technology courses have more students than any other courses at PAAET, because they are general courses, on which many students from different specialisms need to enrol. Therefore, there can be as many as 50 or 60 participants for each group (male and female). Consequently, the questionnaire was distributed to students randomly, although this cannot be held as a random sample from which results can be generalized, as this study is a small scale empirical enquiry. Hence, it is considered as a convenience sample.

## 6. OUTLINE OF THE PROCEDURE

Data from the sample were entered after correction into the statistical programme SPSS, version 17 to conduct a proper analysis of the hypotheses being proposed. Appropriate statistical tests were conducted for each of the study's hypotheses.

### *Reliability and Validity:*

Data validity was verified using a correlation coefficient between the scale for the ultimate degree of both attitudes = 14 items and knowledge scale = 15 items.

### **First - The Attitudes Scale (b):**

**TABLE I: RELIABILITY STATISTICS**

Cronbach's Alpha	No. of Items
.279	14

**TABLE II: ITEM-TOTAL STATISTICS**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b1	47.9333	15.375	-.140-	.365
b2	46.0333	13.482	.158	.236
b3	45.6667	14.713	.041	.278
b4	45.4667	14.257	.251	.236
b5	45.4667	15.223	-.080-	.319
b6	45.8000	10.717	.556	.035
b7	47.5333	16.257	-.236-	.398
b8	45.7667	13.357	.240	.211
b9	45.6333	15.757	-.160-	.333
b10	46.0667	14.202	.046	.280
b11	45.9667	10.723	.503	.049
b12	46.4333	11.978	.178	.213
b13	47.9000	14.852	-.044-	.313
b14	45.3000	14.769	.040	.278

However, it seems that the value of Cronbach's Alpha is too small and this is due to the instability of some of the items in this scale. This requires deleting those suspect items from the scales because of their instability and re-conducting the analysis. The value of the items exceeded the total value of Cronbach's Alpha for the scale. Specifically, these items were b1-b5-b7-b13. After these items were excluded, the results were as follows:

**TABLE III: RELIABILITY STATISTICS**

Cronbach's Alpha	No. of Items
.641	10

**TABLE IV: ITEM-TOTAL STATISTICS**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
b2	35.8000	15.131	.307	.616
b3	35.4333	16.254	.268	.624
b4	35.2333	16.875	.268	.628
b6	35.5667	12.323	.684	.516
b8	35.5333	15.430	.334	.611
b9	35.4000	16.524	.204	.634
b10	35.8333	16.075	.164	.647
b11	35.7333	13.237	.485	.569
b12	36.2000	14.372	.200	.661
b14	35.0667	16.409	.258	.626

The above results are based on the total value of the stability coefficient being raised and the items after deletion being measured according to the purpose for which they were intended.

## 2 - Knowledge Scale (c):

**TABLE V: RELIABILITY STATISTICS**

Cronbach's Alpha	No. of Items
.691	15

TABLE VI: ITEM-TOTAL STATISTICS

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item - Total Correlation	Cronbach's Alpha if Item Deleted
c1	9.23333	6.392	.369	.666
c2	9.00000	6.690	.286	.678
c3	9.56667	8.116	-.324-	.735
c4	9.03333	7.137	.090	.705
c5	9.60000	7.559	-.033-	.706
c6	8.90000	5.955	.743	.619
c7	8.96667	6.033	.616	.632
c8	8.90000	6.852	.272	.679
c9	8.90000	6.093	.666	.629
c10	9.13333	6.189	.460	.652
c11	8.76667	6.737	.604	.656
c12	8.86667	6.257	.630	.637
c13	8.93333	7.375	.016	.710
c14	9.00000	6.414	.409	.660
c15	9.00000	7.655	-.107-	.728

It may be noted that, on the knowledge scale, the value of consistency is 69.1%, which is good, but there were some items with a value which was greater than the total value of the stability and this required them to be deleted and the test to be re-conducted. These items were c3-c5-c4-c15-c13. After reiterating the analysis, it appears that the total value of the coefficient Alpha is 82.8%.

TABLE VII: RELIABILITY STATISTICS

Cronbach's Alpha	No. of Items
.828	10

TABLE VIII: ITEM-TOTAL STATISTICS

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item - Total Correlation	Cronbach's Alpha if Item Deleted
c1	6.8667	6.120	.353	.832
c2	6.6333	6.102	.410	.823
c6	6.5333	5.637	.757	.788
c7	6.6000	5.766	.600	.803
c8	6.5333	6.395	.342	.828
c9	6.5333	5.706	.717	.792
c10	6.7667	5.840	.480	.817
c11	6.4000	6.386	.635	.810
c12	6.5000	5.845	.696	.796
c14	6.6333	6.171	.378	.827

The above results are based on the total value of the stability coefficient being raised and items after deletion being measured according to the purpose for which they were intended. The number of items comprised in this scale is 10.

## 7. ETHICAL ISSUES

When conducting any research, especially in the humanistic sciences, there will always be ethical issues. These issues relate to the study participants, who, in this case, were all mature and understood the purpose of the study and the questionnaire from an explicit statement presented to them in written form and attached to the questionnaire (see Appendix 1). According to the Ethical Guidelines for Educational Research (BERA) [14], it is crucial that all research must ensure permission from the participants to reveal their personal information. Furthermore, it is good practice to debrief the participants on the outcomes at the conclusion of the research. Consequently, it was made clear to the participants that they had the right to ask to see the correct answers after finishing the study. Another significant issue is the participants' entitlement to privacy (which is applied in this study). This implies the 'confidential and anonymous treatment of their data' [14]. The questionnaire distributed in this study did not ask the participants about their identity and were designated numerical codes for administration purposes. All data were handled with care all the way through and remained secure and confidential, as prescribed by the Data Protection Act [15], with the researcher being the only one with access to them. Moreover, all participants were made aware that all copies of the questionnaire would be destroyed once the study was finished, as recommended by Bell [16].

## 8. THE RESULTS

Based on the 'Test of Normality', it was found that the value of sig. is greater than 0.05. Therefore, it could be said that the data has normal distribution in this case. However, if the value of sig. – in the case of the knowledge scale – is greater than 0.05, then data distribution is not normal, as its value is 0.000. On the other hand, in the case of the attitude scale, the value of sig. is greater than 0.05 and this indicates that the distribution is normal. See TABLES IX and X.

TABLE IX: KNOWLEDGE TESTS OF NORMALITY

Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total Knowledge	.243	30	.000	.883	30	.003

aLilliefors Significance Correction



TABLE X: ATTITUDE/TESTS OF NORMALITY

TESTS OF NORMALITY

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total Attitude	.126	30	.200*	.977	30	.733

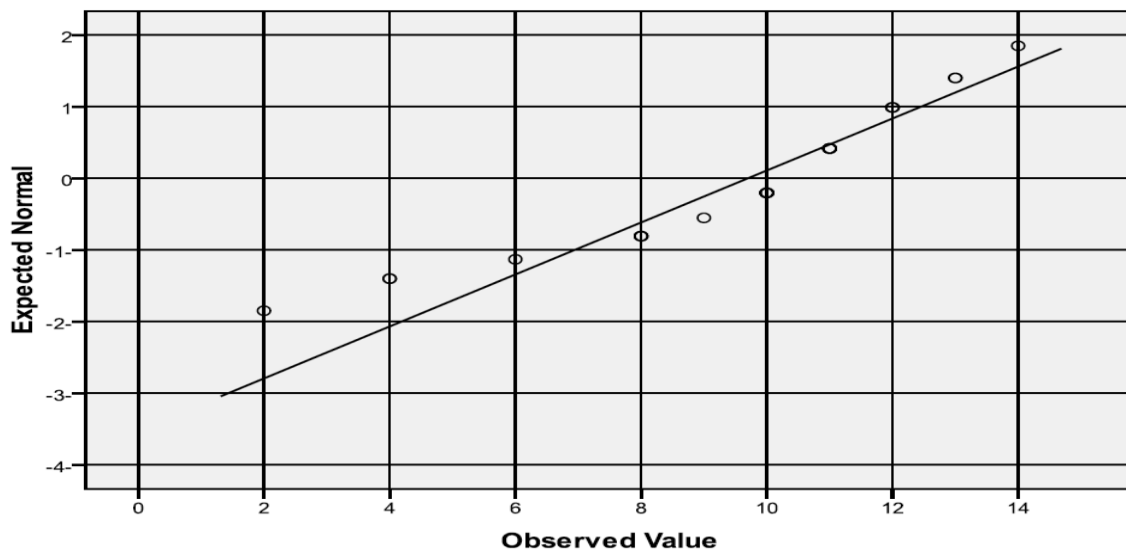
aLilliefors Significance Correction

\*This is a lower bound of the true significance

By examining the Graph, it seems apparent that the data are concentrated around the straight line. Therefore, it is distributed according to the normal distribution for both scales: the attitude scale and the knowledge scale. Nonetheless, some data are lying further away on the scale of knowledge (see Graphs I and II).

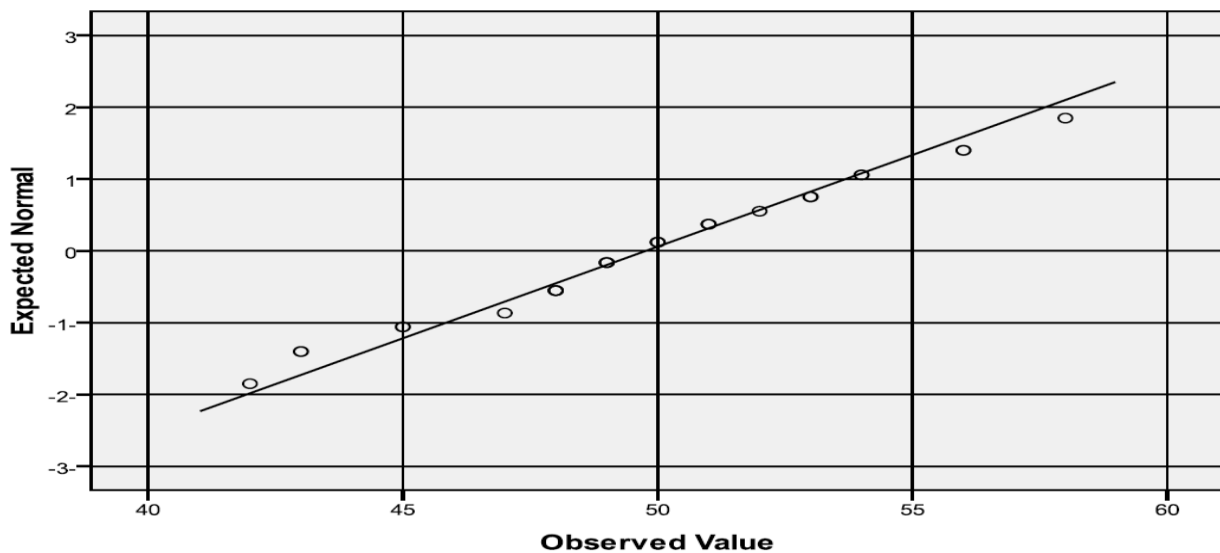
GRAPH I

Normal Q-Q Plot of total Knowledge



GRAPH 2

Normal Q-Q Plot of total attitude



Since the sample consisted of 30 persons or less, then the test statistics are 'T', in the sense that we will use and conduct the T-test.

**Hypothesis 1:**

H1: There will be differences between students' genders on the level of knowledge concerning the significance of the Internet for learning.

H01: No differences will appear in relation to students' gender and their levels of knowledge of the significance of the Internet for learning.

**Results:**

To explore the results of the hypothesis, the Independent Samples Test was used and the results are as shown in **TABLE XI** and **XII**:

**TABLE XI: TOTAL KNOWLEDGE SCORE FOR MALES AND FEMALES**

Group Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Total Knowledge Male	15	8.8667	3.09069	.79801
Female	15	10.5333	2.16685	.55948

**TABLE XII: INDEPENDENT SAMPLES TEST**

Independent Samples Test

		Levene's Test for Equality of Variances		T-test for Equality of Means						
								95% Confidence Interval of the Difference		
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total Knowledge	Equal variances assumed	1.758	.196	-1.710	28	.098	-1.66667E0	.97460	-3.66304	.32971
	Equal variances not assumed			-1.710	25.085	.100	-1.66667E0	.97460	-3.67355	.34021

According to **XI**, which illustrates the value of the arithmetic mean (M) and standard deviation (SD) for both males (N = 15) and females (N = 15), the mean for males is 8.88 and the standard deviation is 3.09, while the mean for females is 10.53 and the standard deviation is 2.16. In addition, based on **TABLE XII**, which shows the results of the Independent Samples Test, it seems that the value of 'T' is 1.710, which is not statistically significant at a level of less than or equal to 0.05. Hence, it can be concluded that:

No differences will occur related to students' gender on the levels of knowledge of the significance of the Internet for learning, and therefore, H01 is accepted and H1 is rejected.

**Hypothesis 2:**

H2: Students from different disciplines will demonstrate significant differences in their level of acceptance and use of the Internet for learning.

H02: No significant differences will occur between students from different disciplines as regards the acceptance and use of the Internet for learning.

**TABLE XIII: ONE-WAY ANOVA**

ANOVA

Total Knowledge

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	67.060	4	16.765	2.735	.05
Within Groups	153.240	25	6.130		
Total	220.300	29			

**TABLE XIV: LCD test**

Multiple Comparisons

Total Knowledge LSD

(I) a2 Specialism	(J) a2 specialism	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Computer Sc.	Special Ed.	-2.25000-	1.59813	.171	-5.5414-	1.0414
	Family Science	-.58333-	1.59813	.718	-3.8747-	2.7081
	Arabic Lang.	-3.72619-*	1.17748	.004	-6.1513-	-1.3011-
	Islamic Studies	-.78333-	1.31785	.558	-3.4975-	1.9308
Special Ed.	Computer Sc.	2.25000	1.59813	.171	-1.0414-	5.5414
	Family Science	1.66667	2.02149	.417	-2.4967-	5.8300
	Arabic Lang.	-1.47619-	1.70847	.396	-4.9948-	2.0425
	Islamic Studies	1.46667	1.80807	.425	-2.2571-	5.1905
Family Science	Computer Sc.	.58333	1.59813	.718	-2.7081-	3.8747
	Special Ed.	-1.66667-	2.02149	.417	-5.8300-	2.4967
	Arabic Lang.	-3.14286-	1.70847	.078	-6.6615-	.3758
	Islamic Studies	-.20000-	1.80807	.913	-3.9238-	3.5238
Arabic Lang.	Computer Sc.	3.72619*	1.17748	.004	1.3011	6.1513
	Special Ed.	1.47619	1.70847	.396	-2.0425-	4.9948
	Family Science	3.14286	1.70847	.078	-.3758-	6.6615
	Islamic Studies	2.94286	1.44968	.053	-.0428-	5.9285
Islamic Studies	Computer Sc.	.78333	1.31785	.558	-1.9308-	3.4975
	Special Ed.	-1.46667-	1.80807	.425	-5.1905-	2.2571
	Family Science	.20000	1.80807	.913	-3.5238-	3.9238
	Arabic Lang.	-2.94286-	1.44968	.053	-5.9285-	.0428

\*The mean difference is significant at 0.05

**TABLE XIII** demonstrates an analysis of the variance (one-way ANOVA) used to measure the hypothesis, based on two variables: knowledge and discipline. The analysis shows that the value of 'f' is statistically significant at a level less than or equal to 0.05 and so it may be concluded that there is a difference related to the study discipline.

More specifically, conducting post-hoc comparisons using LCD tests (see **TABLE XIV**) between the groups, where different disciplines are concerned (e.g. Computer Science, Special Education, Family Science, Arabic Language) revealed statistically significant differences between the groups, with the Mean Difference between those studying Computer Science and Arabic Language being 3.72. This difference is statistically significant at a level less than or equal to 0.05 and is in favour of the Arabic Language group. Therefore, considering this difference, hypothesis H2 is accepted, while hypothesis H02 is rejected.

**Hypothesis 3:**

H3: There will be differences between male and females related to their attitudes to using the Internet for learning.

H03: There are no differences between males and females related to their attitude to using the Internet for learning.

**TABLE XV: TOTAL 5 KNOWLEDGE SCORE FOR MALES AND FEMALES**

Group Statistics

	al Gender	N	Mean	Std. Deviation	Std. Error Mean
Total Attitude	Male	15	51.2000	3.93156	1.01512
	Female	15	48.3333	3.45722	.89265

**TABLE XVI: INDEPENDENT SAMPLES TEST**

Independent Samples Test

		Levene's Test for Equality of Variances		T-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total Attitude	Equal variances assumed	.560	.461	2.121	28	.043	2.86667	1.35178	.09768	5.63566
	Equal variances not assumed			2.121	2.755E1	.043	2.86667	1.35178	.09564	5.63770

According to **TABLE XV**, which illustrates the value of the arithmetic mean (M) and standard deviation (SD) for both males (N = 15) and females (N = 15), the mean for males is 51.2 and the standard deviation is 3.93, while for females, the arithmetic mean is 48.33 and the standard deviation is 3.45.

Based on **TABLE XVI**, which shows the results of the Independent Samples Test, it seems that the value of 'T' is 2.12, which is statistically significant at a level of less than or equal to 0.05. Hence, it can be concluded that:

There will be differences between males and females related to their attitudes to using the Internet for learning and this difference is in favour of males as the Mean Difference is 2.86 and in this case, the hypothesis H3 is accepted and the hypothesis H03 is rejected.

## 9. DISCUSSION

The results of the data reveal numerous findings. First of all, this investigation illustrates that there are no differences related to students' gender on the levels of knowledge of the significance of the Internet for learning. Luan et al. [17], support these findings in their study, where male and female student teachers' reactions to the Internet were sought. They found that there was no gender disparity in Internet usage.

The study also investigated the differences in the impact of disciplines on the acceptance and use of the Internet. The findings show that there is a difference related to the type of discipline. For instance, there are statistically significant differences between the Computer Science and Arabic Language groups, as the Mean Difference between them is 3.72 and this difference is statistically significant at a level less than or equal to 0.05, in favour of the Arabic Language group. These findings need deeper investigation for clarification. This could be achieved by preparing a new set of questions and interviewing a random sample of students specialising in Arabic Language and another specialising in Computer Science, in order to try and understand this bizarre result.

Another investigation conducted in this study was amongst male and female students, in relation to their attitudes to using the Internet for learning. The result shows a difference in favour of males, as the Mean Difference is 2.86. These findings reaffirm some of the studies mentioned earlier [10], [11].

## 10. LIMITATIONS

This study comes with a number of limitations which have major implications on generalisability and confidence in the findings. These limitations refer to the sample size and the instrument used to generate the data. Due to time restrictions, I could not use another instrument, such as an interview or direct observation to investigate the findings in depth. This small scale empirical enquiry could therefore be considered as an exploratory phase, which would allow for another community of practice (e.g. teachers, educators, researchers and policy-makers) at PAAET to comprehend the possible impact of gender and other principle differences on students' attitudes to the Internet.

## 11. CONCLUSION

Owing to the relatively small sample size, it was not possible to validate the instruments properly. Additional research is therefore needed, using larger samples and another instrument (e.g. interview), which will allow the instrument to be validated as thoroughly as possible and justify some of the strange findings which emerged. The data suggests that, in addition to using the Internet as a source of information, students also use it as a tool of communication. As noted above, there are no differences between tertiary students as regards knowledge of the Internet, while amongst the background variables (such as discipline) statistically significant differences emerged. Moreover, unsurprising findings came out from the data, which showed that males have a better attitude to the Internet than females and this finding is supported in a great deal of other research.

Noticeably, many students in academic institutions around the world rely on the Internet, or prefer doing research for their projects on the Internet, rather than visiting the library. They consider the Internet to be the fastest way of obtaining information. Moreover, many of them have been found to agree they should be given projects based on the Internet (see for example, Gordon et al. [18], Hong et al. [19], Englander et al. [20]). Hence, it is recommended that teachers at PAAET encourage their students when assigning tasks that involve Internet use. Discovering learners' knowledge and attitudes towards any new method, especially the Internet, is not an easy job, but is nevertheless vital to successful integration. Students therefore need to be trained, not only in skills such as scanning, skimming and eliminating unnecessary information, but also in how to overcome obstacles that might prevent them from using technology (the Internet) to enhance their learning. More research in this field is needed, especially at PAAET, in order to understand the perspectives of both teachers and students on the Internet.

### REFERENCES

- [1] B. Warf and P. Vincent, "Multiple geographies of the Arab Internet," *Area*, vol. 39, no. 1, pp. 83–96, 2007.
- [2] C. L. Ogan, M. Ozakca, and J. & Groshek, "Embedding the Internet in the Lives of College Students: Online and Offline Behavior," *Social Science Computer Review*, vol. 26, no. 2. pp. 170–177, 2007.
- [3] H. K. Sam, A. Ekhsan, A. Othman, and Z. S. Nordin, "Computer Self-Efficacy , Computer Anxiety , and Attitudes toward the Internet : A Study among Undergraduates in Unimas Purpose of the research," *Educ. Technol. Soc.*, vol. 8, no. 4, pp. 205–219, 2005.
- [4] R. Balka, E. Smith, *Women, Work and Computerization: Charting a Course to the Future*. Springer Science & Business Media, 2000, p. 307.
- [5] N. Li and G. Kirkup, "Gender and cultural differences in Internet use: A study of China and the UK," *Computers & Education*, vol. 48, no. 2. pp. 301–317, 2007.
- [6] M. Brosnan and W. Lee, "A cross-cultural comparison of gender differences in computer attitudes and anxieties: the United Kingdom and Hong Kong," *Computers in Human Behavior*, vol. 14, no. 4. pp. 559–577, 1998.
- [7] H. Peng, C. Tsai, and Y. Wu, "University students' self- efficacy and their attitudes toward the Internet: the role of students' perceptions of the Internet," *Educational Studies*, vol. 32, no. 1. pp. 73–86, 2006.
- [8] J. Alayyar, G. M., Fisser, P. & Voogt, "Developing technological pedagogical content knowledge in pre-service science teachers : Support from blended learning," *Australas. J. Educ. Technol.*, vol. 28, no. 8, pp. 1298–1316, 2009.
- [9] A. N. Oppenheim, *Questionnaire Design, Interviewing and Attitude Measurement*, Illustrate. Bloomsbury Academic, 2000, p. 312.
- [10] BERA, "Ethical Guidelines for Educational Research," British Educational Research Association. British Educational Research Association, London, pp. 1–11, 2011.
- [11] Data Protection Act, "Data Protection Act," UK Legislation, 1998. [Online]. Available: <http://www.legislation.gov.uk/ukpga/1998/29/contents>.
- [12] J. Bell, *Doing your Research Project*, vol. 3rd, no. 5. Open University Press, 2005, p. 267.
- [13] W. S. Luan, N. S. Fung, M. Nawawi, and T. S. Hong, "Experienced and inexperienced Internet users among pre-service teachers: Their use and attitudes toward the Internet," *Educational Technology and Society*, vol. 8, no. 1. pp. 90–103, 2005.
- [14] C. F. Gordon, L. P. (Linda P. Juang, and M. Syed, "Internet Use and Well-Being Among College Students: Beyond Frequency of Use," *Journal of College Student Development*, vol. 48, no. 6. pp. 674–688, 2007.
- [15] Y. Hong, X. Li, R. Mao, and B. Stanton, "Internet use among Chinese college students: implications for sex education and HIV prevention.," *Cyberpsychol. Behav.*, vol. 10, no. 2, pp. 161–169, 2007.
- [16] F. Englander, R. A. Terregrossa, and Z. Wang, "Internet use among college students: tool or toy?," *Educational Review*, vol. 62, no. 1. pp. 85–96, 2010.