Investigation undergraduate students' perceptions toward the Internet: case study on Iraqi undergraduate students

Asst. Lecturer. Maysoon Allawi Saleem
Al-Mustansirya University

Abstract:

This article presents a quantitative study on gender and subject of study differences in perceptions towards the usage of Information Technology (IT) related tools and applications meanly Internet. On the basis of Tsai [1] 4-Ts categories the research were conducted at three different universities with the capital city of Baghdad, Iraq. Two hundred twenty eight undergraduate students were involved as participants for this study, 100 students from humanity colleges 62 were female. The other 128 were from Dentistry College, Al-mustansirya University 86 of them were female. The study progressed through finding relations between the variables used. The findings of the analysis revealed that students tended to mainly perceive that the Internet was a Technology, and then Guiding-Tour and Tool have equal places depend on different factors, they placed fewer emphases on the Internet as a toy other findings within the same subject of study (e.g. Humanity students) gender factor was not significant, but with all participants (all colleges) gender factor was highly significant. Also found each group of participants using the Internet to fulfill their needs to complete their lack of knowledge for example Humanity student voted for internet as technology but scientific group voted as Tool.

Key wards: IT, Students' perceptions, Internet, Gender, 4-T categories.

عنوان البحث :

دراسة ميدانية بحثية عن دور تكنولوجيا المعلومات وبخاصة الانترنت في التعليم : عن طلبة الدراسات الأولية في العراق

الخلاصة

دراسة ميدانية و بحثية لمعرفة واقع حال طلبة الدراسات الأولية في العراق من ناحية دراسة الانترنت و ما هو رأيهم بالانترت و وما يضنونه يخد ، تضمنت الدراسة استبيان ورقي بـ ر ال يأخذ رأي الطالب بما يضنه بالانترنت ، يطلب من الطالب بتقسيم الدرجة من مئة على أربعة أصناف ، كم تضن الانترنت ل ـ

ا. تكنولوجيا

٢. أداة أو وسيلة للتعلم

٣. أداة للتسلية واللعب

٤. أداة للاستعلام عن المعلومات

وقد تضمن الاسّ يان بعض طلاب اربع كليات من ضمن الجامعات الرصينة الثلاثة في بغدا . كان عدد الطلاب ٢٢٨ طالب من ضمنه ١٠٠ طالب من طلاب الكليات الإنسانية ٦٢ من الإناث ٣٨ ذكور ، ٢٨ ا طالب من الكليات العلمية ٤٢ من الإناث والباقي ذكور). وتضمن الاستبيان برأي الطالب بتدريس ما ة الحاسبات بالكلية وبخاصة الانترنت .

بعد استكمال الاستبيان وإجراء كافة التحليلات الإحصائية المهمة عليها تبين ما يلي :

في ضمن الكلية الواحدة لا يوجد فرق بين الذكور والإناث في الاستجابات للانترنت ونستنتج من ذلك ان طريقة دراسة الانترنت تؤثر بشكل مباشر علي رأي الطالب وليس جنسه . أما بين الكليات المختلفة فرأينا هناك اختلاف بين آراء الذكور والإناث أي هنا فرق بالنظر إلى الجنس موضح بالتفصيل في البحث . ثانيا هناك فرق بالاستجابات بين الكليات المختلفة وذلك لاختلاف الاختصاص ، تبين بان الاختصاص الدراسي يوثر على رأي الطالب ما يضنه حول الانترنت . نرى أن طلاب الكليات يختارون الانترنت كوسيلة أو أداة للمعرفة لان اختصاصهم الأصلي له علاقة بالتكنولوجي لكن طلاب الكليات الإنسانية يميلون إلى أن الانترنت كتكنولوجي وذلك لإشباع رغبتهم بالتعلم من الانترنت المعلومات التكنولوجية التي يفتقدها اختصاص دراستهم الإنساني . اعتمادا على نتيجة الاستبيان كانت هناك تغير قمنا به في واحدة من الكليات في تغير مفردات وطريقة تدريس المادة وترتيبها في إحدى كليات الاستبيان وستكون هناك دراسة لاحقة لمعرفة تأثير هذا التغير بعد انته ء السنة الدراسية المنصرمة وذلك ليك ون هذا البحث كدليل يتبع لتحسين إيصال المادة إلى الطالب وخاصة عند استخدام الوس ل التكنولوجية الحديثة تكنولوجية المعلومات مثل الانترنت .

Introduction:

The advancement of Information and Communication Technology (ICT) and, in particular the internet, has altered the way education is being delivered. The internet provides a limitless source of information and with the array of instructional tools available, it has the capability of enhancing and facilitating learning at all levels of education [2]. Given the current prevalence of usage of the Internet in education, it is imperative for teachers to acquire the relevant skills to use the Internet, as well as acquire the right attitude for the purpose of classroom instruction. The skilful use of the Internet and the right attitude ensure that teachers will make the right selection of relevant and appropriate information for their students [3] Shelly et. al. [4] further added that teachers also need to know how to integrate technology, particularly the Internet, to promote an active learning and authentic learning environment. This new environment provide a new dimension in teaching as the instructors are now required to be facilitators in learning, act as content experts as well as be competent in the use of the Internet[5] .

With the development of the Internet, many researchers have attempted to investigate factors influencing students acceptance and usage of the Internet, but Tsai [1] has highlighted the importance of a more fundamental issue i.e. students' general perceptions towards the Internet. Therefore, Tsai found **4-Ts** categories (**T**echnology, **T**ool, **T**oy and Guiding-**T**our) to describe their perceptions towards the Internet.

Gender and the Internet

As widespread use of and dependency on, the Internet increase especially in education, it was found that not everyone has equal opportunities to its access and usage [6]. It is certainly a cause for concern as it is a part of the digital divide problem. Factors such as income, the educational level, class, gender, race and geographical location have been attributed to this disparity [7]. Of all these factors, the gender issues have gained the uttermost attention among researcher and this is evident in many studies conducted as early as in the 1990s [8, 9,10].

Many of the arguments underlying gender disparities in online use and access stem from gender disparities in computer access and usage [11, 12, 13]. Many of these studies indicated that Internet access usage have mainly been dominated by males. The study by Nachmias, Mioduser and Shemla [14] suggested that gender differences exist in the use of the Internet with a higher and more extensive usage by males when compared to females. Males are also found to spend more of their time on the Internet, indicating preferred locations for use, resource downloading, website creation and participation in discussion groups.

Most studies indicated male domination Items of usage of, and perception towards the Internet; fewer studies showed otherwise. A study by Shaw and Gant[15] showed that no gender differences are detected when participants are involved in various online activities such as synchronous and dyadic chat sessions. Odell et. al.[16] had obtained similar findings that gender is not a significant variable in terms of Internet use.

Methodology

Sample

This study include 228 undergraduate students (around 20 years old) coming from four college of three Iraqi universities. One hundred twenty eight students were from Dentistry College (86 male, 42 female)   the rest were from other colleges (38 male, 62 female). All students were completed the questionnaire to explored their perceptions towards the Internet, in additional to the questionnaire, the students were asked for his/her comments about Internet.

Questionnaire:

On the basis of Tsai's [1] study, this study developed a paper-based questionnaire instruments assessing a representative sample of constructs includes students internet perceptions, using the **4-T** categories the Internet as **T**echnology, **T**ool**, T**oy, or guiding-**T**our. The participants were required to fill out a number (between 1 and 100) that matched the perceived roles that the Internet played on a 1—100 scale. The participants were asked to allocate 100 points to the four roles to show their extent of agreement with each Internet theme role. For example, the students might place the number 40 in Internet as technology, 30 as tool, 20 as toy, and 10 as tour; these numbers add up to 100 to represent their perceptions towards the Internet.

Data analysis

The following statistical data analysis approaches were used in order to analyze and assess the results of the study:

1. Descriptive data analysis:
   a. Tables (Frequencies, Percentages and Cumulative Percentages).
   b. Mean of score and Relative Sufficiency.
   c. Standard Deviation and Range value.
   d. Standard Error
   e. (95%) Confidence interval for population mean of score.
   f. Two extreme values (min. and max.)
   g. Contingency coefficient (causes correlation ship).
   h. Percentages over total sample size.
   I. Graphical presentation by using:
      - Bar- chart.
      - Cluster Bar-Chart.

2. Inferential data analysis:

These were used to accept or reject the statistical hypotheses, which included the following:

1. Chi – Square for testing the interaction among the two factors of the contingency tables.
2. Testing the contingency coefficients.
3. Levine test and t- test for equality of variances and equality of Means parameters estimates for testing coincidence values

Results

Table (1) shows descriptive data for students internet perceptions with different subject of study comparison revealing that students tended to mainly perceive that the Internet as a technology (Humanity group mean= 58.16: Scientific group mean =48.86) but humanity students show more agreement for the "technology" perception than scientific students, then as Guiding tour (Humanity group mean= 16.31: Scientific group mean =18.69) the scientific group more agreement with the internet as "Guiding-tour" than humanity group. The scientific group tend to be more positive with the internet as "tool" (Humanity group mean= 15.36: Scientific group mean =17.92) with nearly equal position value with pervious perception differ for different groups and genders. On average, participants placed fewer emphases on the Internet as a toy (Humanity group mean= 10.18: Scientific group mean=14.54) but clearly shown that scientific group tend to show positive attitude to internet as "toy". Shown in figure (1) represents humanity group and figure (1) represents scientific group.

Table (1): Summary Statistics of the Studied Internet perceptions criteria in the Humanity and Scientific of undergraduate students.

| Location	Gender		N	Mean	Std. Dev.	Std. Error	95% Confidence Interval for Mean		Min.	Max.
							Lower Bound	Upper Bound		
Humanity	Techn ology	Male	38	57.76	24.32	3.95	49.77	65.76	20	100
		Fema le	62	58.55	21.94	2.79	52.98	64.12	10	100
		Total	100	58.25	22.76	2.28	53.73	62.77	10	100
	Tool	Male	38	15.08	12.15	1.97	11.09	19.07	0	60
		Fema le	62	15.65	11.64	1.48	12.69	18.6	0	50
		Total	100	15.43	11.78	1.18	13.09	17.77	0	60
	Toy	Male	38	10.11	8.82	1.43	7.21	13	0	40
		Fema le	62	10.24	7.57	0.96	8.32	12.16	0	30
		Total	100	10.19	8.02	0.8	8.6	11.78	0	40
	Guidi ng Tour	Male	38	17.05	14.32	2.32	12.35	21.76	0	50
		Fema le	62	15.56	9.92	1.26	13.05	18.08	0	40
		Total	100	16.13	11.74	1.17	13.8	18.46	0	50
Science	Techn ology	Male	42	48.62	18.87	2.91	42.74	54.5	20	97
		Fema le	86	49.1	20.28	2.19	44.76	53.45	5	100
		Total	128	48.95	19.76	1.75	45.49	52.4	5	100
	Tool	Male	42	18.83	9.94	1.53	15.73	21.93	0	50
		Fema le	86	17	11.83	1.28	14.46	19.54	0	75
		Total	128	17.6	11.24	0.99	15.64	19.57	0	75
	Toy	Male	42	14.17	9.15	1.41	11.32	17.02	0	30
		Fema le	86	14.9	13.83	1.49	11.93	17.86	0	75
		Total	128	14.66	12.46	1.1	12.48	16.83	0	75
	Guidi ng Tour	Male	42	18.38	12.02	1.86	14.63	22.13	0	50
		Fema le	86	19	13.44	1.45	16.12	21.88	0	50
		Total	128	18.8	12.95	1.14	16.53	21.06	0	50
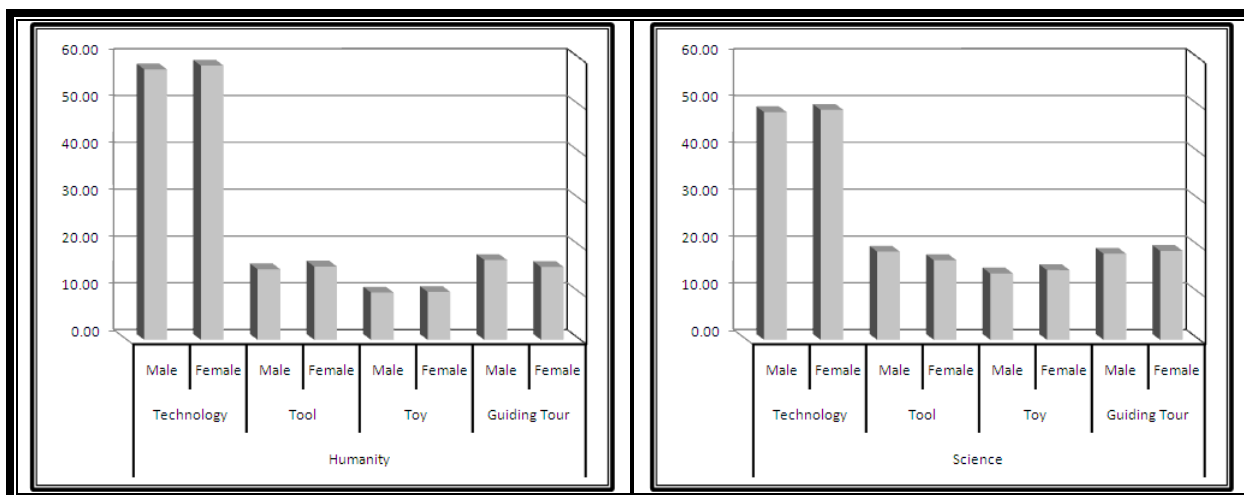
Figure (1): Bar – Charts for the Studied Internet perceptions criteria mean's value in the Humanity and Scientific according to gender in the undergraduate students

Table (2) shows descriptive data for student's internet perceptions with gender comparison revealing that (Male group mean=53.19: Female group mean=53.83)

Female tented to have positive perceptions toward the internet as technology. There were limited gender differences detected between them with respect to Internet as toy (Male group mean=16.96: Female group mean=16.33), but Female tend to show very positive perceptions towards internet as guiding-tour (Male group mean=12.14: Female group mean=25.14). Shown in figure (2) represents Male group and figure (2) represents Female group.

Table (2): Summary Statistics of the Studied Internet perceptions criteria gender in distributed among the Humanity and Scientific undergraduate students.

| Gender	criteria	Location	N	Mean	Std. Dev.	Std. Error	95% Confidence Interval for Mean		Min.	Max.
							Lower Bound	Upper Bound		
Male	Technology	Humanity	38	57.76	24.32	3.95	49.77	65.76	20	100
		Science	42	48.62	18.87	2.91	42.74	54.5	20	97
		Total	80	52.96	21.98	2.46	48.07	57.85	20	100
	Tool	Humanity	38	15.08	12.15	1.97	11.09	19.07	0	60
		Science	42	18.83	9.94	1.53	15.73	21.93	0	50
		Total	80	17.05	11.13	1.24	14.57	19.53	0	60
	Toy	Humanity	38	10.11	8.82	1.43	7.21	13	0	40
		Science	42	14.17	9.15	1.41	11.32	17.02	0	30
		Total	80	12.24	9.17	1.02	10.2	14.28	0	40
	Guiding Tour	Humanity	38	17.05	14.32	2.32	12.35	21.76	0	50
		Science	42	18.38	12.02	1.86	14.63	22.13	0	50
		Total	80	17.75	13.1	1.46	14.84	20.66	0	50
Female	Technology	Humanity	62	58.55	21.94	2.79	52.98	64.12	10	100
		Science	86	49.1	20.28	2.19	44.76	53.45	5	100
		Total	148	53.06	21.44	1.76	49.58	56.54	5	100
	Tool	Humanity	62	15.65	11.64	1.48	12.69	18.6	0	50
		Science	86	17	11.83	1.28	14.46	19.54	0	75
		Total	148	16.43	11.73	0.96	14.53	18.34	0	75
	Toy	Humanity	62	10.24	7.57	0.96	8.32	12.16	0	30
		Science	86	14.9	13.83	1.49	11.93	17.86	0	75
		Total	148	12.95	11.82	0.97	11.03	14.87	0	75
	Guiding Tour	Humanity	62	15.56	9.92	1.26	13.05	18.08	0	40
		Science	86	19	13.44	1.45	16.12	21.88	0	50
		Total	148	17.56	12.17	1	15.58	19.54	0	50
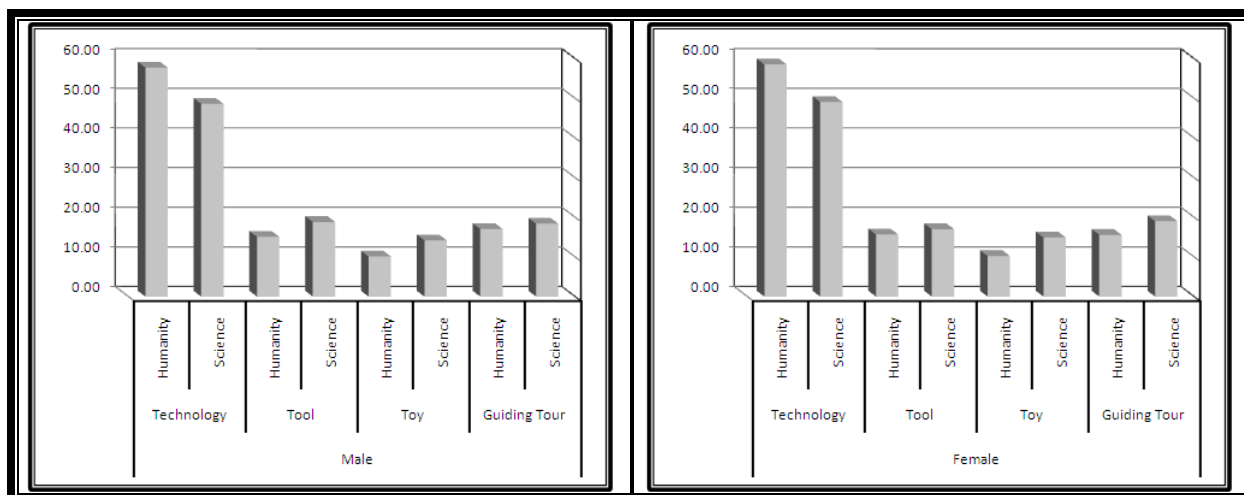
Figure (2): Bar – Charts for the Studied Internet perceptions criteria mean's value in the both gender according to Specification in the undergraduate students

Discussion:

Table (3) represents a coincidence testing table between gender in the different respondents of the studied internet perceptions in the humanity group and scientific group. A P-value was recorded within a causative causes correlation ship. A not significant causes correlation ship (at P>0.05) were recorded for all respondents. This means this is no gender difference with respects to internet perceptions within the same group (e.g. in the humanity or scientific group). The results reflected that the gender gap in internet usage among the respondents was marginal and almost non-existent and female in this study spent as much time on the internet as their male counterparts (at colleges).The results of this part of study were consistent with the earlier findings of Odell *et. al.* [16], and Wong Su Luan *et. al.* [17].

Table (3): Coincidence testing between gender in the different respondents of the Studied Internet perceptions criteria in the Humanity and Scientific of undergraduate students

Location	User choose	Levine's Test for Equality of Variances		t-test for Equality of Means			C.S. P-value
		F Statistic	Sig.	t Statistic	df	Sig. (2-tailed)	
Humanity	Technology	0.717	0.399	-0.167	98	0.868	NS
	Tool	0.008	0.93	-0.232	98	0.817	NS
	Toy	0.917	0.341	-0.082	98	0.935	NS
	Guiding Tour	4.549	0.035	0.613	98	0.541	NS
Scientific	Technology	0.468	0.495	-0.13	126	0.897	NS
	Tool	1.123	0.291	0.866	126	0.388	NS
	Toy	2.251	0.136	-0.31	126	0.757	NS
	Guiding Tour	1.132	0.289	-0.253	126	0.801	NS

NS: Non Significant at P>0.05

Table (4) represents a coincidence testing table between groups (humanity students, scientific students) in the different respondents of the studied internet perceptions in the male female of undergraduate students. A P-value was recorded within a causative causes correlation ship. Whereas A not significant causes correlation ship (at P>0.05) were recorded within tool criteria in male group but the results recorded within not less than 87% of a confidence which indicated that a science group obtained (increasing) more respondent compared with humanity group. Whereas A not significant causes correlation ship (at P>0.05) were recorded within technology criteria

in male group but the results recorded within not less than 93% of a confidence which indicated that a humanity group obtained (increasing) more respondent compared with scientific group. This result indicates each group fitful their lack of knowledge (versa their undergraduate study) from usage of internet.

A significant causes correlation ship (at P<0.05) were recorded within toy criteria, male group, which indicated that scientific group obtained (increasing) more respondent compared with humanity group. A high significant causes correlation ship (at P<0.01) were recorded within technology criteria in female group the results indicates a high factor of interest (between humanity group) to technology than scientific group were obtained. A significant causes correlation ship (at P<0.05) were recorded within toy criteria, female group, which indicated that scientific group obtained (increasing) more respondent compared with humanity group. A high significant causes correlation ship (at P<0.01) were recorded within Guiding-tour criteria in female group the results indicates a high factor of interest (between scientific group) to guiding-tour than scientific group were obtained.

Table (4): Coincidence testing between "Subject of study" in the different respondents of the Studied Internet perceptions criteria of all Male and Female of undergraduate students

Gender	User choose	Levine's Test for Equality of Variances		t-test for Equality of Means			C.S. P-value
		F Statistic	Sig.	t Statistic	df	Sig. (2-tailed)	
Male	Technology	4.86	0.030	1.865	69.7	0.066	NS
	Tool	1.261	0.265	-1.518	78	0.133	NS
	Toy	2.546	0.115	-2.017	78	0.047	S
	Guiding Tour	0.991	0.322	-0.451	78	0.653	NS
Female	Technology	1.394	0.240	2.7	146	0.008	HS
	Tool	0.138	0.710	-0.692	146	0.490	NS
	Toy	15.832	0.000	-2.623	137.3	0.010	S
	Guiding Tour	5.797	0.017	-1.79	145.9	0.076	NS

NS: Non Significant at P>0.05, S: Significant at P<0.05 , HS: Highly Significant at P<0.01

In conclusion, there are no gender differences between participants of the same group (the same subject of study), there is a significant gender difference between all participant (all students Humanity and scientific students) this is due to the background of internet study are the same for each group. Each group fulfils their needs of knowledge through the use of internet e.g. humanity student percent the internet as "technology" because they fulfills their need for technology, the scientific student feel the internet as "tool" to fulfills their needs out of technology.

References:
[1]**Tsai (2004)** Tsai C.C., "Adolescents perceptions towards the Internet: A 4-T framework", *Cyber psychology & Behavior*, **7,** pp 458-463 2004.
[2] **Poole,** B.J, (1997). Educational for an Information Age. New York: McGraw-Hill
[3] **Sharp, V.** (2001), Computer Education for Teachers: Integration Technology into Classroom Teaching. Boston; McGraw Hill.
[4] **Shelly, G.** B., T. J. Cashman, R., E. Gunter, and G. A. (2004). Teachers Discovering Computer-Integrating Technology into the Classroom. Boston, Massacgusetts: Thomson Course Technology.
[5] **Anderson,** D. K. and Reed W. M. (1998). The effect of internet instruction, prior computer experience, and learning style on teachers' Internet attitudes and knowledge. Journal of Educational Computing Research, **19** (3): pp 227-246.
[6] **Papastergiou, M** and Solomonidou, C. (2005). Gender issues in Internet access and favourite internet activities among Greek high school pupils inside and outside school. Computersand Education, **44** (4): pp 377-393.
[7] **Norris, P.** (2001). Digital Divide: civic Engagement, information Poverty, and the internet Worldwide. New York: Cambridge University Press.
[8] **Matheson, K.** and M. P. Zanna (1990). Computer mediated communications: the focus is on me. Social Scientific Computer Review, **8**: 1-12.
[9] **Cardman, E.** R. (1990). The gender gap in computer use: implications for bibliographic instruction. Research Strategies, **8**, pp116-128.
[10] **Allen, B.** (1995). Gender and computer-mediated communication. Sex Roles,**32** (7/8): pp 557-563.
[11] **Lockheed**, M. E. (1985). Women, girls and computers: A first look at the evidence. Sex Roles, **13**: pp115-122.
[12] **Hawkins**, J. (1985). Computers and girls: rethinking the issues. Sex Roles, **13**: pp165-180.
[13] **Rakow**, L. F. (1988). Gendered technology, gendered practice. Critical Studies in Mass Communication, **5**: pp57-70.

[14] **Nachmias,** R., Mioduser D., Shemla A. (2000). Internet usage by students in a high school. Journal of Educational Computing Research, 22: pp55-73.

[15] **Gant, L.** and Shaw, L. (2002). Users divided? Exploring the gender gap in Internet use.CyberPsychology and Behavior, **5** (6): pp 517-527.

[16] **Odell, P.** Korgen, K. Schumacher P. and Delucchi M. (2000). Internet use among female and male college students. CyberPsychology and Behavior, **3** (5): pp855-862.

[17] **Wong Su Luan**, Fung Ng Siew and Hanafi Atan,(2008). Gender Differences in the usage and attitudes toward the internet among student teachers in a Public Malaysian University. American Journal of Applied Sciences, **5** (6):pp689-697.