ANANT KUMAR VARSHNEY

Attitude of Rural and Urban Undergraduate Students of Aligarh Muslim University towards Computer

ABSTRACT: *Technology is the main support for the students learning developments nowadays. With shifting from the teacher-centred instruction to child-centred instruction, the role, activities, attitudes, reflections of the students become more important concern to overlook the effectiveness of technology in instruction. Computers are the main technology support as a tool for effective learning and teaching process. Computer based instruction and computers programs, tools as itself, provides much facilities and supports to students' educational life. Computers are update mechanism for the education and it is not only for education, these developments affect all global, cultural and economical life standards as well. The computer as productivity tool has great role in education. So, computers have become a necessary part of our life. We are using computers in every aspect of our life. But, there are many villages in India which are very much far from computers. How this absence of computer technology affects attitude of students of rural background? This study strives to find answer of this question. A sample consisting of 50 male and 50 female undergraduate students of AMU (Aligarh Muslim University) was selected. Their attitude was assessed through computer attitude scale constructed by T. Khatoon & M. Sharma (2011). After analysis of data, it was found that rural and urban students, both rural and urban undergraduate students, have favourable attitude towards computer, but rural girls showed less favourable attitude than urban girls.*

KEY WORDS: *Computer, students learning, attitude towards computer, undergraduate students, rural and urban students, gender, and favourable and less favourable attitudes.*

INTRODUCTION

Technology is the main support for the students learning developments nowadays. With shifting from the teacher-centred instruction to child-centred instruction, the role, activities, attitudes, and reflections of the students become more important concern to overlook the effectiveness of technology in instruction. Computers are the main technology support as a tool for effective learning and teaching process. Computer based instruction and computers programs, tools as itself provides much facilities and supports to students' educational life.

Computers are update mechanism for the education and it is not only for education, these developments affect all global, cultural, economical life standards

About the Author: **Anant Kumar Varshney** is a Research Scholar at the Department of Education AMU (Aligarh Muslim University) in Aligarh, Uttar Pradesh, India. For academic interests, the author can be contacted via e-mail at: anant.0148@gmail.com

as well. The computer as productivity tool has great role in education (Agbatogun, 2010). Computers include hardware and software, word processing functions, graphics, programmed instruction for problem solving, spreadsheets, databases, networking, and telecommunications for today high technology developments as a reflective to education.

In addition to this, within the constructivist approach perspective, computers help the differentiate roles of students and teachers, application of instruction by providing equal standards, understanding, and meaningful learning for all students. Computer help to convert teacher based instruction to child centred instruction with providing multiple intelligence atmospheres to the educational cycle (Forcier, 1996).

Within the today's application, it is important to get the meaningful learning for the students' learning cycle. It is not necessary to get information directly from the instructors, what is important today is that experiencing reality, discovering reality with technology guidance. When we look at issues and ahead, we can commend that technology has main responsible process in instruction for today educational world. With the development of high technology improvements, students get main role in their learning process. Computers have role to support easy study of students with their learning process. Beside this, all students take advantage of learning opportunities technology offers within the instruction (Grabe & Grabe, 2001).

Following contemporary invention that is multiple intelligence is needed to them for contributing effective learning can get essential knowledge. Multiple intelligence refers that every person has different capacity to different activity for learning. By this way, technology is a new dimension that provides multiple intelligence under the aim of stable effective learning. Because technology includes various alternatives that are visual, oral, and textual elements in order to make individual easily catch information instantly. If we go deeper, we can easily realize that computer and its applications is a key factor to catch multiple intelligence opportunities for effective learning. Because, every individuals can find their

needs under the wide range of functions of computers (Anderson & Noyes, 1999).

As we know that research is main consideration to form alternatives and critical thinking by comparing all issues. Today, we can face with learning by doing, discovery learning, and learning by searching (Bertea, 2009; and Chai *et al.*, 2009). These concepts refer to understand that individualized learning becomes more needed to contribute stable learning among individuals. In addition to this, computer is basic home to get and apply all these items under the idea of equalities in education among all people. Because by the computer included learning, everyone get same chances to know and follow issues.

Therefore, considering issues should be done individually as being free. On the other hand, research is key factor at computer based life in order to know and apply all situations in a useful way at individual life (Hakim *et al.*, 1999). In order to be reflective on the usage of computers and facilities, there should be examination of the thoughts and attitudes of students towards computer.

Obviously, the quality of computer literacy is closely related to one of the major attitudes components is motivation. If a student is absolutely motiveless to work with computer, the learning result will not be optimal. A motivated computer user, even under unfavourable conditions, willingly works with computer (Ray, Sormunen & Harris, 1999; and Isman *et al.*, 2004).

This article deals with the study of students' attitudes towards computer. Because based on the constructivist perspectives, students have great role in the learning process and much affected from the technology support to their education.

Villages in India are deprived of, even basic technological support. A very few families have their own computer system in Indian villages. So, students in rural area have this obstacle in modern age learning which cannot be possible without using electronic devices. Students in villages also have rights to use technology enabled learning in their classroom.

But sometimes, some arguments also come to know in opposition of investment in set up of computer facilities in Indian rural schools.

These arguments say about traditional thinking of rural thinking, resistance to adopt new technology, lack of electricity, and absence of internet etc. So, as a result, there is a lack of technological devices in villages, but when students from rural background come to cities for higher studies, their distance from computer comes in their way of success.

So, there is a need to know how these undergraduate students from rural background see this world full of computers. So, there is a need to know whether these students have negative attitude towards computers or they perceive computers positively.

A.S. Fahad (2000) investigated the gender differences in attitudes of sixth-grade Kuwaiti students toward computers by using CAQ (Computer Attitude Questionnaire), translated from the English into Arabic Language for this study; originally developed by Knezek and Miyashita for the Texas Center for Educational Technology (University of North Texas). The CAQ was administered to a random cluster sample of 10 public middle schools (5 boys and 5 girl schools), with a total of 562 students (265 boys and 297 girls), in the State of Kuwait during the academic year 1999-2000. The pilot test was conducted to calculate the reliability with Cronbach's alpha = .87 for the CAQ Arabic version. This study found positive attitudes toward computer use (mean = 3.31 on 4-point Likert-scale); however, girls had significantly more positive attitudes toward computers (Fahad, 2000).

E. Bebetsos & P. Antoniou (2008), in Department of Physical Education and Sport Science, Democritus University of Thrace, investigated the differences in attitude of Greek Physical Education students towards the subject of computers. The sample consisted of 165 freshmen students: 93 boys and 72 girls. They completed the "computer attitude scale" questionnaire of 21 items which consist four factors: affect, perceived usefulness, perceived control, and behavioural (*cf* Popovich *et al.*, 2008; and Teo, 2008). Investigators found significant difference between attitude of boys and girls towards computer. Boys were found to have more positive attitude towards computer in comparison of girls (Bebetsos & Antoniou, 2008).

S. Singh & S. Yadav (2011) studied attitude towards computer among undergraduate students of CSJMU (*Chhatrapati Shahu Ji Maharaj University*) in Kanpur, Uttar Pradesh, India. For this purpose, descriptive survey research design was used. Data was collected from randomly selected 320 male and female students of the urban and rural areas of Kanpur in Uttar Pradesh, India. Computer attitude scale was administered on the selected sample. The result showed that significant difference was found in attitude towards computer between undergraduate rural and urban students. Rural and urban students both have positive attitude towards computer, but rural students have significantly less positive attitude than urban students. But, there was no significant difference between male and female students (Singh & Yadav, 2011).

B. Padma & N. Vidyageetha (2012) studied effect of gender and location of schools on attitude of 855 students of 10 secondary schools in Kumbhkonam; and 12 secondary schools in Thanjavor towns of Tamilnadu, India, towards computer by using Dr. Kumaran and Dr. Selvaraj's tool to study the students' attitude towards computer. Significant difference was found between the boys and girls in their attitude towards computer. The girls are found to be better than the boys in their attitude towards computer. Significant difference was found between rural and urban students in their scores in attitude towards computer. The rural students are found to be better than the urban students in their attitude towards computer (Padma & Vidyageetha, 2012).

G. Suri & S. Sharma (2013) investigated the effect of gender on attitude towards computer among students studying at the Punjab University in Chandigarh, India, by using B.H. Loyd & C. Gressard (1984)'s computer attitude scale. Differences between means were analyzed through independent sample t-test. Study revealed that there is no effect of gender on attitude towards computer (Suri & Sharma, 2013).

N. Navneethakrishan (2014) investigated the effect of gender and location of school on attitude towards computer among D.T.Ed. (Diploma in Teacher Education) Students

Table 1:
Showing Distribution of Sample

Type of Students	Male Rural	Male Urban	Female Rural	Female Urban
Number of Students	25	25	25	25

Tabel 2:
Showing Scoring of Single Item

Response	SD	D	U	A	SA
Score on negative statement (statement no. 2, 4, 7, 9, 11, 14, 17, 18, and 20)	5	4	3	2	1
Score on positive statement (statement no.1, 3, 5, 6, 8, 10, 12, 13, 15, 16, and 19)	1	2	3	4	5

Note: SD = Strongly Disagree; D = Disagree; U = Undecided; A = Agree; and SA = Strongly Agree.

Table 3:
Showing Interpretation of Scores

Score	Interpretation
< 60	Negative or unfavourable attitude towards computer.
60	Neutral or undecided attitude towards computer.
> 60	Positive or favourable attitude towards computer.

Table 4:
Showing Levels of Independent Variables

Gender		Birthplace	
Male	Female	Rural	Urban

studying in Teacher Training Institutes in Cuddalore District of Tamil Nadu, India, by using attitude scale towards computer constructed and validated by D. Kumaran & K. Selvaraj (2001). The sample was selected by using simple random sampling technique. Study revealed that there is no effect of gender and location of school on attitude towards computer (Navneethakrishan, 2014).

There are many studies also which are concerned with attitude of students towards computer, but there are a few studies which focus on attitude and perception of rural students towards computer. So, this study focuses on comparison of attitude of rural and urban undergraduate students towards computers.

DEFINITIONS, OBJECTIVES, AND HYPOTHESES

Operational Definitions of the Terms Used. L.L. Thurstone (1928) defines "attitude" as the sum total of man's inclination and feelings prejudices and biases, pre-conceived notions, ideas, fears, threats, and conviction about any specific topic (Thurston, 1928). While, "attitude towards computer" in this study is an attitude of an individual towards computer that is assessed through his/her score on a questionnaire constructed by T. Khatoon & M. Sharma (2000) named as CAS (Computer Attitude Scale).

"Rural and urban students" are the students, whose birthplace meets following criteria, for rural students: (1) a population of less than 5,000; (2) density of population less than 400 per sq km; and (3) more than 25 per cent of the male working population is engaged in agricultural pursuits. While students, whose birthplace does not meet above written criteria, are urban students.

"An undergraduate student" is a student who is studying for his/her first degree (usually entitled B.A. (Bachelor of Arts) or B.Sc. (Bachelor of Science). There are three levels of undergraduate study equating to first-year, second-year, and third-year study. Once the student has a first degree, he/she is called a graduate.

Objectives. Objectives of this study are as follows: (1) to investigate effect of birthplace on attitude of undergraduate students towards computers; (2) to investigate effect of gender on attitude of undergraduate students towards computers; (3) to investigate effect of birthplace on attitude of male undergraduate

Table 5:
Showing Comparison between Attitudes of Rural and Urban Undergraduate Students towards Computers

Gender	No. of Respondents	Mean	Standard Deviation	t-Value	df	Level of Significance
Rural	50	77.70	8.8	0.26	98	Not significant
Urban	50	79.48	5.4			

Table 6:
Showing Comparison between Attitudes of Male and Female Undergraduate Students towards Computers

Gender	No. of Respondents	Mean	Standard Deviation	t-Value	df	Level of Significance
Male	50	79.42	7.2	0.20	98	Not significant
Female	50	77.33	7.6			

students towards computers; and (4) to investigate effect of birthplace on attitude of female undergraduate students towards computers.

Hypotheses. Hypotheses of this study are written in null form as follows: (1) "There is no significant effect of birthplace on attitude of undergraduate students towards computers"; (2) "There is no significant effect of gender on attitude of undergraduate students towards computers"; (3) "There is no significant effect of birthplace on attitude of male undergraduate students towards computers"; and (4) "There is no significant effect of birthplace on attitude of female undergraduate students towards computers".

METHOD

Population and Sample. The Population for this study is defined as "undergraduate students of AMU (Aligarh Muslim University) in Aligarh, Uttar Pradesh, India". The sample for this study consists of 100 undergraduate students of AMU in Aligarh, Uttar Pradesh, India. Simple random sampling was used for selection of sample. See table 1.

Tool Used. Present study has one dependent variable: attitude of undergraduate students towards computers, which is assessed through score of respondent on a questionnaire constructed by T. Khatoon & M. Sharma (2000) named as CAS (Computer Attitude Scale). The split half reliability coefficient of this questionnaire was found to be 0.86. For ensuring the content validity, the scale was checked by experts of educational technology and computer sciences.
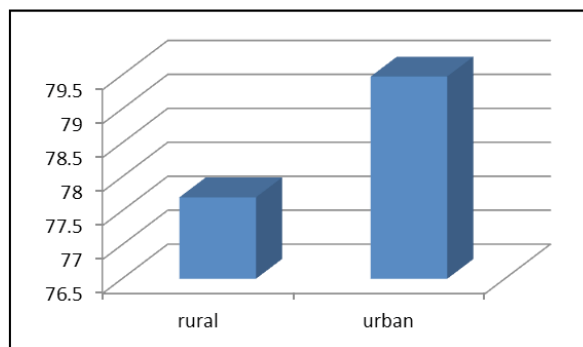
The construct validity was also determined

Figure 1:
Showing Comparison between Attitudes of Rural and Urban Undergraduate Students towards Computers
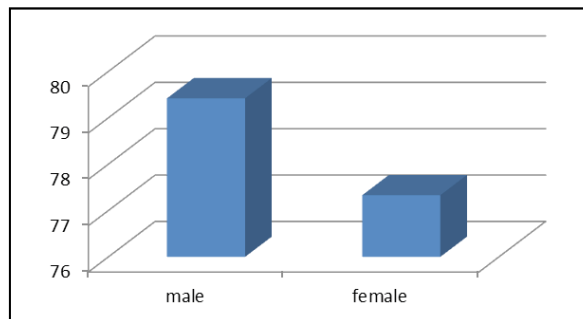

Figure 2:
Showing Comparison between Attitudes of Rural and Urban Undergraduate Students towards Computers

by finding out the relationship between score on each item with total score on scale. Score on each item was significantly correlated with total score on the scale that reveals good construct validity of scale. This questionnaire has 20 statements, in which 9 statements represent negative attitude towards computer; while 11 statements represent positive attitude towards computer. This questionnaire was made in form of 5 point Likert scale. Scoring of single item is given in table 2.

Table 7:
Showing Comparison between Attitudes of Male Rural and Urban Undergraduate Students towards Computers

Gender	No. of Respondents	Mean	Standard Deviation	t-Value	df	Level of Significance
Rural	25	79.05	7.8	0.22	48	Not significant
Urban	25	80.18	6.03			

Table 8:
Showing Comparison between Attitudes of Female Rural and Urban Undergraduate Students towards Computers

Gender	No. of Respondents	Mean	Standard Deviation	t-Value	df	Level of significance
Rural	25	74	10.8	2.06	48	0.05
Urban	25	79	4.9			

Interpretation of scores of respondents on questionnaire is given in table 3.

Research Design. This study has two independent variables: gender and birthplace. Each independent variable has two levels as given in table 4.

Research design for this study examines significance of effect of independent variables, i.e. "gender" and "birthplace" on dependent variable, i.e. "attitude of undergraduate students towards computer". Data was analysed by using SPSS (Statistical Package for Social Sciences) software package. Means were compared by t-test. Basic statistical techniques like Mean and Standard Deviation were also used for analysis of data.

ANALYSIS OF DATA AND RESULTS

As per the design of the study, the needed data is collected and then subjected to statistical treatment to verify the stated hypotheses.

Objective 1: to investigate effect of birthplace on attitude of undergraduate students towards computers. *Hypothesis $H_0 1$ (Null Hypothesis):* "There is no significant effect of birthplace on attitude of undergraduate students towards computers". See table 5 and figure 1.

Table 5 shows that calculated t-value is 0.26 with 98 degrees of freedom which is not significant. So, hypothesis $H_0 1$ is accepted. So, "there is no significant effect of birthplace on attitude of undergraduate students towards computers".

Objective 2: to investigate effect of gender on attitude of undergraduate students towards computers. *Hypothesis $H_0 2$ (Null Hypothesis):* "There is no significant effect of gender on
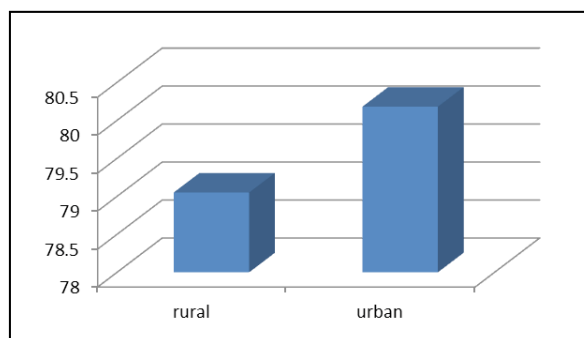
Figure 3:
Showing Comparison between Attitudes of Rural and Urban Undergraduate Students towards Computers
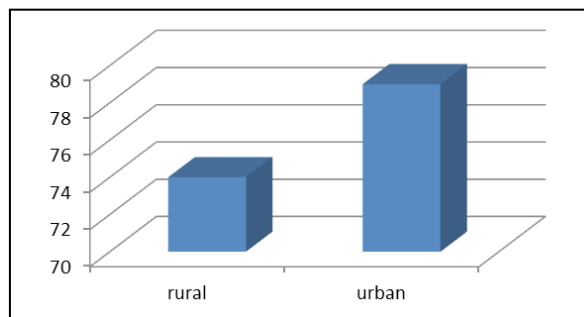
Figure 4:
Showing Comparison between Attitudes of Female Rural and Urban Undergraduate Students towards Computers

attitude of undergraduate students towards computers". See table 6 and figure 2.

Table 6 shows that calculated t-value is 0.20 with 98 degrees of freedom which is not significant. So, hypothesis $H_0 2$ is accepted. So, "there is no significant effect of gender on attitude of undergraduate students towards computers".

Objective 3: to investigate effect of birthplace on attitude of male undergraduate students towards computers. *Hypothesis $H_0 3$ (Null Hypothesis):* "There is no significant effect of birthplace on

attitude of male undergraduate students towards computers". See table 7 and figure 3.

Table 7 shows that calculated t-value is 0.22 with 48 degrees of freedom which is not significant. So, hypothesis $H_0 3$ is accepted. So, "there is no significant effect of birthplace on attitude of male undergraduate students towards computers".

Objective 4: to investigate effect of birthplace on attitude of female undergraduate students towards computers. *Hypothesis $H_0 4$ (Null Hypothesis):* "There is no significant effect of birthplace on attitude of female undergraduate students towards computers". See table 8 and figure 4.

Table 8 shows that calculated t-value is 2.06 with 48 degrees of freedom which is significantat 0.05 level of significance. So, hypothesis $H_0 3$ is rejected. So, "there is significant effect of birthplace on attitude of female undergraduate students towards computers". Urban girls have more positive attitude than rural girls.

Finally, the results are as follows: firstly, there is no significant effect of birthplace on attitude of undergraduate students towards computers. Rural and urban undergraduate students, both have favourable attitude towards computer.

Secondly, there is no significant effect of gender on attitude of undergraduate students towards computers. Male and female undergraduate students, both have favourable attitude towards computer.

Thirdly, there is no significant effect of birthplace on attitude of male undergraduate students towards computers. Male Rural and male urban undergraduate students, both have favourable attitude towards computer.

Fourthly, there is significant effect of birthplace on attitude of female undergraduate students towards computers. Female Rural and female urban undergraduate students, both have favourable attitude towards computer but rural girls showed less favourable attitude than urban girls.

This study tells that students are wishing to use computer for their study purpose irrespective of their birthplace. High values of mean of attitude scores show that students have strongly positive attitude towards computer.

Gender and birthplace have not significant effect on attitude towards computer. This study investigated the effects of birthplace and gender on attitude towards computer. Results of this study are in line with works of S. Singh & S. Yadav (2011); G. Suri & S. Sharma (2013); and N. Navneethakrishan (2014) that there is no significant difference in attitude towards computer with respect to gender.

On the other hand, some other studies showed opposite result like E. Bebetsos & P. Antoniou (2008), who found that boys had significantly more positive attitude towards computer than girls. While A.S. Fahad (2000) and B. Padma & N. Vidyageetha (2012) found that girls had significantly more positive attitude towards computer than boys.

Results of this study are similar with work of N. Navneethakrishan (2014) that there is no significant difference in attitude towards computer with respect to birthplace or location of school. On the other hand, some other studies showed different results like S. Singh & S. Yadav (2011), who found that urban students had significantly more positive attitude towards computer than rural students. While B. Padma & N. Vidyageetha (2012) found that rural students had significantly more positive attitude towards computer than urban students.

But, a significant difference was found between attitude of rural girls and urban girls towards computer. Although rural girls also want to use computers for their study, but they did not show their wish strongly as urban girls did. Their mean attitude score was least among all 4 groups. Any previous study did not find such type of interaction between gender and birthplace.

CONCLUSION

Apart of less access to computer and technology, students from rural background showed favourable attitude towards computer like urban students. They want to acquaint with computers and technological device. They want to learn computer operating and consider knowledge of computer necessary for their career. So, this is indicating about need of expansion of knowledge of computer in rural area. So, that rural students should not

lag behind due to incomplete knowledge of computer.

Although rural girls showed favourable attitude towards computer, but their attitude were significantly less than urban girls' students. Their mean attitude score was least among all 4 groups. This may be due to traditional environment in villages, in which it is supposed that girls are not capable to handle gadgets and devices. It shows need of emphasis on special arrangement of computer education for girls. Incentives and scholarship must be included in girls' computer education program.

References

Agbatogun, A. (2010). "Self-Concept, Computer Anxiety, Gender, and Attitude towards Interactive Computer Technologies: A Predictive Study among Nigerian Teachers" in *International Journal of Education and Development using ICT*, 6(2), pp.55-68.

Anderson, S.J. & J.M. Noyes. (1999). "The Intranet as Learning Tool". Available online also at: http://www.raco.cat/index.php/iem/article/viewFile/205358/273896 [accessed in Aligarh, India: April 8, 2015].

Bebetsos, E. & P. Antoniou. (2008). "University Students' Differences on Attitudes towards Computer Use: Comparison with Students' Attitudes towards Physical Activity" in *Interactive Educational Multimedia,* Number 17 [October], pp.20-28.

Bertea, P. (2009). "Measuring Students' Attitude towards E-Learning: A Case Study" in *Conference Proceedings of eLSE: eLearning and Software for Education,* No.01, pp.417-424.

Chai, C.S. *et al*. (2009). "Singaporean and Taiwanese Pre-Service Teachers' Beliefs and Their Attitude towards ICT Use: A Comparative Study". Available online also at: Available online also at: http://www.raco.cat/index.php/iem/article/viewFile/205358/273896 [accessed in Aligarh, India: April 8, 2015].

Fahad, A.S. (2000). "Attitudes toward Computer Use and Gender Differences among Kuwaiti Sixth-Grade Students". *Unpublished Doctoral Dissertation*. Denton, Texas: University of North Texas.

Forcier, C. Richard. (1996). *The Computer as a Productivity Tool in Education.* USA [United States of America]: Prentice-Hall, Inc., A Simon & Schuster Company in United States of America.

Grabe, Mark & Cindy Grabe. (2001). *Integrating Technology for Meaningful Learning.* USA [United States of America]: Houghton Mifflin Company in United States of America.

Hakim, Toufic *et al*. (1999). "A Step Toward Internet-Base Courses". Available online also at: http://digital.library.unt.edu/ark:/67531/metadc2663/ [accessed in Aligarh, India: April 8, 2015].

Isman, Aytekin *et al*. (2004). "Attitudes of Students toward Computers" in *TOJET: The Turkish Online Journal of Educational Technology,* Volume 3, Issue 1 [January], ISSN 1303-6521. Available online also at: http://www.tojet.net/articles/v3i1/312.pdf [accessed in Aligarh, India: April 8, 2015].

Khatoon, T. & M. Sharma. (2000). *Computer Attitude Scale.* New Delhi: H.P. Bhargava Book House.

Kumaran, D. & K. Selvaraj. (2001). "A Study of Cognitive and Affective Computer Attitude of Teachers" in *Journal of All India Association for Educational Research,* 13(1 and 2), March – June, pp.1-7.

Loyd, B.H. & C. Gressard. (1984). "Reliability and Factoral Validity of Computer Attitude Scale" in *Educational and Psychological Measurement*, 44(2), pp.501-505.

Navneethakrishan, N. (2014). "Attitude towards Computer among D.T.Ed. Students: An Empirical Study" in *Indian Journal of Applied Research,* Volume 4, Issue 4 [April], ISSN 2249-555X.

Padma, B. & N. Vidyageetha. (2012). Higher Secondary Students' Achievement in Computer Science and Their Attitude towards Computer" in *IJTER: International Journal of Teacher Educational Research,* Vol.1, No.2 [October], ISSN 2319-4642. Available online also at: http://ijter.com/pdf%20files%20folder/OCTOBER2012/paper3october2012.pdf [accessed in Aligarh, India: April 11, 2015].

Popovich, P.M. *et al*. (2008). "Comparing Attitudes towards Computer Usage by Undergraduates from 1986 to 2005" in *Computers in Human Behavior*, 24(3), pp.986-992.

Ray, Charles M., Carolee Sormunen & Thomas M. Harris. (1999). "Men's and Women's Attitudes toward Computer Technology: A Comparison" in *Office Systems Research Journal,* 17(1), pp.1-8.

Singh, S. & S. Yadav. (2011). "A Comparative Study of Social Competence and Affitude towards Computer among Undergraduate Students" in *SPIJE,* Vol.7, No.7 [January]. Available online also at: http://www.spijebhu.in/IMG_0005.pdf [accessed in Aligarh, India: April 10, 2015].

Suri, G. & S. Sharma. (2013). "The Impact of Gender on Attitude towards Computer Technology and E-Learning: An Exploratory Study of Punjab University, India" in *International Journal of Engineering Research,* Vol.2, No.2 [April], ISSN 2319-6890, pp.132-136. Available online also at: http://www.ijer.in/ijer/publication/v2s2/paper22.pdf [accessed in Aligarh, India: April 8, 2015].

Teo, T. (2008). "Pre-Service Teachers' Attitudes towards Computer Use: A Singapore Survey" in *Australasian Journal of Educational Technology*, 24(4). Available online also at: https://www.ice.cam.ac.uk/faqs/3-credit-faqs/140-what-do-undergraduate-and-postgraduate-mean [accessed in Aligarh, India: April 15, 2015].

Thurstone, L.L. (1928). "Attitudes Can Be Measured" in *American Journal of Sociology,* 33, pp.529-554. Available online also at: http://www.brocku.ca/MeadProject/Thurstone/Thurstone_1928a.html [accessed in Aligarh, India: May 1, 2015].