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A Study of Under-Graduate Students' Attitude towards Computer

ABSTRACT: *Nowadays, the role of Information and Communication Technology (ICT), especially in education sector, has been increased to empower the educational activities. Computer as an integrated part of ICT has become a very crucial and handy tool to perform the various required educational activities. All the ladders of education system have their own ways and purpose to use the computer based applications in their set up. So, computer education has become mandatory in every walks of the life. Educational activities at any level cannot be performed effectively until and unless one seeks help from the computer based applications. For an effective use of computer, one should have proper attitude towards computer as well as computer education. That is why the present study aims to investigate the computer attitude of under-graduate students of Science and Social Science streams. A sample of 100 (male = 50, female = 50) was drawn by using standardized Computer Attitude Scale, according to T. Khatoon & M. Sharma (2011), from the under-graduate students of Science and Social Science Faculties of AMU (Aligarh Muslim University) in Aligarh UP (Uttar Pradesh), India. A non-probable purposive sampling technique was used to draw the sample. In order to test the hypotheses, descriptive statistical measures like Mean and Standard Deviation and t-test were applied. Analysis of data revealed that there is no significant difference between the computer attitude of under-graduate students of Sciences and Social Science streams at all the basis of comparison. The study has an educational implication for educational practitioners and professionals.*

KEY WORDS: *Information and communication technology, computer education, computer attitude, gender, science and social science streams, and educational practitioners and professionals.*

INTRODUCTION

Nowadays, the role of ICT (Information and Communication Technology), especially in education sector, has been increased to empower the educational activities. Computer, as an integrated part of ICT, has become a very crucial and handy tool to perform the various required educational activities. All the ladders of education system have their own ways and purpose to use the computer based applications in their set up. Computer knowledge has become the key to the success in both the professional and occupational spheres of life.

Due to the impact of globalisation, computer education has been proved as

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the mandatory for the school education. Vocational efficiency of students can be improved and enhanced by providing computer education and required training. NCSM (National Computer Saksharta Mission), in 2008, a fully registered society, conducting full/short term courses on computer education for the students with the basic objectives: to give basic information and knowledge about the necessity of computer literacy in the various walks of life (NCSM, 2008).

AICSM (All India Computer Saksharta Mission), in 1999, a registered and autonomous institution, running various degree and diploma courses in computer education across the country. The organisation has also reached to the village and cities levels. AICSM functioning with the objectives of: to provide adequate knowledge of computer, personality development of students and computer course at the very nominal fee (AICSM, 1999).

JLNCSM (Jawahar Lal Nehru Computer Saksharta Mission), in 2010, is a leading organization with a social and economical obligation for imparting quality computer education and training to all, particularly the marginalized section of society. JLNCSM believe that the computer education manpower can add much more productive outputs strengthen to our national economy than those who are not aware of the computer technology (JLNCSM, 2010). The uniqueness of the organization lies in it's reach to the grassroots level, which also provides excellent opportunity and growth.

Government of India has also been trying hard from the last few years to provide computer education at every level, but little success could be realised. Now, computer education has been imparting at university, college, and school levels. Even *Madrasa*s are also getting benefit to have computer education under the provisions of various government sponsored programmes. But, the desired results are not coming, especially from the rural areas, due to certain reasons. Among them one could be the lack of proper attitude of students towards the computer education.

That is why researchers have selected the present topic as a research problem to examine the under-graduate students' attitude towards computer.

Computer Attitude. G.W. Allport (1935) has defined attitude as a mental and neural state of readiness, organised through experience, exerting a directive or dynamic influence upon the individual's to all objects and situations with which it is related (Allport, 1935). Computer attitude has been defined as a person's general evaluation or feeling of favour or antipathy towards computer technologies and specific computer related activities (*cf* Smith, 2000; Fisseha, 2011; and Kinzie, Decourt & Powers, 1994a).

Gender Differences. A gender difference is a distinction of biological and/or physiological characteristics and typically associated with either male or female or species in general. While the social sciences sometimes approaches gender as a social construct and gender studies particularly do, research in the natural sciences investigates whether biological differences in males and females influences the development of gender in humans. Gender is the characteristics, whether biological or socially influenced, by which people define male and female.

Science and Social Science Under-Graduate. Students pursuing graduation in Science and Social Science streams at AMU (Aligarh Muslim University) in Aligarh, Uttar Pradesh, India.

REVIEW OF LITERATURE

B.D. Brock & M.L. Sulky (1994) carried out research on attitude towards construct validation and relation to computer use. Results revealed that individuals completing these have two distinct affective reactions toward the computer; they may see it as a beneficial tool and believe that it is an autonomous entity (Brock & Sulky, 1994).

M.C. Vale & C.G. Leder (2004) studied about student views of computer-based Mathematics in the middle years; and found that girls considers the computer-based lessons less favourably than the boys, boys were likely to believe that computer attributed to their experiencing pleasure in these lessons, and make Mathematics more relevant to them (Vale & Leder, 2004).

K. Singh & R.K. Allen (2007) conducted a critical synthesis of researches on women in computer-related majors, a critical synthesis of research and theory from 1994 to 2005. Analysis indicated that women's enrolment and retention in computer science majors has declined in recent years (Singh & Allen, 2007).

B.M. Kinzie, B.A.M. Decourt & M.S. Powers (1994b) suggested on the basis of drawn results that attitudes contributes contribute significantly to the prediction of self-efficacy for computer technology eve after the effects of demographic variables and experience are accounted for (Kinzie, Decourt & Powers, 1994b).

R. Kay (2007) conducted extensive review on gender differences in computer altitudes, aptitude, and use. He suggested that to see the gender differences towards computer in a confusion free manner then, one has to switch from the traditional qualitative, constructed based approach to a qualitative, dynamic approach looks at processes of human behaviour (Kay, 2007).

C.T. Despotakis, E.G. Palaigeoriou & A.I. Tsoukalas (2007) found that students' attitudes were influenced by factors, such as the nature of the computer application to be learnt, students' prior knowledge of that of that application, their prior learning practices, simulated practice, and so on (Despotakis, Palaigeoriou & Tsoukalas, 2007). R. Kay (2007) found also that male have the advantages in using computer that female.

ABOUT THE STUDY

Variables in the present study are *dependent variable*: computer attitude; and *independent variables*: choice of stream, i.e. Science and Social Science; and gender, i.e. male and female.

Objectives of the study are: (1) to find out the computer attitude of Science under-graduate students; (2) to explore the computer attitude of Social Science under-graduate students; (3) to investigate the computer attitude of male Science and Social Science under-graduate students; (4) to investigate the computer attitude of female Science and Social Science under-graduate students; and (5) to find out the computer attitude of total male and female science and social science under-graduate students.

Hypotheses of the study are: (1) There will be no significant difference between the computer attitude of male and female Science under-graduate students; (2) There will be no significant difference between the computer attitude of male and female Social Science under-graduate students; (3) There will be no significant difference between the computer attitude of male Science and Social Science under-graduate students; (4) There will be no significant difference between the computer attitude of female Science and Social Science under-graduate students; and (5) There will be no significant difference between the computer attitude of total male and female Science and Social Science under-graduate students.

Delimitations of the study are: the present study is confined on under-graduate students; this study restricted to only Science and Social Science undergraduate students; this study delimited to AMU (Aligarh Muslim University) in Aligarh, Uttar Pradesh, India; the consisted of only 100 sample (male = 50, female = 50) under-graduate students; and this is study confined to the variables of computer attitude, gender differences, and Science and Social Science.

METHOD OF THE STUDY

Design. Present study comes under the category of descriptive research and data were collected through questionnaire. Thus, survey design was used to carry out the present study.

Population and Sample. Science and Social Science unger-graduate students of Aligarh District constitute the population in present the study. In the present study, sample consisted of 100 (male = 56, female = 44) under-graduate students of Science and Social Science Faculty of AMU (Aligarh Muslim University) in Aligarh, Uttar Pradesh, India. Sample is drawn by employing non-probabilistic purposive sampling technique.

Research Tool Used. In the present study, a standardised Computer Attitude Scale by T. Khatoon & M. Sharma (2011) is used. The tool is comprised of 20 items (negative = 9, positive = 11). Split-half reliability coefficient of the tool is given as 0.89, whereas the content

Table 1:
Showing the Difference between the Computer Attitude of Male and Female
Science Under-Graduate Students

Basis	N	Mean	SD	Df	t-Value
Computer attitude of male under graduate students of Science	25	78.36	8.34	48	0.45
Computer attitude of female under graduate students of Science	25	79.45	8.51		

Not significant at 0.01 level

Table 2:
Showing the Difference between the Computer Attitude of Male and Female
Social Science Under-Graduate Students

Basis	N	Mean	SD	Df	t-Value
Computer attitude of male under graduate students of Social Science	25	80.21	6.34	48	0.29
Computer attitude of female under graduate students of Social Science	25	77.33	7.59		

Not significant at 0.01 level

Table 3:
Showing the Difference between the Computer Attitude of Male
Science and Social Science Under-Graduate Students

Basis	N	Mean	SD	Df	t-Value
Computer attitude of male under graduate students of Science	25	78.36	8.34	48	0.87
Computer attitude of male under graduate students of Social Science	25	80.21	6.34		

Not significant at 0.01 level

Table 4:
Showing the Difference between the Computer Attitude of Female
Science and Social Science Under-Graduate Students

Basis	N	Mean	SD	Df	t-Value
Computer attitude of female under graduate students of Science	25	79.45	8.56	48	0.05
Computer attitude of female under graduate students of Social Science	25	77.33	7.59		

Not significant at 0.01 level

Table 5:
Showing the Difference between the Computer Attitude of Total Male and Female
Under Graduate Students of Science and Social Science

Basis	N	Mean	SD	Df	t-Value
Computer attitude of total male under graduate students of Science and Social Science	50	79.42	7.19	98	0.90
Computer attitude of total female under graduate students of Science and Social Science	50	77.54	7059		

Not significant at 0.01 level

and construct validity is determined by careful comparison of the items by computer expert, and opinions and suggestions sought from the experts of psychology and education.

The discussed tool is based on Likert five points scale, which follows a coring pattern like 5, 4, 3, 2, 1 for positive statements: SA (Strongly Agree), A (Agree), UD (Undecided), D (Disagree), SD (Strongly Disgree); and for Negative Statements it follows 1, 2, 3, 4, 5 accordingly.

Statistical Techniques Used. The data was

analysed with the appropriate statistical measures to justify the objectives of the present study. Descriptive statistical measures like mean and standard deviation were used in order to describe the nature of the sample taken. Inferential statistics like t-test is applied for the purpose of inferential analysis.

ANALYSIS AND INTERPRETATION OF DATA

The analysis of data was performed in order to make inferences and generalisation about the population. The SPPS (Statistical Package for Social Science) version 22.1 was used with the supplement of Microsoft excel. In order to test the Null hypotheses, t-test was applied.

Table 1 reveals that "t" value 0.45 is statistically not significant at 0.05 level. This means that there is no significant difference between the computer attitude of male and female Science under-graduate students. Hence, null hypothesis is accepted. This means both male and female of Science under-graduate students have similar computer attitude.

Table 2 shows that the "t" value 0.29 is statistically not significant. This signifies that there is no significant difference between the computer attitude of male and female Social Science under-graduate students. This infers that both male and female of Social Science under-graduate students have same attitude towards computer.

A close view of table 3 reveals that the "t" value 0.87 is statistically not significant. Hence, null hypothesis is again accepted. This means male under-graduate students of both streams (Science and Social Science) have no difference in attitude towards computer.

A close inspection of table 4 shows that the "t" value 0.05 is statistically not significant. Hence, once again null hypothesis is accepted. This signifies that female under-graduate students of both streams (Science and Social Science) have no difference in computer attitude.

A close view of table 5 reveals that "t" value 0.09 is statistically not significant. This signifies that there is no significant difference between the computer attitude of total male and female under-graduate students of Science

and Social Science. Hence, null hypothesis is again accepted. It means that total male and female under-graduate students of both steams (Science and Social Science) have similar attitude towards computer.

So, the findings of the study are: (1) No significant difference was found between the computer attitude of male and female under-graduate students; (2) No significant difference was found between the computer attitude of male and female Social Science under-graduate students; (3) No significant difference was found between the computer attitude of male Science and Social Science under-graduate students; (4) No significant difference was found between the computer attitude of female Science and Social Science under-graduate students; and (5) No significant difference was found between the computer attitude of total male and female under-graduate students of Science and Social Science.

CONCLUSION [1]

Computer attitude casts a positive impact on the educational activities. It has become the part and parcel of educational system. Due to the impact of ICT (Information and Communication Technology), or extensive use of it in educational sector, drastic changes have taken place, especially in the process of teaching and learning. This is the impact of ICT that computer education has been declared as an important aspect of curriculum at every level. Only inclusion of computer education in the curriculum is not the security of getting success from it. A positive attitude is needed to make use of it in the professional and occupational life.

Several studies have been taken by different researchers on the computer attitude of students with reference to different socio-economic contexts of them. However, present study is concerned to the computer attitude of male and female under-graduate students

of Science and Social Science streams. Finally, the results reveal that both male and female of Science and Social Science streams have shown high computer attitude with comparatively higher and lower among each other. In the light of result, attempt should be made to make use of the computer attitude of students in better way by providing the access of computer facility to them that ultimately could bring positive change in the arena of education system, especially in teaching and learning process.

The findings of the present study have implications for teachers and professionals in addressing the need of making availability of computer accessibility to under-graduate students. Students' computer potentialities can be enhanced by giving the training about the computer based basic applications. The overall quality of education, especially higher education, can be improved by enhancing and trapping the computer attitude of under-graduate students.

Further, expansions and provisions of computer education can be made in the light of present study. Under-graduates of Science with higher computer attitude can be placed for the specialization of computer education. Whereas the under-graduates of Social Science can be put towards the computer based professional courses to earn their livelihood.

Following suggestions can be made for the further study: (1) the present study was conducted on the under-graduate students of Science and Social Science streams. However, similar study can be carried out on the students of Art stream with especial consideration of language students; (2) it is suggested that same study can be taken on the Research Scholars as well the Post-Graduate students of different streams; (3) further study can be conducted on the under-graduate students of rural and urban domain; (4) a very meticulous study can be attempted by applying more sophisticated statistical techniques, such as ANOVA or Analysis of Variances, Regression Analysis, Coefficient and Correlation, and so on; (5) further research can be planned out on a large scale by using different sampling techniques; (6) a comparative study can be made on the under-graduate female students of *madrasa*s

and college level institutions; and (7) further study can be conducted on the same problem in relation to different psychological variables.[2]

References

AICSM [All India Computer Saksharta Mission]. (1999). *An Autonomous Institution.* New Delhi: Registered No.61/RJ, 1882-17-4219/IV and 21, 1880-S/55556, Government of India.

Allport, G.W. (1935). "Attitudes" in C.M. Murchenson [ed]. *Handbook of Social Psychology.* Warchester, Mass: Clark University Press.

Brock, B.D. & M.L. Sulky. (1994). "Attitude towards Construct Validation and Relation to Computer Use" in *Journal of Organizational Behavioral*, Vol.15, No.1, pp.17-35. Available online also at: http://www.jstor.org/page/info/about/policies/terms.jspJSTOR [accessed in Aligarh, India: May 20, 2015].

Despotakis, C.T., E.G. Palaigeoriou & A.I. Tsoukalas. (2007). "Students' Attitudes towards Animated Demonstrations as Computer Learning Tools" in *Educational Technology & Society,* 10(1), pp.196-205.

Fisseha, Mikre. (2011). "The Roles of Information and Communication Technologies in Education Review Article with Emphasis to the Computer And Internet" in *Ethiopian Journal of Education and Science*, Vol.6, No.2. Available online also at: Http://Www.Ajol.Info/Index.Php/Ejesc/Article/Viewfile/73521/62437 [accessed in Aligarh, India: May 20, 2015].

JLNCSM [Jawahar Lal Nehru Computer Saksharta Mission]. (2010). *Trust & Society.* New Delhi: Registered Under the Society & Public Trust Act 21860 (Reg. No S\97) and Public Charitable Trust Act 1882, Under Section 17 Reg. No.1946 from Government of India.

Kay, R. (2007). "Gender Differences in Computer Attitudes, Ability, and Use in the Elementary Classroom". *A Research Monograph*. A Research into Practice Sellers Produced by a Partnership between the Literacy and Numeracy Secretariat and Ontario Association of Deans of Education.

Khatoon, T. & M. Sharma. (2011). *Computer Attitude Scale: A Manual for CAS*. Agra, Uttar Pradesh, India: Agra Psychological Corporation.

Kinzie, B.M., B.A.M. Decourt & M.S. Powers. (1994a). "An Examination of Gender Differences in Computer Attitudes, Aptitude, and Use". *ERIC Paper* presented at the Annual Conference of the American Educational Research Association in San Francisco, CA, on April 20-24.

Kinzie, B.M., B.A.M. Decourt & M.S. Powers. (1994b). "Attitudes and Self-efficacy Across Undergraduate Disciplines" in *Research in Higher Education*, Vol.35,

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[2]***Statement:*** Herewith, we have declared that this paper is our original work; so, it is not product of plagiarism and not yet be reviewed as well as be published by other scholarly journals.

No.6, pp.745-754. Available online also at: http://www.jstor.org/stable/40196198 [accessed in Aligarh, India: May 20, 2015].

NCSM [National Computer Saksharta Mission]. (2008). *Ministry of HRD Government of India.* New Delhi: Regd. No.Is S-6422 1233.

Singh, K. & R.K. Allen. (2007). "Women in Computer-Related Majors: A Critical Synthesis of Research and Theory from 1994 to 2005" in *Review of Educational Research*, Vol.77, No.4, pp.500-533. Available online also at: http://www.jstor.org/stable/4624909 [accessed in Aligarh, India: May 20, 2015].

Smith, R.C. (2000). "Starting with Ourselves: Teacher-Learner Autonomy in Language Learning" in B. Sinclair, I. McGrath & T. Lamb [eds]. *Learner Autonomy, Teacher Autonomy: Future Directions*. London: Longman, pp.89-99.

Vale, M.C. & C.G. Leder. (2004). "Student Views of Computer-Based Mathematics in the Middle Years: Does Gender Make Difference?" in *Educational Studies in Mathematics*, Vol.56, No.2/3, pp.287-312. Available online also at: http://www.jstor.org/stable/4150285 [accessed in Aligarh, India: May 20, 2015].

The Under-Graduate Students of India
(Source: http://www.universitiesrankings.com, 20/5/2015).

Government of India has also been trying hard from the last few years to provide computer education at every level, but little success could be realised. Now, computer education has been imparting at university, college, and school levels. Even *Madrasa*s are also getting benefit to have computer education under the provisions of various government sponsored programmes. But, the desired results are not coming, especially from the rural areas, due to certain reasons. Among them one could be the lack of proper attitude of students towards the computer education.