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RESEARCH ARTICLE

GENDER DIFFERENCE IN ATTITUDE ABOUT INFORMATION AND COMMUNICATION TECHNOLOGY AMONG UNIVERSITY STUDENTS

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ABSTRACT

This present study was conducted to provide insights regarding the possible gender differences in the male and female students at University level in term of information and communication technology use. The research was a descriptive in its nature. The objective of the study was to analyze the opportunities of access to Information and communication Technology (ICT) for male and female students at the university level. The population was the male and female students of University of Bangalore, India. The purposive sampling technique was used to gather data from the faculty of social sciences. Data were collected by administering a questionnaire based on a Likert scale. The data were tabulated, analyzed and interpreted. The percentage, mean and one way analysis of variance were applied to analyze the data. The results of the analyzed data revealed that gender differences existed regarding access to ICT among university students. Provision of necessary support for equal access to female students in ICTs through expansion of ICT infrastructure in the educational institutions particularly in universities, Computer Assisted Instructions (CAI) system and awareness about the use of ICTs is essential to overcome the identified gender inequality.

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INTRODUCTION

Information and communication technology (ICT) has brought about a revolution in every walk of today's life. Particularly it has become an integral part of education and its impact on teaching and learning is widely accepted. Teaching and learning strategies in education have been radically revised with the aim of providing better service to the learners through the intensive use of the ICT. The information technology in teaching and learning has created a need to transform how students learn by using more modern, efficient, effective and cost-effective alternatives in the form of e-learning. An e-learning environment acts as an interface between the students and their learning objectives. It provides different means to achieve the learning goal of students. The e-Learning environment can be accessed by using a web browser over the Internet or Intranet. It supports several learning strategies and different ways of interaction, communication and collaboration-learning. It is deployed with the objective of enhancing students" knowledge and saving the cost. e-learning helps in reaching geographically dispersed groups, to provide "anywhere-anytime" learning, to provide consistency, to ensure compliance with regulations, and to improve productivity etc. Educational institutions use e-learning for broadening the academic scope. e-learning provides much more references and learning scopes than the ones provided in the usual text books. Using e-learning portal can be of great help. Class assignments can be assigned to the students and also submitted back through this interface. e-learning is also associated with the new ways of learning that are more cost efficient than traditional learning strategies. It also allows students to take better control of the process of learning. This research builds a multiple approach to examine individuals" attitude towards computer technology and e-learning. Taking gender as criteria this research focuses on examining the attitude towards computer technology and e-learning. After 2000 the widespread use of ICT among students was seen throughout the world. The low price of computers and Internet connectivity brought this technology not only to university campuses but also to the homes of students. Even middle class university students in developing countries now own computers. ICT use by students has expanded to Internet, e-mail, chat, programming, graphics, spreadsheet, online shopping, online literature searching, and other educational materials. Students' gender, age and year of study have no significant effect on their computer use and attitudes. One

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worth mentioning finding of recent literature is that the students mostly use ICT for general purpose, i.e., communication, word processing, entertainment, etc. rather than educational purpose. Even students of professional subjects do not use ICT excessively for accessing educational materials. Various researches to study the effect of demographical variables such as, gender, age, academic qualifications, and skill and use of the computer and Internet etc on the attitude of students towards ICT have been carried out (Shashaani, 1997; Roca *et al*., 2006; Paris, 2004 and Bertea, 2009). Egbo *et al*. (2011) in their research concluded there is the tendency that female students would accept ICT use more than their male counterparts. Contrary to this Liaw and Huang (2011) in their results demonstrated that male students have more positive e-learning attitudes than female students. They also suggested that computer related experience is a significant predictor on learners‟ self-efficacy and motivation toward e-learning. Bebetsos and Antoniou (2009) in their study indicated that gender differences exists for “affect” and “perceived usefulness”, whereas no gender differences were indicated for attitude towards Physical activity. Cheng (2006) in his research found that demographical variables such as gender, computer skills and school system remained insignificant.

Experience of applying e-learning for business courses played a key factor in affecting the level of acceptance among students. He also indicated positive attitude of the students about e-learning. Keller and Cernerud (2002) have identified variables such as age, gender, previous experience of computers, technology acceptance and individual learning styles as major predictive factors when discussing acceptance of technology by students. Thus the study aims to analyze the effect of gender on attitude towards computer technology acceptance and e-learning. Staehr, Martin and Byrne (2001) surveyed the attitudes to computers, and the perceptions of a computing career, of students enrolled in an introductory computing course at La Trobe University, Australia. Previous programming experience had a positive effect on computer confidence, and ownership of a home computer had a positive effect on computer anxiety and computer confidence. There was a gender difference in computer attitudes and perception of a computing career, with females scoring significantly lower than males on all measures. In a survey of 1159 medical students in Denmark, Dorup (2004) found that 71.7% respondents had access to a computer at home. Approximately 90% of students used e-mail regularly, 80% used the Internet regularly, and 60% had access to the Internet from home. Significantly more males than females had access to a computer at home, and males had a more positive attitude towards the use of computers in their medical studies. In view of the above the following hypothesis will be tested in the present study. 1. There will be significant difference among gender in terms of attitude about information and communication technology.

MATERIALS AND METHODS

Participants

Participants of the present study were 61 college students (25 males and 36 females) studying in different universities and colleges located in Bangalore, India. The age of these participants ranged from 20 to 30 years (*Mean* = 23.30, *SD* = 1.70). The majority of the participants (54.01%) belong to urban areas and 45.09% were living in rural areas.

Measures

The study data was gathered through administration of questionnaire which was designed by the researcher. The questionnaire consisted of 2 sections: Section “A” concerned bio-data of the students (including gender, faculty, family income, area of residence etc); Section “B” dealt with students’ attitudes toward ICT education. The questionnaire was predominantly made up of close-ended items.

Procedure

The researcher acquired a written introductory letter from Head of Department, Mass Communication University of Bangalore, introducing the researcher to the respondents. After seeking required permission from concerned university authorities, the participants were personally contacted. They were briefed about the purpose of research and questionnaire used in the study. After seeking consent of the student, a suitable time and date was fixed for data collection. Before administering the questionnaire, the purpose of the study was again explained to the participants and they were assured that their responses will be kept confidential and will be used for research and academic purpose only. A good rapport was build with the participants for getting correct responses. Necessary instruction and guidelines were provided to them for properly filling the questionnaire. After this, the questionnaires were provided to them and they were requested to fill-up the questionnaire as per the instructions given in the questionnaire, After completion of the questionnaire participants returned the questionnaire and they were thanked for their participation and cooperation.

Data analysis

Descriptive statistics was used to describe the major socio-demographic and background information about the subjects. To explore the gender difference in Information and Communication Technology Use, one-way analyses of variance were used. The Statistical Package for the Social Science (SPSS) version 18.0 was used to do the analyses.

RESULTS

One-way analysis of variance was used to examine gender difference in attitude about information and communication technology of participants. Table 1 shows mean scores and *SD's* of male and female participants in attitude about information and communication technology along with analysis of variance *F* values. Result show significant difference between different statements about attitude of information and communication technology of male and female participants.

Analysis of variance *F* values revealed significant difference for statement 3, 4, 5, 8, 9, and 10. Mean scores of male and female participants clearly indicate that female participants reported higher score in terms of statement 4, which was followed by statement 8, and 9, in comparison to their counterpart male participants.

Table 1. Means, Standard Deviations and Analysis of Variance of Attitude about Information and Communication Technology among Male and Female Participants

Statements	Male (n = 25)		Female (n = 36)		*F* (1, 59)
	M	*SD*	*M*	*SD*	
1. Awareness about communication technology	6.12	1.88	5.33	2.93	1.40
2. Usage of communication technology	5.16	2.10	4.25	2.12	2.75
3. Lack of knowledge about communication technology	2.22	1.42	1.40	1.00	6.25*
4. Time spend in communication technology	2.68	1.07	3.56	.81	13.26**
5.. Gaining knowledge through communication technology	5.12	2.83	3.11	2.36	9.05**
6. Communication technology as a useful tool	1.52	.77	1.33	.48	1.36
7. Communication technology helps in education carrier	1.36	.49	1.31	.47	.19
8. Communication technology helps in modifying behavior.	3.00	1.38	3.53	.94	6.15*
9. Communication technology increases your interest in education	1.36	.70	1.83	.61	7.88**
10. Communication technology enhance motivation in studies.	2.72	1.62	2.08	1.13	8.27**
11. Communication technology saves your time.	3.24	3.07	4.64	3.14	2.98

While male participants reported higher scores in statement 3, 5, and 10 in comparison to their counterpart female participants. However, significant difference between attitude about information and communication technology of male and female participants were not found for statement 1, 2, 6, 7, and 11.

DISCUSSION

Present study examined gender difference in attitude about Information and Communication Technology among male and female participants. Findings of the present study regarding gender differences in attitude about Information and Communication Technology showed significant differences between male and female participants. These findings supported the hypothesis regarding gender differences in attitude about Information and Communication Technology (Houtz and Gupta, 2001; Shashaani and Khalili, 2001; Broos, 2005; Liaw and Huang, 2011; Staehr, Martin and Byrne, 2001; Dorup, 2004; Egbo *et al*., 2011).

Thus the hypothesis that attitude about information and communication technology of male and female participants is significantly different was partly supported. In addition, present findings regarding gender differences in attitude about information and communication technology are not in line with the findings of studies in which males have good attitude about information and communication technology (Liaw and Huang, 2011; Staehr, Martin and Byrne, 2001; Dorup 2004), while attitude of females regarding information and communication technology were observed better (Egbo *et al*., 2011). Also, present findings are inconsistent with previous research studies that examined gender difference in attitude about information and communication technology (Mizrachi and Shoham, 2004; Gay *et al*., 2006; Inoue 2007; Popovich, Gullekson, Morris and Morse, 2008). The findings of the present study were affects by some methodological limitations that may affect the generalizibility of the results. The data of the present study were collected from Bangalore city only. Data gathered in this cultural context may therefore be unique, and it is entirely possible that a replication of this study in a different part of the country might yield different findings. Furthermore, the use of self-report measures, which are also affected by a participant's level of self-awareness, was another limitation of this study. Also, sample size of the present study was relatively small and homogeneous which limits generalization.

The cross-sectional design used in the present study does not allow drawing conclusions regarding causality. Longitudinal research will be needed to support such conclusions.

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