ATTITUDE TOWARDS ICT USAGE IN EDUCATION: A STUDY OF PROSPECTIVE TEACHERS OF HARYANA

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Abstract: The paper presents a study about the attitudes of Prospective teachers towards ICT in colleges of Haryana. The sample consists of 200 Prospective teachers from ten colleges of education selected by stratified random sampling technique. The investigator developed a self-made questionnaire of 20 items to measure the attitude of the Prospective teachers towards ICT. The investigator established reliability by split-half method, and the value is 0.81. To find out the meaning, interpretation of the raw scores, the data were analyzed using Mean, Standard deviation & Critical Ratio. The findings revealed that the Prospective teachers' possessed favorable attitude towards ICT, however, Prospective teachers' attitude towards ICT is not affected by Gender and Stream of education.

Index Terms **- ICT, Attitude, ICT attitude, Prospective Teachers.**

I. INTRODUCTION

Emergence of Information and Communication Technology has ushered in a new era in our civilization in which digitization has become a better alternative, because it has influenced every facet of human and students' life including education. Information and Communication technologies have the power to transform the educational environment and can contribute to improvement of educational process, the leverage of teaching & learning outcomes and establishment of a collaborative educational environment. With use of ICT a basic transformation is taking place in the way our teachers teach and students learn. Learning is no longer an initial activity preparing one for the productive life, but rather a continuous necessity to cope with the demands of the society. The information communication technology provides opportunities for flexibility interactivity and accessibility through multi channel applications. Learning 'using' technologies has become a global phenomenon. The Internet is often seen as a value-neutral tool that potentially allows individuals to overcome the constraints of traditional elitist spaces and gain unhindered access to learning.

ICT as applied to education/training process has generated an increased interest in the past few years. This interest has been to a great extent associated with the appreciation of the many ways computer support can improve the institutional and management responsibility within the total instructional system. The supporters of ICT use for the instructional process offered the promise of greater student achievement, more efficient use of human and material resources, improved attitudes towards learning process and in enhancement of education. Effective use of ICT is believed to contribute to improve performance. In fact, computer technologies play an important role in terms of instructional methods and learning process. It is, therefore desirable to when learning with computers. Attitudes and beliefs predict behaviour and behavioural intentions. Belief about an object leads to an attitude towards it and that in turn, leads to behavioural intentions regarding the object. These intentions are responsible for actual behaviour towards an object. When applied to use of ICT , the theory explains that attitude towards use of computer and related technologies affects user behavioural intentions (future desire), which further affects user actual usage experience (Levine and Donitsaschmidt, 1997). Healthy attitudes of the people of a nation ultimately lead to the development of the nation. It is true unless people develop attitudes and skills, development cannot be self-sustained. Attitudes are comparatively stable feelings, since they are development over several years of experience and training. Development of favourable attitude among the students is possible when teachers have positive attitude towards computer education. This attitude has direct impact on the child and through

them on the society. There is also evidence of growing concern that students' negative attitudes might affect individual motivation and performance and thus lead to certain groups having fewer opportunities to use computers which in turn world interfere with future work options.

Pre-service teachers have positive attitudes towards the computer use in classroom teaching (Luan & Roslan ,2005; Mello ,2006 ; Teo 2008 ; Ozdaml, Hursen & Ozcinar ,2009 ; Sa'ari, and Birisci, Metin & Karakas 2009) .

Although many research studies confirmed that there are several factors affecting computer attitude such as gender, computer experience, age, and socio-economic status. Among them gender is the most studied factor. However, research about the effects of gender on attitude towards computers provided conflicting results (Pamuk, & Peker, 2009). Previous results of the study demonstrate that the most important predictor of computer attitude is previous computer experience and encouragement. But when these variables are controlled, the researcher found there is no gender difference in computer attitude. Various researchers found that there were no statistically significant differences in terms of attitude toward computer. Prospective elementary teachers' general attitudes towards computer and Internet use are at higher level and there are no significant difference between male and female (Abang Ahmad Ridzuani, Sam & Aliza Ahmad,2001; Birisci, Metin, & Karakas, 2009). Mizrachi & Shoham (2004) investigated in Israel among B.Ed students teachers training college and found that there were no significant differences between gender groups in regard to computer attitude. Deniz (2007) also found in Turkey among prospective classroom teachers there is no significant difference between male and female towards computer technology as instructional tools. This is similar result with another studies (Luan, Fung & Hanafi, 2008) deployed on student teachers in public university in Malaysia and indicated that there was no significant gender difference in the attitudes toward the Internet but instead; it offered some evidence that the gender gap in attitudes towards the Internet was declining. They concluded that gender may not be a significant issue in the context attitude of computer technology.

On the other hand, Ozdaml, Hursen, Ozcinar, 2009 in their study found that there exist significant gender differences in attitudes towards computer as instructional technology. Another study also sought with this result is the computer knowledge and use in education in terms of gender was having statistically difference (Tezci, 2009). The difference in the attitude towards computer technologies between male and females was significant. Male were twice more likely than female to feel more confident with computer technology (Khaled Alshare; Musa Al-Dwairi; Iman Akour 2003). But other article (Hajah Rugayah Hj. Hashim & Wan Narita Mustapha 2004) sought female respondents have more positive computer attitudes than males did. To increase attitude and frequency of use one semester computer training was organized in structured environment but the gender gap were not completely wiped out, however ; female students still had less positive attitude towards computer than male students. The explanation of such result is that the gender gap in working with computer is created and influenced by multiple factors; therefore no single solution will be eliminated (Shashaani, 1997).

Computer attitudes are not only affected by gender there are many factors those can affect towards computer attitude. Social status also is a factor for computer attitude, like township schools would have a less positive attitude than students from the upper and middle class schools. Although no significant gender differences were found in students' computer attitude (Bovee, Voogt, & Meelissen, 2007).

Sindhwani, A. (2012) reported that College teachers in Haryana had positive attitude towards use of ICT. The teachers considered using the ICT as essential and necessary in a period of modern technology. It seemed that they naturally accepted the use of technology as an undeniable part of instruction so their study indicates that the teachers' perceptions and attitudes towards ICT are generally positive.

Shakila, J. (2012) conducted a study on awareness of online Learning among teacher trainees and online learning habits of student-teachers. She found that the student-teachers had very high awareness of online learning and significant differences between male and female student teachers in awareness of online learning. However, no significant difference were found to exist between urban and rural and science and social student-teachers in awareness of online learning.

Upadhyaya, P. (2013) in his study on attitude towards computer among B. Ed. students reported that male and female B. Ed students do not differ from one another on their attitude towards computer; and B. Ed students of Science steam have more favourbale attitude towards computer than their Arts stream counterparts.

Gupta M.M. (2015) conducted a study on "attitude of prospective teachers towards the use of information and communication technology (ICT) in teacher education". He reported that there were no significant differences between the attitude of male and female, science and arts prospective teachers but significant differences were found between urban and rural attitude of prospective teachers towards the use of ICT in teacher education.

II. Rationale of the Study

"Teachers need to be prepared to empower students with the advantages technology can bring. Schools and classrooms, both real and virtual, must have teachers who are equipped with technology resources and skills and who can effectively teach the necessary subject matter content while incorporating technology concepts and skills." *(*UNESCO ICT-CST project).

ICT is being considered as the backbone of the education system in the modern days. The students now gets to learn through internet based system, submit their assignments on line, hold discussion with the teachers and counselors, study groups and their guides. Teachers' role is more challenging in technology based classroom. All of the success of implementing computer and students' achievement depend on teacher's attitude of using ICT and their willingness. If education within the technology ecosystem is the way to the future, then all educators need opportunities to improve their ICT confidence and proficiency. It is due to this, that a vast literature on psychological research is focusing on the way computer related attitude and beliefs affect the use of computers by students and adults. A number of researchers have examined computer related attitude dimensions (e.g. liking, usefulness, ease of use etc.) and the relationship between these attitudes and computer use. So the present study was conducted to study the computer attitude in relation to sex and stream of the prospective teacher of Haryana.

2.1 Objectives

1. To study and compare the ICT attitude of male and female prospective teachers.
2. To study and compare the ICT attitude of male and female prospective teachers from Science stream
3. To study and compare the ICT attitude of male and female prospective teachers from Arts stream.
4. To study and compare the ICT attitude of male and female prospective teachers from Arts and Sciences stream.

2.2 Hypotheses

1. There are no significant differences between ICT attitude of male and female prospective teachers.
2. There are no significant differences between ICT attitude of male and female prospective teachers from Arts stream.
3. There are no significant differences between ICT attitude of male and female prospective teachers from Science stream.
4. There are no significant differences between ICT attitude of male and female prospective teachers from Arts and Science stream.

2.3 Delimitations of the Study

Keeping in view the time available and limited resources the study has been delimited to only 200 prospective teachers of Haryana pursuing B.Ed. Programme. It has been also delimited only to the comparison of two variables –Gender and Stream of Education.

III. OPERATIONAL DEFINITIONS OF THE TERMS

3.1 Attitude

Attitude may be defined as a generalised reaction for or against a specific psychological object. The object may be a person or a group, a kind of object or living thing, concept or values, events or situations, institutions or systems (Thurstone, L. L. and Chave E. J ,1929)

3.2 ICT Attitude

It involves all positive and negative attitudes or generalized reactions of different individuals towards Computer Education. Although Computer education has became an essential part of our Present Education System. But still different people have different attitude towards Computer Education.

3.3 Prospective Teacher

The term prospective teacher has been used for the person who are under Teacher's Professional Training Programme. Such Programmes are B.Ed. (Bachelor of Education), B. El. Ed. (Bachelor of Elementary Education), DIET (District Institute of Educational Training) etc.

IV. RESEARCH METHODOLOGY

4.1 Method

The investigator has applied Normative Survey Method to the research.

4.2 Population and Sample

All the students studying in B.Ed. course being offered by colleges of education affiliated to Ch. Ranbir Singh University, Jind constituted the   population for present study.The investigator has taken a sample of 200 prospective teachers from the selected 10 colleges, by using lottery method of random sampling

technique. 20 prospective teachers were selected from each college. Therefore the total sample consists of 200 prospective teachers.

4.3 Tool Used

"**ICT Attitude Scale** developed by the investigator herself was used for data collection. The attitude scale in is final form consists of 20 statements related to two dimensions that are related to ICT and effect of ICTs on educational environment of school.

4.4 Scoring Procedure of "ICT Attitude Scale"

The "ICT Attitude Scale" was constructed by the investigator is a scale having 20 statements of which 13 of them positive statements and the remaining 7 were negative statements.

Scores for Positive Statements

- ❖ 5 for Strongly Agree opinion (SA)

- ❖ 4 for Agree opinion (A)

- ❖ 3for Undecided opinion (U)

- ❖ 2 for Disagree opinion (D)

- ❖ 1 for Strongly Disagree opinion (SD)

Scores for Negative Statements

- ❖ 1 for Strongly Agree opinion (SA)

- ❖ 2 for Agree opinion (A)

- ❖ for Undecided opinion (U)

- ❖ for Disagree opinion (D)

- ❖ for Strongly Disagree opinion (SD)

The sample prospective teachers were asked to tick any one response out of given five alternatives for each statement. The maximum possible scores on the whole attitude were 150 and the minimum possible scores were 30.

4.5 Statistical Techniques used

Attitude scores were used for calculating means and S.D. and they are compared by using Critical Ratio.

V. RESULTS AND DISCUSSION

Table 5.1: Comparison of ICT **attitude of male and female prospective teachers**

Prospective teachers	Total number	Mean	S.D.	C.R.	Level of significance
Male	100	60.01	6.873	1.30	Not significant
Female	100	61.31	5.162		

An analysis of table 5.1 reveals that the prospective teachers have favourable attitude towards ICT. There is slight variation in mean scores of male and female prospective teachers which is in favour of female prospective teachers. The critical ratio has been calculated as 1.30 for df 198 which is insignificant at 0.05 level. Therefore, the null hypothesis "There is no significant difference in ICT attitude of male and female prospective teachers " is retained.

Table 5.2: Comparison of ICT attitude of male and female prospective teachers from Arts stream

Prospective teachers	Total number	Mean	S.D.	C.R.	Level of significance
Male	100	59.06	5.89	1.864	Not significant
Female	100	61.4	4.98		

From table 5.2, it is clear that the critical ratio has been calculated as 1.86 for df 198 which is insignificant at 0.05 level. The female prospective teachers from Arts stream have more favourable attitude towards ICT as the difference in mean scores of male and female prospective teachers is in favour of female prospective teachers. Therefore, the null hypothesis "There is no significant difference in ICT attitude of male and female prospective teachers from Arts stream" is retained.

Table 5.3: Comparison of ICT attitude of male and female prospective teachers from Science stream.

Prospective teachers	Total number	Mean	S.D.	C.R.	Level of significance
Male	100	60.96	7.61	0.171	Not significant
Female	100	61.23	5.33		

A scrutiny of table 5.3 reveals that both the male and female prospective teachers of Science stream have favourable attitude towards ICT. There is slight variation in mean scores of male and female prospective teachers which is in favour of female prospective teachers. The critical ratio has been calculated as 0.171 for df 198 which is insignificant at 0.05 level. Therefore, the null hypothesis "There is no significant difference in ICT attitude of male and female prospective teachers " is retained.

Table 5.4: Comparison of ICT attitude of prospective teachers from Arts and Science stream.

Prospective teachers	Total number	Mean	S.D.	C.R.	Level of significance
Graduate from Arts	100	60.23	5.62	0.707	Not significant
Graduate from Science	100	61.1	6.62		

An analysis of table 5.4 indicates that the prospective teachers of Science stream have favourable attitude towards ICT. There is slight variation in mean scores of prospective teachers which is in favour of prospective teachers belonging to science stream. The critical ratio has been calculated as 0.707 for df 198 which is insignificant at 0.05 level. Therefore, the null hypothesis "There is no significant difference in ICT attitude of prospective teachers from science and arts stream " is retained.

VI.   MAIN FINDINGS

On the basis of the analysis and interpretations of the collected data the researcher has reached to the following findings.

1. All the male and female prospective teachers have favourable ICT attitude.
2. All the male and female prospective teachers from Science stream have favourable ICT attitude.
3. All the male and female prospective teachers from Arts stream have favourable ICT attitude.
4. All the prospective teachers from Science and Arts stream have favourable ICT attitude.
5. There is no significant difference between the ICT attitude of male and female prospective teachers.
6. There is no significant difference between the ICT attitude of male and female prospective teachers from Sciences stream.
7. There is no significant difference between the ICT attitude of male and female prospective teachers from Arts stream.
8. There is no significant difference between the ICT attitude of male and female prospective teachers from Arts and Sciences stream.

The findings of the study reveal that the prospective teachers do not show any significance difference in ICT attitude in relation to sex and stream. The findings are in consonance with earlier studies conducted by Sekar & Lawrence, 2015; Abang Ahmad Ridzuani, Sam & Aliza Ahmad,2001; Birisci, Metin, & Karakas, 2009;. Mizrachi & Shoham ,2004: Deniz,2007. The investigator found the performance of female prospective teachers a little bit higher than the male prospective teachers, but the difference is not significant at 0.01 level and 0.05 level of significance. The reasons for better performance of female prospective teachers could be environmental and social rather biological.

VII.   EDUCATIONAL IMPLICATIONS

Teachers and students must not ignore this unique technological advancement; rather they should participate in this whole heartedly. The time devoted for computer education at present is too less for developing interest and developing interest and enthusiasm for improving the ICT attitude and skills as ICTs have great potential in education. Adequate facilities should be available, for the study in the colleges of Education for the students. Teacher Educators have to be ready to take up this new challenge, by obtaining training in the use of ICTs since the onus lies on them.

Further Suggestions

1   The present study can also be conducted on the complete population of prospective teachers (under B.Ed. Programme) of Haryana.
2   A comparative study of the ICT attitude of B.Ed. prospective teachers and B. El. Ed. Prospective teachers can also be conducted.
3   A study of ICT attitude of prospective teachers of Haryana in relation to sex and intelligence, academic achievement, motivation etc. can also be conducted other than sex and graduation stream.

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