



Attitude of Secondary School Teachers towards the Use of Information and Communications Technology (ICT)

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Abstract:

The building block for human resource development of a nation is always its education system. The success of a nation is clearly reflected by its educational policies. This new era has come up with need for the use of information technology in place of teacher dominating classroom centric education system. Now-a-days, Information and Communications Technology (ICT) is accepted as a modern instrumental tool to modify the teaching methods. Educationists believe that with the uses of ICT, quality of education can be significantly improved. The purpose of the study is to measure the secondary teachers' attitude towards use of ICT in teaching learning process. The sample selected for this study consists of 100 secondary level teachers in Howrah and Kolkata district. The data were analyzed with respect to five categorical variables - gender, locale, type of school with respect to management, age group and qualification of teacher. A self-modified questionnaire used in the present study as a tool. From the data analysis we saw that attitude towards the use of ICT have no significant difference with respect to any categorical variables. So we can conclude that the attitude towards the use of ICT only depends on the human nature and not on the persons' gender, experience, qualification, age or the person's habitat. Mainly adaptation power of human beings is the key ingredients of developing attitudes towards ICT uses.

Key words: Attitude, Information and communication technology (ICT), Attitude towards ICT, Secondary school teachers.

1.1. Introduction:

Now-a-days, after birth, children are encountered in a world which is technologically advanced and developed but they often go in schools that offer no use of technology. But we believe in science, which continuously developing and modifying the latest technology, that outgrowth result in many changes in school, house, society and work environments. Like every field of our life, the teaching-learning process are also influenced by the technological development. So we cannot neglect the field of education from these changes and development. On the one hand by the knowledge of how to use developing and changing technologies, people progress their skill of having access to information and use of it to find an opportunity for actively participating in the process. This new era has come up with need for the use of information technology in place of teacher dominating classroom centric education system. Now-a-days, for this regard a new term has introduced, ICT: Information and Communications Technology. ICT programme is very relevance and flexible in every field of our life. As a result ICT is successfully accepted as a

modern teaching –learning instrumental tool in school education and using this tool teachers can modify the teaching style, increase the students’ interest and a new way of representing, communicating and working with information. Internet,laptop,smart board, projector, radio, television, speaker, mobile devices,learning software,hardware and various other ICT based tools can be used to improve critical analysis and literacy skills of the students. The fast going progress in ICT has been greatly influenced the teaching-learning process. Students’ activities in classroom can be meaningful and joyful if we successfully integrate ICT based teaching learning tools. And it will make a sustainable learning experiences. By experiencing ICT based classroom teaching, student can improve their constructive thinking power and can easily visualize nonfigurative ideas and discover reliable information. With the help of new possibilities of ICT, students can learn beyond the traditional classroom boundaries. By using computer in learning process we can gather more information, expand creativity and testing of new knowledge more easily in less time than a traditional classroom approach. Now ICT based tools are available in almost every school but main problem is that lack of motivation of teachers to use these ICT based tools and the interest of using ICT in classroom teaching differs from teacher to teacher. The successful deployment of technologies in the classroom fully depends on the teachers’ right attitudes towards the proper use of ICT based tools. So the role of a teacher becomes very important to influence the students to understand and accept ICT efficiently in the teaching learning process. For the effective bonding between teacher and student in the fruitful use of ICT, the attitude of teachers towards the use of ICT should be evaluated with careful statistics and planned survey of a variable data points. Only teachers’ attitude towards the use of ICT will build the future of the education system. With the view spoken above the investigator decided to know the attitude of secondary school teachers towards using ICT in teaching learning process.

In this regard, **Ravindaranath (1993)** in his study “Attitude of DIET trainees toward use of Computer” showed that the DIET trainees possess a positive attitude towards the use of computer in teaching learning process. **Veen (1993)** found that the most important factor effecting teachers’ use of ICT was teachers’ attitudes regarding what should be taught and the way it should be taught. **Cox (1999)** also concluded that the factors like providing professional support to teachers through internet, giving more power to the teacher in school, allowing greater access to computers for personal use, making teachers' administration more efficient were found to be important in influencing teacher's to use ICT in classrooms. **Guha (2000)** also identified that the negative attitude of teachers is the key reason for hampering the use of computer in classroom. In another research, **Sarangi (2003)** found that teacher educators have a low positive attitude for ICT. **Çelik and Bindak (2005)** revealed that attitudes towards the use of ICT was influenced by perceptions of efficacy or beliefs about one’s capacity to use ICT as well as personal background characteristics such as gender, age, years of teaching experience. **Mehra and Newa (2009)** conducted a study on school teachers’ attitude towards ICT. The school teachers exhibited positive attitude towards ICT and higher priority has been given to ICT in teacher education curriculum. **Ana-Belén Sánchez et.al.(2012)** examined the attitude of In service school teacher towards the use of ICT in the classroom and stated that teacher attitude towards ICT were highly positive. **Ndibalema, P. (2014)**

on his study stated that although the teachers have a favorable attitude towards the use of ICT, they were reluctant towards implementation of the technique due to low familiarity of ICT as pedagogical tool.

From intensive study of attitude of school teachers towards the use of ICT revealed that there could be many reasons behind a positive or a negative attitude of school teachers towards the implementation of ICT in class room teaching that should be addressed with utmost care and detailed study of their mentality towards a growing impact of technology to our daily life as well as education system. To supplement these advances, factors like favorable attitude of teachers and school authority towards the use of ICT, continuous training, support and adequate facilities are inevitable.

1.2 Needs of the study:

Over the last few years, ICT has developed rapidly as a powerful tool to support teaching and might be more effective and more efficient than other approaches. The 21st century has become an era of acute modernization and both teacher and students will have to cope with the changes and challenges involved with the use of ICT in student curriculum. Teachers' professional knowledge, skill and capabilities and most importantly their attitude are the main concern regarding the use of ICT. ICT enables teachers in planning and preparing them for more efficient teaching along with an easy learning procedure for the students. Teachers are required to decide how to make appropriate educational use of ICT in the classroom.

ICT integration in school is being comprehended as a necessity and is growing exponentially. In order to accomplish ICT in secondary school, the first need is to study and assess the teachers' attitude. It is the need of the hour to examine and assess the attitude of teachers towards the use of ICT in curriculum.

1.3 Statement of the Problem:

From the above significance the researcher can say that attitude of school teachers predicts an important role and is also very important factor towards the use of ICT, these leads to the statement of the problem is "**Attitude of Secondary School Teachers towards the use of ICT**"

1.4 Objectives of the Study:

O₁: To study the differences between male and female teachers in their attitude towards the use of ICT in teaching learning process.

O₂: To study the differences between urban and rural area secondary school teachers in their attitude towards use of ICT.

O₃: To study the differences between government and private school teachers in their attitude towards the use of ICT in teaching.

O₄: To study the attitude of school teacher towards the use of ICT on basis of teacher's age group.

O₅: To compare the attitude of secondary school teachers towards the use of ICT on the basis of their qualification.

1.5 Hypotheses of the Study:

To test the hypothesis statistically, we use null hypotheses. The following null hypotheses are framed stated below:

H₀1: There is no significant difference between the attitudes of male and female secondary school teachers towards the use of ICT.

H₀2: There is no significant difference between the attitudes of rural and urban secondary school teachers towards the use of ICT.

H₀3: There is no significant difference in the attitude of secondary teachers towards the use of ICT of Government and private school teachers.

H₀4: There is no significant difference in the attitude among secondary school teachers categorized on the basis of age.

H₀5: There is no significant difference in the attitude among secondary school teachers categorized on the basis of their qualification.

1.6 Significance of the Study:

This study is significant because of the lack of awareness of the attitudes of teachers toward ICT within the context of West Bengal schools, even though quite a number of schools are already using it. The findings can be exploited by researchers, policy makers and practitioners. For example, it is critical for teachers to have positive attitudes towards the use of ICT, considering the enormous educational potential. As a consequence the findings have the potential to cause reflections and actions aimed at ensuring teachers' development and sustain positive attitudes towards the use of modern information and communication technologies.

1.7 Delimitation of the Study:

- The study was delimited to only one major variable i.e. teachers' attitude towards ICT only.
- The study was also delimited to 100 samples only.
- One of the major delimitation is, the data was collected from three government aided schools and two private schools only.
- The study was also delimited to two confined demographic area i.e. Howrah and Kolkata only.

2. METHODOLOGY:

Survey method is adopted for the present study .

2.1 Research Design:

This is a descriptive survey type field study on the attitude of secondary school teachers towards the uses of ICT from Howrah, Kolkata, and West Bengal. Quantitative approach is used in this study as the assessments consists numerical analysis and measurements. Data is collected through self-made questionnaire.

2.2. Sample:

The sample consists of 100 teachers who teach at secondary level in Howrah, Kolkata district was selected for the study.

2.3. Sampling Techniques:

In this study, probability sampling techniques, particularly random sampling is being used in order to collect the data.

2.4. Tools:

Tools are devices used to collect appropriate data for the study. Teachers are indicated to answer their level of attitude towards the use of ICT in teaching in a five point scale going from strongly disagree, disagree, neutral, agree, and strongly agree. The ICT Questionnaire has 25 items covering the various dimensions of ICT usage in teaching.

2.5 Variable:

2.5.1 Major Variable:

Attitude towards the use of ICT.

2.5.2 Categorical Variable

- Gender
- Locale
- Types of School
- Age level
- Qualification

3. ANALYSIS AND INTERPRETATION:

The aim of the analysis is to find out the attitude of secondary school teachers towards use of ICT in teaching.

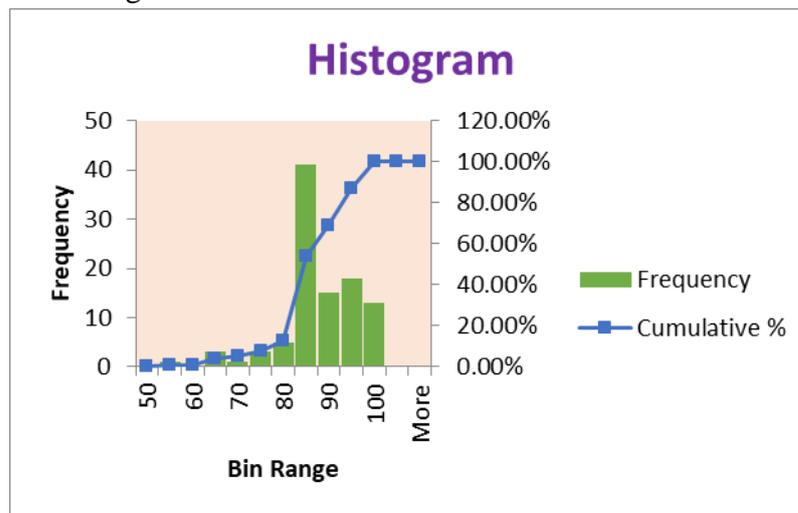


Fig. 1: Histogram of collected data

From, **Fig.1** we found, attitude of school teachers towards the use of ICT, the nature of the Histogram is tends to like Normal Probability Curve (NPC). So we can use inferential statistics like Mean, Standard Deviation, t-test, ANOVA here for further analysis.

Table 1: Descriptive Statistics and t-test of the Attitude of Secondary School Teachers towards the use of ICT with respect to gender:

Variable	N	Mean (M)	S.D.	t-value cal.	'P' value	Remarks	Hypothesis
Female	39	85.95	5.37	1.98	0.75	't' test significant at 0.05 significance level.	Ho1 is accepted
Male	61	85.43	9.64				

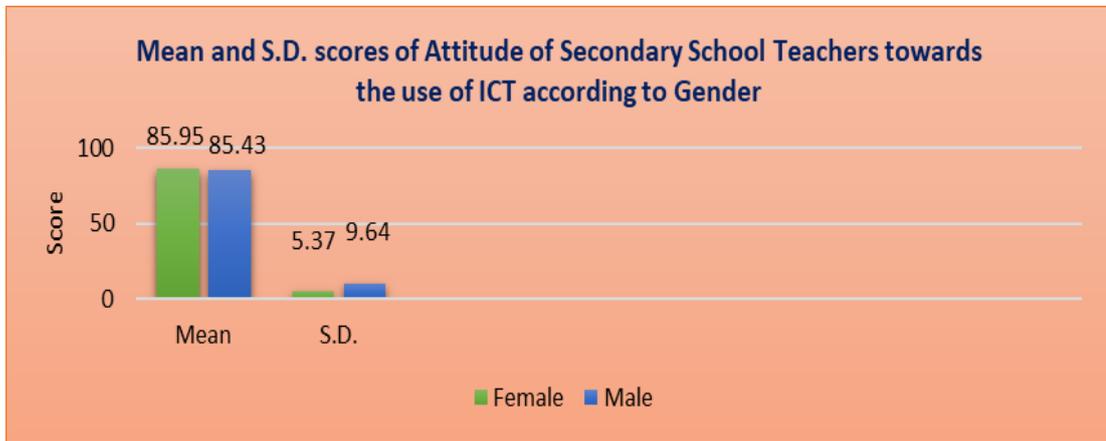


Fig. 2: Mean and Standard Deviation of attitude towards the use of ICT relation to Gender

From, **Fig. 2** it is observed that mean score of attitude towards the use of ICT of female secondary school teacher is (85.95) slightly higher than the mean score of attitude towards the use of ICT of male secondary teacher (85.43).

From, **Table 1**, it reveals that P-value=0.75 ($p > 0.05$) for the attitude toward the use of ICT between female and male secondary school teachers is higher than 0.05. It means that there is no significance difference between the attitude towards the use of ICT of male and female secondary school teachers. Thus, **H₀₁** is accepted.

Table 2: Descriptive statistics and t-test of secondary school teachers' Attitude towards the use of ICT with respect to locale:

Variables	N	Mean	S.D.	t-value calc.	'P' value	Remarks	Hypothesis
Rural	46	85.09	8.25	1.98	0.54	't' test not significant at 0.05significance level.	H₀₂ accepted
Urban	54	86.09	8.23				

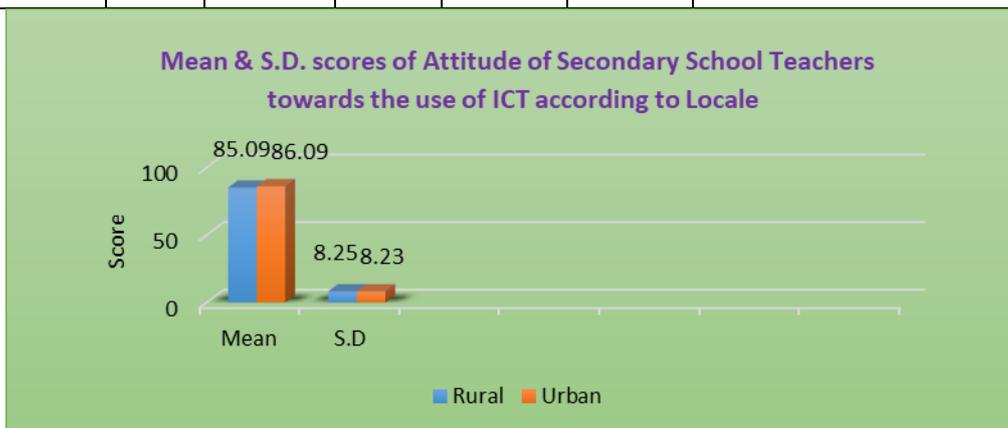


Fig. 3 Mean and standard deviation of Attitude toward the use of ICT in relation to locale

From, **Fig. 3** we observed that the mean score of attitude towards the use of ICT of rural secondary school teachers (85.09) is less than the mean score of attitude towards the use of ICT of urban school teachers (86.09). It may therefore be

concluded that, the attitude of urban and rural teachers towards the use of ICT remains almost identical.

Table 2 reveals that $p\text{-value}=0.54$ ($p>0.05$) of attitude towards the use of ICT between rural and urban secondary school teachers' which is more than 0.05. It means that there is no significance difference in attitude towards the use of ICT between rural and urban secondary school teachers. Thus, **H₀2** is accepted.

Table 3: Descriptive statistics and t-test of secondary school teachers' Attitude towards the use of ICT with respect to types of school:

Variable	N	Mean (M)	S.D.	t-value Calc.	'P' value	Remarks	Hypothesis
Govt.-Aided	69	84.97	9.04	1.98	0.233	't' test not significant at 0.05significance level.	H₀3 accepted
Private	31	87.09	5.86				

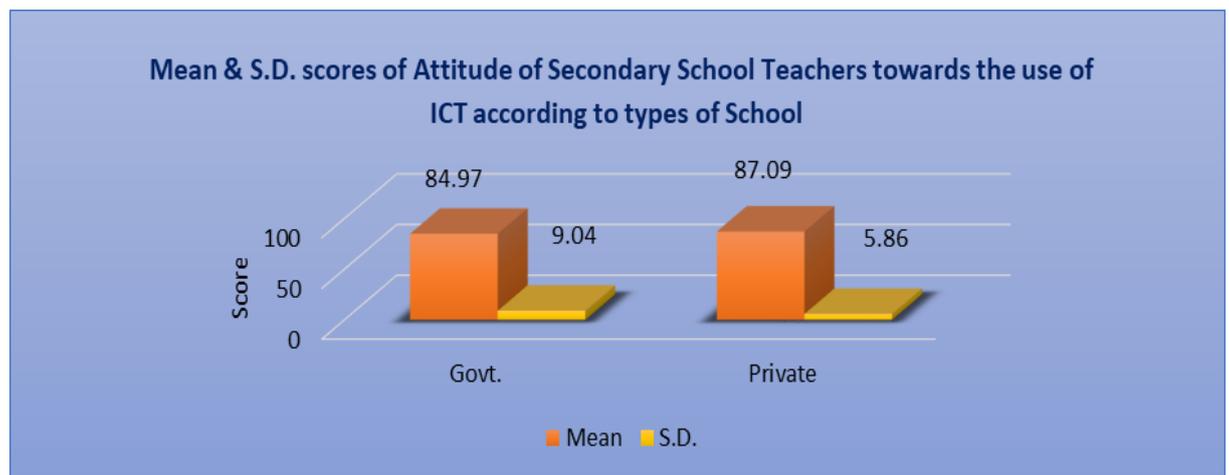


Fig. 4 Mean and Standard Deviation of Attitude toward the use of ICT in relation to types of school:

From, **Fig. 4** we observed that the mean score of attitude towards the use of ICT of rural secondary school teachers (85.09) is less than the mean score of attitude towards the use of ICT of urban school teachers (86.09). It may therefore be concluded that, the attitude of urban and rural teachers towards the use of ICT remains almost identical.

From, **Table 3** reveals that $p\text{-value}=0.233$ ($p>0.05$) of attitude towards the use of ICT between govt. and private secondary school teachers' which is more than 0.05. It means that there is no significance difference in attitude towards the use of ICT between govt. and private school teachers. Thus, **H₀3** is accepted.

Table 4: Descriptive statistics and ANOVA single factor of secondary school teachers' Attitude towards the use of ICT among different Age groups:

Age group (variable)	Mean (M)	S.D.	Degrees of Freedom	'P' value	Remarks	Hypothesis
20-30 Years	87.25	6.00	99	0.34	'P' value not significant at 0.05significance level	H₀₄ accepted
31-40 Years	84.28	9.35				
41-50 Years	84.36	10.56				
51-60 Years	87.63	4.81				

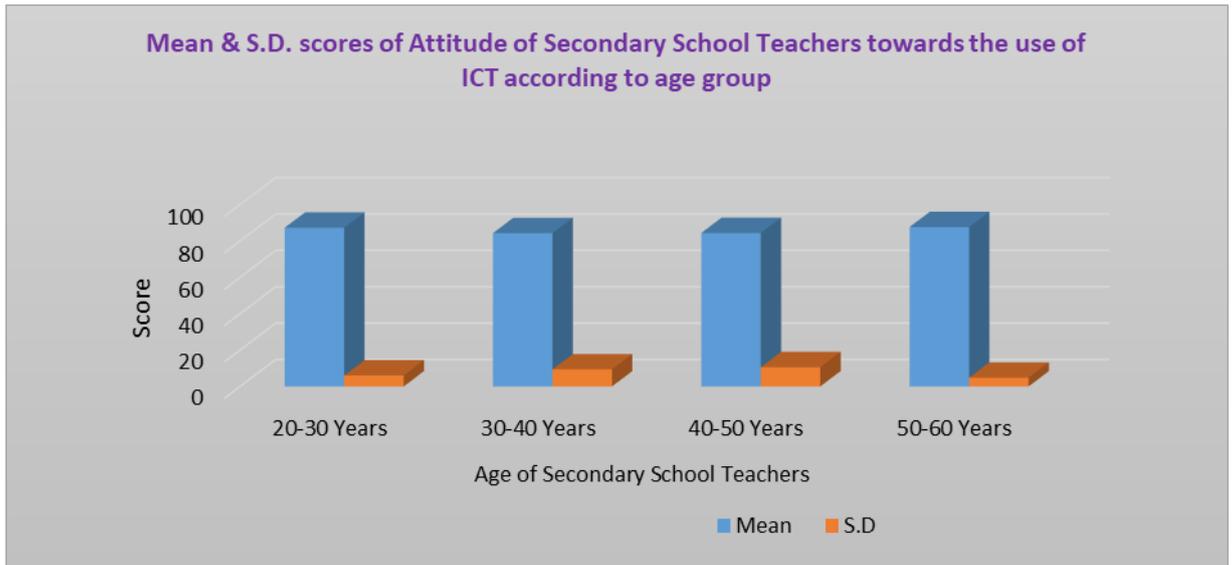


Fig. 5 Mean and standard deviation of teachers' attitude towards the use of ICT in relation to different age groups:

From, **Fig. 5** we observed that the mean score of attitude towards the use of ICT of 51-60 years age group teacher (87.63) is highest and the mean score of attitude towards the use of ICT of 31-40 years (84.28) is lowest among the four age groups of secondary school teachers. It may therefore be concluded that 51-60 years age group of secondary school teachers have more positive attitude towards the use of ICT in comparison to 31-40 years age group of school teachers.

Table 4 reveals that p-value=0.34 ($p > 0.05$) of teachers' attitude toward the use of ICT among different age groups (20-30 years, 31-40 years, 41-50 years and 51-60 years) of secondary school teachers which is more than 0.05. It means that there is no significance difference of teachers' attitude toward the use of ICT among different age groups of secondary school teachers. Thus, **H₀₄** is accepted.

Table 5: Descriptive statistics and ANOVA single factor of secondary school teachers' attitude towards the use of ICT among different qualification types:

Qualification Type (Variable)	Mean (M)	S.D.	df	P value	Remarks	Hypothesis
Graduate	86.60	9.15	99	0.27	't' test not significant at 0.05significance level.	H₀₅ is accepted
Graduation+ B.Ed.	85.71	5.55				
Post Graduate	87.87	7.27				
Post Graduate+ B.Ed.	84.28	8.93				
Post Graduate+ B.Ed. +Ph.D./M.Phil.	91.40	10.45				

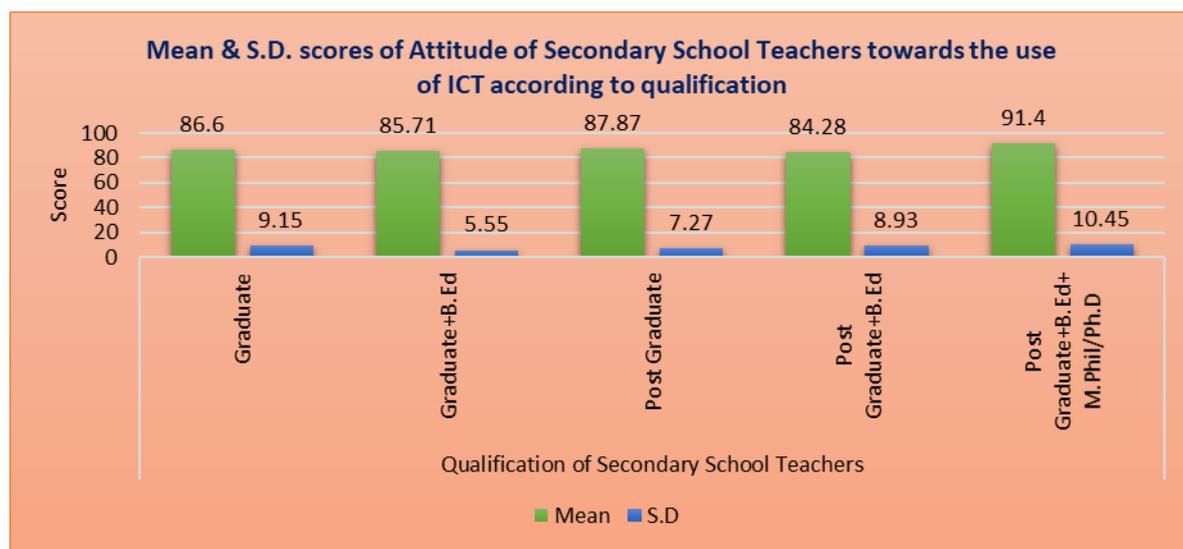


Fig. 6 Mean and standard deviation of teachers' of attitude towards the use of ICT with respect to different qualification types.

From, **Fig. 6** we observed that Post Graduate+ B.Ed. +Ph.D./M.Phil. Qualification group of teachers' attitude toward the use of ICT mean score is highest (91.40) and the attitude toward the use of ICT mean score of Post Graduate+ B.Ed. qualification group teachers is lowest (84.28) among the five qualification types of secondary school teachers. It may therefore be concluded that Post Graduate+ B.Ed. +Ph.D./M.Phil. Qualification of secondary school teachers has more attitudes toward the use of ICT in comparison to Graduate + B.Ed. qualification of school teachers.

Table 5 reveals that p-value=0.27 ($p > 0.05$) of attitude towards the use of ICT among different qualification types (Graduate, Graduation+ B.Ed., Post Graduate, Post Graduate+ B.Ed. and Post Graduate+ B.Ed. +Ph.D./M.Phil.) of secondary school teachers which is more than 0.05. Thus, **H₀₅** is accepted.

4. FINDINGS & DISCUSSIONS:

From the data analysis we saw that most of the teachers had a positive attitude towards the use of ICT in teaching. Attitude of male and female teacher's remains to be almost same and no gender different exists in the attitude of teachers towards the use of ICT i.e. Gender has no influence on the attitude of secondary school teachers towards the use of ICT in teaching.

Attitude of rural and urban teachers remains to be almost same and no locale difference exists in the attitude of teachers towards the use of ICT i.e. it can be assumed that locality fails to bring difference in the attitude of teachers towards the use of ICT.

Types of school (Government / Aided and private) -wise comparison of the attitude of teachers revealed that no significant difference exists between the means of the two groups of teachers. The increased ICT awareness among teachers, their willingness to keep up-to-date of new development and the high competition that conquers among government / aided and private schools might be the possible reasons for the similarity in the attitude of teachers towards ICT. We can say from the above result that attitude of private school teachers is little bit higher than that of government school teachers.

From our present study we can say that there is no significant difference in the attitude of teachers classified on the basis of age group towards the use of ICT. The attitude of teachers belonging to the four categories remains more or less identical. The analysis makes it clear that age group of teachers has no influence on the attitude of teachers towards the use of ICT.

There is no significant difference in the attitude of teachers classified on the basis of qualification towards the use of ICT. The attitude of teachers belonging to the five categories remains more or less identical. The analysis makes it clear that teachers' qualification has no influence on the attitude of teachers towards the use of ICT.

Finally, we can concluded that majority of the secondary school teachers had a positive attitude towards the use of ICT. Hence, teachers should be made more aware of the potential benefits of ICT integration. They should be encouraged to use ICT in classrooms and be provided with more opportunity to enhance their ICT skills.

5. CONCLUSIONS:

So, we can conclude that the attitude towards the use of ICT only depends on the human nature whether he or she shows positivity towards its uses and not depend on the persons' gender, experience, qualification, age or the person belongs from rural or urban area. Mainly adaptation of human being is the main factor of ICT uses.

6. RECOMMENDATIONS:

From our study, it manifested that major portion of the secondary school teachers in Howrah; Kolkata district had a positive attitude towards the use of ICT in their teaching skill. Teachers' attitude can also be enhancing by proper awareness of dynamic convenience of ICT integration. Hence, there should be taken more awareness programs for the teachers of ICT integration. It should encourage teachers to use ICT in classrooms and be provided with more opportunity to enhance their ICT skills.

Crucial factors like self-interest of teachers, attitude of school authority and sufficient training influenced teachers considerably in using ICT. So by taking proper awareness programs for the teachers and authority, ICT can be integrate successfully.

Though most of the schools in Howrah, Kolkata had minimum ICT facilities, but lots of teachers and authority still did not know how to use the available facilities effectively. So it is very important to take proper training and supportive programme to impacting teachers to use ICT in their teaching skill. And finally we

can suggest that throughout the country, there should be a definite and identical Govt. ICT policy for the secondary school.

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