

TEACHER EDUCATORS' ATTITUDES TOWARDS ICT IN RELATION TO THEIR TECHNOLOGICAL COMPETENCY

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ABSTRACT

Positive attitude of teacher educators is important for improving the quality of ICT teaching in teacher training institutions and technological competency of teacher educators is an important condition for building this attitude. This present study aims to analyse the Attitudes towards ICT of teacher educators among teacher training institutions situated in the North 24 Parganas district according to their technological competency. Descriptive survey research design has been administered for this present study. The present study comprises of 200 teacher educators of few selected teacher training institutions in the North 24 Parganas district of West Bengal. Two self-made questionnaire on Attitudes towards ICT and technological competency rating scale by the researcher were used as tools for administering the present study. The study was done by random sampling on teacher educators of several teacher training institutions of North 24 Parganas district of West Bengal. Seven null hypotheses were tested at the 0.05 level of significance using mean, standard deviation, t-test, Anova and correlation analysis as statistical techniques. The finding shows that there is a significant positive relationship between Attitudes towards ICT and technological competency of teacher educators in different teacher training institutions. It was also concluded that teacher educators' technological competency is not the only determinant of their Attitudes towards ICT.

Keywords: Teacher Educator, Attitudes towards ICT, Technological Competency.

Introduction:

In this 21st century era of globalization, the use of information and communication technology is ubiquitous. In a developing country like India, information technology has led to the development of education. It is undeniable that the whole world today is useless without information technology. The use of information technology in the field of education, from research to the teaching of classroom learning is universally accepted today. The use of information and communication technology in daily life is increasing day by day. The development of the education system in modern civilization depends largely on the proper application of information and communication technology. The development of education in the field of information and communication technology is currently working as an integral part of human life.

The attitude of the teacher educators towards class learning is a very important condition for enhancing the academic performance of the students. And the use of ICT in current education serves as a much needed tool to enhance the academic performance of the students. The use of information and communication technology for the positive attitude of the teacher educator towards ICT teaching in the classroom learning has become interesting and beneficial for the students. The use of information and communication technology in the case of advanced class learning is undeniable which indicates the appropriate attitude of the teacher educators towards maximum use of information and communication technology.

Technology has added a new dimension to the education system. So nowadays, anyone can learn from any place at any time. A student sitting in India is able to take a course from a university in faraway America if he wants. In real case, the teacher-student can receive lessons through email, chatting, and video conferencing without seeing each other face to face. This virtual learning environment (VLE) has revolutionized the field of education. Appropriate use of technology in the proper application of education in the cooperation of teacher educators is extremely important. In this case, the current mental state of teacher educators needs a radical change. Teacher educators will become more self-reliant in the use of

technology in teaching in the classroom as they become more novices in increasing their technical skills. In this age of globalization, it has become imperative for teacher educators to enhance their technical skills in implementing future education plans.

The purpose of administering this research is to find out the relationship between technological competency of teacher educators with their attitudes towards ICT.

Objectives of the study:

Objectives of this study are as follows:

- O1:** To find out whether there is any significant difference of attitudes towards ICT of teacher educators according to their gender (Male and Female).
- O2:** To find out whether there is any significant difference of attitudes towards ICT of teacher educators according to their mastery type (Novice and Veteran).
- O3:** To find out whether there is any significant difference of attitudes towards ICT of teacher educators according to their subject group (Arts, Science and Mathematics).
- O4:** To find out whether there is any significant difference of technological competency of teacher educators according to their gender (Male and Female).
- O5:** To find out whether there is any significant difference of technological competency of teacher educators according to their mastery type (Novice and Veteran).
- O6:** To find out whether there is any significant difference of technological competency of teacher educators according to their subject group (Arts, Science and Mathematics).
- O7:** To find out whether there is any significant relationship between technological competency and attitudes towards ICT of teacher educators.

Hypotheses of the study:

Objective wise null hypotheses are as follows:

- H01:** There is no significant difference in the attitudes towards ICT between male and female teacher educators.
- H02:** There is no significant difference in the attitudes towards ICT between Novice and Veteran teacher educators.
- H03:** There is no significant difference in the attitudes towards ICT among Arts, Science and Mathematics teacher educators.
- H04:** There is no significant difference in the technological competency between male and female teacher educators.
- H05:** There is no significant difference in the technological competency between Novice and Veteran teacher educators.
- H06:** There is no significant difference in the technological competency among Arts, Science and Mathematics teacher educators.
- H07:** There is no significant relationship between technological competency and attitudes towards ICT of teacher educators.

Significance of the study:

- Attitudes towards ICT of teacher educators at different teachers training institution can be known.
- Technological competency of teacher educators at different teachers training institution can be understood.
- The result of this study will be useful for different teachers training institution in order to improve the technological competency of teacher educators to retain attitudes towards ICT.
- The study will also be helpful because consideration of gender wise (Male and Female), mastery type wise (Novice and Veteran) and subject group wise (Arts, Science and Mathematics) differences of teacher educators' technological competency and attitudes towards ICT was thoroughly analysed.

Delimitation of the study:

The present study was delimited to the following:

- The study was delimited to two major variables - attitudes towards ICT, technological competency and three categorical variables- gender (Male and Female), mastery type (Novice and Veteran) and subject group (Arts, Science and Mathematics) only.

- The study was delimited to the teacher educators of different teachers training institution of North 24 Parganas only.
- The Sample was also delimited to a fixed sample size of 200 (two hundred) only.

Methodology of the study:

Population & Sample:

The population for this research was teacher educators of different teachers training institution of West Bengal. In this study, 200 samples were collected from different teachers training institution of North 24 Parganas of West Bengal.

Sampling Procedure:

In order to administer this study, random sampling technique was being used to collect the data.

Tools:

Two self-made questionnaire on attitudes towards ICT and technological competency of teacher educators were used as tools for administering the present study.

Variables:

Major Variables: Attitudes towards ICT, technological competency.

Categorical Variables: Gender (Male and Female), Mastery type (Novice and Veteran) and Subject group (Arts, Science and Mathematics).

Analysis & interpretation:

The opinions from the respondents are collected by the researcher through the descriptive survey method and the statistical analysis of null hypotheses at 0.05 level of significance is expressed in the following tables.

Testing of Null Hypothesis H₀₁:

H₀₁: There is no significant difference in the attitudes towards ICT between male and female teacher educators.

Table 1: Descriptive statistics and t-test of teacher educators' attitudes towards ICT according to their gender

Categorical variables (Gender)	N	Mean	S.D.	df	t _{Stat}	'P' value	t _{Critical}	Significance of Hypothesis
Male	125	56.72	7.60	198	-0.329	0.743	1.972	Not significant at 0.05 level of significance
Female	75	57.07	6.53					

Interpretation:

Table 1 reveals that P value =0.743 ($P > 0.05$) is not significant at 0.05 level and **H₀₁** is **not rejected**. It means that there is no significant difference between male and female teacher educators' attitudes towards ICT. Therefore, male and female teacher educators' are equal in terms of attitudes towards ICT.

Testing of Null Hypothesis H₀₂:

H₀₂: There is no significant difference in the attitudes towards ICT between Novice and Veteran teacher educators.

Table 2: Descriptive statistics and t-test of teacher educators' attitudes towards ICT according to their mastery type

Categorical variables (Mastery type)	N	Mean	S.D.	df	t _{Stat}	'P' value	t _{Critical}	Significance of Hypothesis
Novice	118	57.97	7.22	198	2.668	0.0082	1.972	Significant at 0.05 level of significance
Veteran	82	55.24	6.92					

Interpretation:

Table 2 reveals that P value =0.0082 ($P < 0.05$) is significant at 0.05 level and **H₀₂** is **rejected**. It means that there is significant difference between Novice and Veteran teacher educators. Therefore, Novice and Veteran teacher educators are not equal in terms of attitudes towards ICT.

Testing of Null Hypothesis H₀₃:

H₀₃: There is no significant difference in the attitudes towards ICT among Arts, Science and Mathematics teacher educators.

Table 3: Anova of teacher educators' attitudes towards ICT according to their subject group

	SS	df	MS	F	P-value	F _{Crit}	Significance of Hypothesis
Between Groups	337.1914	2	168.5957	3.323892	0.038043	3.041753	Significant at 0.05 level of significance
Within Groups	9992.309	197	50.72238				
Total	10329.5	199					

Interpretation: Table 3 reveals that in case of ANOVA: Single Factor P value =0.038043 ($P < 0.05$) is significant at 0.05 level and **H₀₃** is **rejected**. It means that there is significant difference among Arts, Science and Mathematics teacher educators' attitudes towards ICT. Therefore, Arts, Science and Mathematics teacher educators' are not equal in terms of attitudes towards ICT.

Testing of Null Hypothesis H₀₄:

H₀₄: There is no significant difference in the technological competency between male and female teacher educators.

Table 4: Descriptive statistics and t-test of teacher educators' technological competency according to their gender

Categorical variables (Gender)	N	Mean	S.D.	df	t _{Stat}	'P' value	t _{Critical}	Significance of Hypothesis
Male	125	75.256	20.13	198	-1.54	0.125	1.972	Not significant at 0.05 level of significance
Female	75	79.787	20.15					

Interpretation:

Table 4 reveals that P value =0.125 ($P > 0.05$) is not significant at 0.05 level and **H₀₄** is **not rejected**. It means that there is no significant difference in the technological competency between male and female teacher educators. Therefore, male and female teacher educators are equal in terms of technological competency.

Testing of Null Hypothesis H₀₅:

H₀₅: There is no significant difference in the technological competency between Novice and Veteran teacher educators.

Table 5: Descriptive statistics and t-test of teacher educators' technological competency according to their mastery type

Categorical variables (Mastery type)	N	Mean	S.D.	df	t _{Stat}	'P' value	t _{Critical}	Significance of Hypothesis
Novice	118	77.02	21.43	198	0.059	0.953	1.972	Not significant at 0.05 level of significance
Veteran	82	76.85	18.43					

Interpretation: Table 5 reveals that P value =0.953 ($P > 0.05$) is not significant at 0.05 level and **H₀₅ is not rejected**. It means that there is no significant difference in the technological competency between Novice and Veteran teacher educators. Therefore, Novice and Veteran teacher educators are equal in terms of technological competency.

Testing of Null Hypothesis H₀₆:

H₀₆: There is no significant difference in the technological competency among Arts, Science and Mathematics teacher educators.

Table 6: Anova of teacher educators' technological competency according to their subject group

	SS	df	MS	F	P-value	F _{Crit}	Significance of Hypothesis
Between Groups	480.7275	2	240.3638	0.585964	0.557536	3.041753	Not significant at 0.05 level of significance
Within Groups	80809.87	197	410.2024				
Total	10329.5	199					

Interpretation: Table 6 reveals that in case of ANOVA: Single Factor P value =0.557536 ($P > 0.05$) is not significant at 0.05 level and **H₀₆ is not rejected**. It means that there is no significant difference among Arts, Science and Mathematics teacher educators' technological competency. Therefore, Arts, Science and Mathematics teacher educators' are equal in terms of technological competency.

Testing of Null Hypothesis H₀₇:

H₀₇: There is no significant relationship between technological competency and attitudes towards ICT of teacher educators.

Table-7: Correlation between technological competency and attitudes towards ICT of teacher educators

Variables	Mean	S.D.	N	df	r _{cal}	r _{crit}	Remarks	Significance of Hypothesis
Attitudes towards ICT	56.85	7.20	200	198	0.2974	0.14428	r _{cal} > r _{crit}	Significant
Technological competency	76.955	20.21	200					

Interpretation: Table-7 indicates that the value of correlation of technological competency and attitudes towards ICT of teacher educators is 0.2974 which is greater than the critical value 0.14428 (at 0.05 level of significance). So, **r** is significant at 0.05 level of significance. Therefore, it is concluded that technological competency and attitudes towards ICT of teacher educators are positively correlated. It means that increasing in technological competency implies increasing in attitudes towards ICT of teacher educators.

Findings and discussion:

From the above results, the researcher concludes that there is no comparative difference between the attitudes towards ICT of male and female teacher educators but there is comparative difference between Novice and Veteran mastery level. The researchers finally discovered composite effect among their subject groups Arts, Science and Mathematics.

Then the researcher found no comparative difference between the male and female teacher educators in their technological competency. Also, there was no difference in the technological competency of Novice and Veteran mastery level teacher educators. Finally, the researcher found no effect in technological competency of teacher educators' among Arts, Science and Mathematics subject groups.

Lastly, the researcher found a significant relationship between technological competency and attitudes towards ICT of teacher educators

Conclusion:

Therefore, the researcher concluded that the attitudes towards ICT does not affect by their gender of teacher educators i.e. male and female teacher educators have the same attitudes towards ICT in the different teacher training institutions. However, novice and veteran teacher educators are not equal in terms of attitudes towards ICT. Further, arts, science and mathematics teacher educators are not equal in terms of the attitudes towards ICT.

On the other hand it can be concluded that the teacher educators' technological competency does not affect by their gender i.e. male and female teacher educators have the same technological competency in the different teacher training institutions. Also, novice and veteran teacher educators are equal in terms of technological competency. Further, the technological competency is equal among arts, science and mathematics teacher educators.

Finally, the researcher concluded that the two major variables i.e. attitudes towards ICT and technological competency of teacher educators in the different teacher training institutions are positively correlated.

Suggestions for Further Study:

Further recommendations are given below:

- The same study can be done by selecting teacher educators from other general degree colleges as well as schools of the state also.
- By increasing the teacher educators sample size, the same study can be done in the same state also.
- The same study can be done by selecting teacher educators of different teacher training institutions from other districts also.
- Comparative effects of few more categorical variables upon teacher educators' attitudes towards ICT and technological competency yet to be discussed.

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