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A critical survey on the involvement of ICT in the teacher's training institutes of West Bengal

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ABSTRACT

"A good teacher is like a candle - It consumes itself to light the way for others"

Teachers occupy a prominent place in any society and in any educational system. This is particularly true in the case of India. From ancient time teachers have been enjoying special status and position in the Indian society as well as in the field of education. In almost all societies and cultures teachers have been regarded as a person who possesses certain attributes, competencies, and traits to succeed both in the classroom and in society as a whole. Quality of teachers is the measure of the strength of an educational system and quality of teacher depends on the quality of the teacher education. Therefore a sound programme of teacher education is necessary for the improvement of the education system in the country. With the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. In this respect, teacher education institutes play a vital role in providing quality education to the teacher trainees using ICT. But it is very regrettable to say that in this Modern Era all training colleges of West Bengal are not been able to accept ICT in its full form. This research paper will focus on the critical survey on the involvement of ICT in teachers' training institutes of West Bengal. This is a Descriptive study where Survey method will be used. To conduct this research the researcher will use the questionnaire as a research tool. The population of this research work is the total teachers training institutes under WBUTTEPA but to have a control over the data and to time factor the researcher delimited it and had taken only 6 colleges. By using Stratified random sampling the researcher had taken the sample from 6 training institutes of West Bengal and from each college 10 teachers had been taken. A total number of sample 60. To analyze the qualitative data in a quantitative way the researcher will use Statistical Analysis using t-test. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings and therefore ICT can improve teaching by enhancing an already practiced knowledge and introducing a new way of teaching and learning.

Keywords— ICT (Information and Communication Technology), Blended learning, Face to face learning, E-learning

1. INTRODUCTION

The twenty-first century no doubt belonging to Information and Communication Technology. E-learning and such related vocabularies are the common features of the present education system. Inevitably, all levels of education worldwide are influenced by such revolutionary scientific and technological inventions, so also teacher - education.

There is a paradigm shift in teaching-learning. Because ICT is instrumental in shifting emphasis to learning environments from teacher centered to learner-centered. Where teachers move from being the key source information and transmitter of knowledge to students so, the role of students changes from passivity to activity.

We are living in a constantly evolving digital world. ICT has an impact on nearly every aspect of our lives - from working to socializing, learning to play. The digital age has transformed the way young people communicate, network, seek help, access information and learn. We must recognize that young people are now an online population and access is through a variety of means such as computers, TV, and mobile phones. As technology becomes more and more embedded in our culture, we must provide our learners with relevant and contemporary experiences that allow them to successfully engage with technology and prepare them for life after school.

Though ICT become part of our life in teaching - learning process it is not become fully integrated into the teachers' training institutes in West Bengal. Somewhere there is a gap between use technology and teaching-learning process in training institutes.

But if we think over this matter then we can find out that the teaching-learning can become more psychological and scientific by using ICT in the classroom.

The ICT being latest, it can be used both at school and higher education levels in the following areas:

- (i) Teaching
- (ii) Diagnostic Testing
- (iii) Remedial Teaching
- (iv) Evaluation
- (v) Development of Language Laboratory
- (vi) Instructional Material Development

1.2 Background of the study

In India, using computers related to education first started in 1984. The project was called Computer Literacy and Studies in School (CLASS). As part of the project, computers were introduced to 250 higher secondary schools. An evaluation study of the CLASS project finds that students had a positive attitude towards computer learning regardless of the type of school (Agrawal, 1996, 2005). To facilitate the computer-based education, the first degree in computer education was offered in 1989 in Indore, India (Goel, 2000).

The UNESCO (2002) document "Information and Communication Technologies in Teacher Education. A Planning Guide" states the importance of ICT in teacher education as follows. "With the emerging new technologies, the teaching profession is evolving from an emphasis on teacher-centered, lecture-based instruction to student-centered, interactive learning environments. Designing and implementing successful ICT-enabled teacher education programmes is the key to fundamental, wide-ranging educational reforms. Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change....".

The NCF (2005) perceives the use of ICT as serving "to build a positive ethos for curricular reforms if they are used as sites of discussion and debates in which teachers, training personnel, and community members can participate. Teachers require the first-hand experience of making programmes about them in order to develop an interest in the new technology". The NCTE has made ICT literacy a compulsory component of the secondary pre-service teacher education programme. This includes ICT literacy and the experience of preparing lesson plans in multimedia, accessing off-line and online resources, document creation and communication using e-mail, etc. The NCTE has also prepared self-learning CDs for teacher educators with the intent of enabling them to use the rich digital resources available on teacher education. Workshops have been organized by IGNOU on the effective use of ICT for directors and faculty of DIETs and SCERTs. NCERT has made use of teleconferencing for continuing professional development of teachers. ICT is being used to provide training to pre-service as well as in-service teachers. Teleconferencing, interactive audio-video links, and computer CDs are some of the ICT tools that have been used to build competencies in using ICT and teaching through ICT, and also for updation of knowledge and orientation to innovations.

1.3. The problem and its social relevance

In this modern era, we cannot think a day without using technology in our daily life the best example of this is now-days we cannot think to spend a single day without using our android mobile. Then what is the problem of using technology in the classroom? Teacher education has also been influenced by the ICT. Now ICT has become an integral part of our lives. But the main problem is that there is the lack of implementation in teachers' training field. Over the past twenty-five years, the use of ICT has fundamentally changed the practices and procedures in the field of banking, tourism, share market, engineering, business, and post office. ICT is one of the major contemporary factors shaping the global economy and producing rapid changes in society. ICT is a powerful tool for problem-solving, conceptual development and critical thinking that helps to make the learning process much easier for the teacher trainees. Owing to knowledge explosion and tremendously fast-changing ICT, the teachers sometimes find it rather difficult to cope with the new intellectual challenges being thrown up by the changed global and local context. Therefore, updating the knowledge of ICT is the need of the hour. Dr. A.P.J. Abdul Kalam once said, "If a country is to be corruption free and become a nation of beautiful minds, I strongly feel there are three key societal members who can make a difference. They are the Father, the Mother, and the Teacher."

As a teacher plays a very prominent role in molding up tomorrow's citizen, the teachers should possess training in using the most modern technologies in the field of education. So the use of ICT in teachers training field is very important and its effect is far fetching. Therefore lack of ICT involvement in training field is a serious and global problem and it has a social educational cultural relevance. The introduction of ICT in education will encourage and motivate the students to explore new areas of advancement with reference to its latest developments in various subjects. Hence in this study investigator attempted to find out the level of involvement of teacher trainees and compared same with the working teacher in the use of ICT.

1.4 Review of literature

The Role of ICT in Teacher Education. The Development of Web Pages by Project Method. By Guilhermina Lobato Miranda & Ana Isabel Rolo European Conference on Educational Research, University of Lisbon, 11-14 September 2002 This paper is a description of an in-service teacher training experience that used ICT to develop a project that involved teachers (nursery and primary) and also children, parents and other members of the educational community. Its aim was to build an Internet site that would give information about school life. It's an open web space where teachers, parents, and students can express and share their ideas and activities.

ICT in teacher education: Examining needs, expectations and attitudes by Zuochen Zhang is an assistant professor, Faculty of Education, University of Windsor, Canada. This study could be employed as very useful for the design of an ICT curriculum of Teacher Education programs.

Use of ICT in Education, Faculty and Staff Development, Manjunath focused that ICT is useful not only for students but it can also enhance the professional skills of staff and faculty in an educational institute.

ICT in Pre and in-Service Teacher Education by Shri Basavaraj G. Dharwad. This paper acknowledges that today it is essential to combine face to face classroom teaching with innovative technologies such as satellite, T.V., radio, etc. as well as use distance learning, communication technology for effective learning.

The attitude of Degree College Teachers towards ICT Awareness by Dr. Jyoti S. Pattanshetti and Muragesh Y. Pattanshetti. An interesting finding of this study is that teachers need to develop the competency to set a trustful atmosphere for communication during the teaching-learning process.

The attitude of Teacher Trainees towards ICT Teaching by Dr. Savita D. The main findings of this study are male-female both teachers are interested in the use of ITC but they have a lack of technical skills.

1.5 Statement of the problem

Based on the above review of the related literature the problem has been stated as “A Critical Survey on the Involvement of ICT in the Teachers’ Training Institute of Modern Era in West Bengal.”

1.6 Objectives of the study

This research paper will be based on the following objectives:

- To make the teacher aware of the use of ICT.
- To find out the factors that create a problem in the implementation of ICT in teacher education institutes.
- To make the possible involvement of ICT in teachers training institute to its highest level.
- To find out the difference between the concept of a male teacher and female teacher in using ICT.
- To find out the difference between the government and self-finance teachers’ training institute in implementing the use of ICT in the classroom.
- To improve the teaching skills through the use of ICT.
- To make the joyful experience of learning through computer-aided lessons using ICT.
- To save time by using ICT -more learning can take place in less time.
- To make Learning interesting, Effective Easy and successful with the help of using ICT.
- To make the school be community learning and resource center through ICT based education.
- To promote continuous and comprehensive evaluation in the education system with the help of ICT.
- To improve professional competency of teachers through ICT.
- To acquaint the student teacher with the proper pronunciation and intonation of different languages through the proper use of ICT.
- For integrating ICT in school education it is necessary to strengthen ICT in teacher education.

1.7 Hypothesis

H₀₁ –There is no significant difference between Urban Training Colleges and Rural Training Colleges towards the use of ICT in W.B.

H₀₂ –There is no significant difference between male-female teachers of Urban Teachers’ Training Institute towards the use of ICT in W.B.

H₀₃ - There is no significant difference between male-female teachers of Rural Teachers’ Training Institute towards the use of ICT in W.B.

1.8 Delimitation and limitation

There are almost 170 Teachers’ Training Institute in under West Bengal University of Teachers’ Training, Education Planning and Administration. With the help of delimitation, the research chooses 6 Teachers’ Training Institute from different district of West Bengal. This will help the researcher only to make a control over the data, time constraints and the paucity of funds.

Several limitations of this study should be noted:

- (i) It is possible that the concept and attitude of teachers towards the use of ICT varies so their responses will also be different in that case the researcher has studied on the attitude of the teachers in using ICT.
- (ii) Another limitation is if the readymade questionnaire is not available in that case the researcher has to make a questionnaire. So the self –reported nature of the questionnaire may leave some biases.
- (iii) Asking participants questions they may not wish to answer could result in evasive, distorted or false responses indicating the need to develop procedures to evaluate the truthfulness of respondents’ answers.

1.9 The significance of the study

New technologies have provided new possibilities for the teaching profession. However, teacher educators and teacher trainees have to learn how to use these new technologies in the classroom situations. Most of the teacher education institutions are facing difficulties like:

- Shortage of ICT trained qualified teacher educators.
- Weak curricula, lack of ICT equipment etc.

Perhaps one of the greatest challenges facing teacher education today concerns the preparation of good quality teachers capable of using ICT effectively. Unless and until they are trained we cannot expect any qualitative changes in teaching. In this context, the

investigator will develop an ICT training module and studied its effectiveness in the teacher education system. Besides ICT can also enhance E-learning, Self- pacing learning, Face to face learning, Blended learning. Therefore the study on the involvement of ICT in the teachers' training institute of the modern era in W.B. is very significant.

1.10 Operational Definition

ICT: ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.” These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.

E-Learning or Electronic learning is a general term used to refer to computer-enhanced learning. It is commonly associated with the field of advanced learning technology (ALT), which deals with both the technologies and associated methodologies in learning using networked and/ or multimedia technologies. It is also known as online learning.

Face to face Learning refers to learning that occurs in a traditional classroom setting where a faculty member delivers instruction to a group of learners. This could include lectures, workshops, presentation, tutoring, conference and much more.

Blended Learning is the combination of multiple approaches to learning. It is usually used to define a situation where different delivery methods are combined together to deliver a particular course. These methods may include a mixture of face-to-face learning, self-paced learning, and online classrooms.

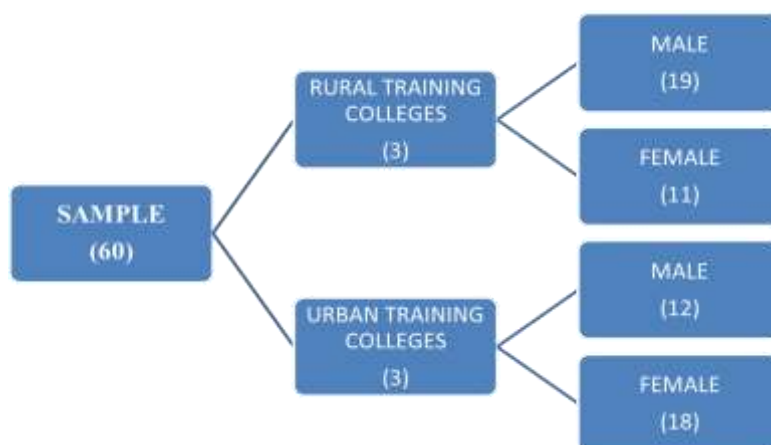
Self-paced Learning provides the flexibility to learn according to the availability of learners' own time and pace, it occurs in a variety of ways such as: reading specific chapters from textbook, studying course material presented through web-based or CD based course, attending pre-recorded classes or sessions, reading articles referred by faculty member, working on assignments & projects, and searching & browsing the internet.

2. METHOD OF THE STUDY

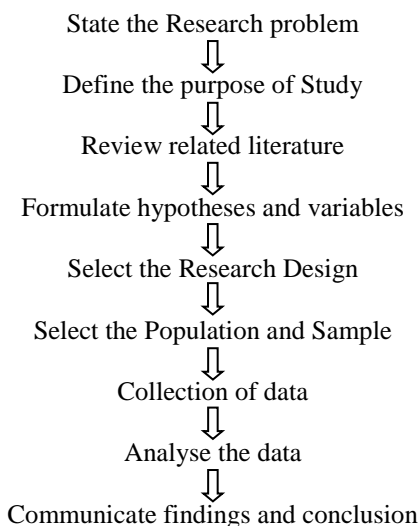
2.1 Research Design: This is a descriptive study in which survey method is employed to study the effect of computer education course of B.Ed. programme on computer Competency of student teachers.

2.2 Subject: All the Teachers' Training Institute under WBUTTEPA is the subject of my study.

2.3 Sampling Design: Stratified Random sampling will be used to collect a sample from 6 Teachers' Training Institute of different districts of West Bengal. A number of sample 60. From 3 different rural Teachers' Training Colleges the researcher collected 30 samples (19 male and 11 female) and from 3 other different Urban Teachers' Training Colleges the researcher collected another 30 samples (12 Male and 18 female)



2.4 Research Process:



2.5 Variables

Independent Variable: Involvement of ICT in Teachers' Training Institute

Depended Variables:

- Concept of ICT
- Awareness of teacher towards the use of ICT
- Available facilities in Training Institute
- Sufficient economic fund
- Support of Management
- Skilled Employee

2.6 Tools

Questionnaire: the researcher has applied questionnaire to the teachers of Rural and Urban teachers' training institute.

Likert scale: to find out the differences in the attitude of the teachers towards ICT.

Interview: the researcher was also taken structured interview of the at least 5 members of the management or authority of the institutes and at least 20 students of each institute.

2.7 Methods of Measurement of Variables:

The researcher was used Statistical Analysis to measure the variables. Here the researcher had used a **t-test** for testing of the difference between the means of two groups of participants.

2.8 Availability of facilities to be required for the Research:

To conduct this research the researcher has to collect details lists of Teachers' Training Institutes from the new University WBUTTEPA. The researcher also has to take permission from the head of Institute for taking the interview and applying the questionnaire to the teachers and students.

2.9 Data Collection and Data Analysis

The data were collected from the subjects of different teacher training institutes. Data analysis (t-test) were carried out with the help of origin 6.1 software.

2.10 Data analysis

This paper focuses on selected variables (Concept of ICT, Awareness of teacher towards the use of ICT, Available facilities in Training Institute, Sufficient economic fund, Support of Management, Skilled Employee) of the different Teachers' Training Institute of West Bengal with respect to Gender and Locality.

H_{01} —There is no significant difference between urban training colleges and rural training colleges towards the use of ICT in W.B.

Table 1: t-Test, results for differences based on Rural and Urban Teachers' Training Colleges

	Rural	Urban
Mean	97.70588235	102.6666667
Variance	20.22058824	9.515151515
Observations	30	30
Hypothesized Mean Difference	0	
df	27	
t Stat	-3.523362817	
P(T<=t) one-tail	0.000769086	
t Critical one-tail	1.703288446	
P(T<=t) two-tail	0.001538173	
t Critical two-tail	2.051830516	

***Significant at 0.05 level**

Interpretation: the mean scores for Urban and Rural teachers training colleges are 97.705 and 102.66 respectively. The $P(T \leq t)$ two-tail value is 0.001(<0.05) and t-value are significant.

Therefore the Null Hypothesis there is no significant difference between Urban Training Colleges and Rural Training Colleges towards the use of ICT in W.B is REJECTED. It means there are significant differences in the attitude and use of ICT in rural and urban teachers training colleges. From our questionnaire we can say there are differences in the Concept of ICT, Awareness of teacher towards the use of ICT, Available facilities in Training Institute, Sufficient economic fund, Support of Management, Skilled Employee. Rural Teachers' Training Colleges are far more advanced, conscious and skilled in using ICT than Rural Teachers' Training Colleges.

H_{02} —There is no significant difference between male-female teachers of urban teacher's training institute towards the use of ICT in W.B.

Table 2: t-Test, results of responses of Male-Female teachers in Urban Teachers' Training Institutes

	Female	Male
Mean	101.625	103.6666667
Variance	6.839285714	8.333333333
Observations	18	12
Pooled Variance	7.171296296	
Hypothesized Mean Difference	0	

df	9
t Stat	-1.126147516
P(T<=t) one-tail	0.144617287
t Critical one-tail	1.833112933
P(T<=t) two-tail	0.289234574
t Critical two-tail	2.262157163

***Significant at 0.05 level**

Interpretation: the mean scores for Male Female teachers of Urban Training colleges are 101.625 and 103.666 respectively. The P(T<=t) two-tail value is 0.289 (>0.05) and t-value is not significant.

Therefore the Null Hypothesis there is no significant difference between urban male-female teachers towards the use of ICT in W.B. is ACCEPTED

It means there are no significant differences in the attitude and use of ICT in Male-Female teachers of urban training colleges. From our questionnaire, we can say the teachers in Urban Teachers' Training Institute irrespective of gender have the Concept of ICT, Awareness towards the use of ICT, Available facilities in Training Institute, Sufficient economic fund, Support of Management, Skilled Employee. Both male and female teachers in Urban Teachers' Training Institute uses ICT in the teaching-learning process and they also have a clear concept about ICT and its benefit in teaching learning process.

H₀₃ - There is no significant difference between male-female teachers of rural teachers' training institute towards the use of ICT in W.B

Table 3: t-Test, results of responses of Male-Female teachers in Rural Teachers' Training Institute

	<i>FEMALE</i>	<i>MALE</i>
Mean	95.57142857	99.5
Variance	12.61904762	34.3
Observations	19	11
Pooled Variance	22.47402597	
Hypothesized Mean Difference	0	
df	11	
t Stat	-1.489522897	
P(T<=t) one-tail	0.082226248	
t Critical one-tail	1.795884819	
P(T<=t) two-tail	0.164452496	
t Critical two-tail	2.20098516	

***Significant at 0.05 level**

Interpretation: the mean scores for Male Female teachers of Rural Training colleges are 95.571 and 99.5 respectively. The P(T<=t) two-tail value is 0.164 (>0.05) and t-value is not significant.

Therefore the Null Hypothesis -there is no significant difference between male-female teachers of rural teachers' teacher's training institute towards the use of ICT in W.B. is ACCEPTED

It means there are no significant differences in the attitude and use of ICT in Male-Female teachers of rural training colleges. From our questionnaire, we can say the teachers in rural Teachers' Training Institute irrespective of gender have poor Concept of ICT, lack of awareness towards the use of ICT, no such available facilities in Training Institutes, insufficient economic fund, indifferences of Management, lack of Skilled Employee. Both male and female teachers in Rural Teachers' Training Institute think that ICT is very useful in the teaching-learning process but they so such facilities in their institutions, in fact, the teachers irrespective of gender also agree with the fact that they don't have sufficient knowledge about using ICT. Though they have an eagerness to use ICT in Teaching Learning Process they didn't get the support of management due to insufficient fund.

3. CONCLUSION

In Conclusion, we can say that the number of Training Colleges is increasing day by day. But there is a question is the quality of Teacher Education simultaneously increasing? It is a serious problem for our society and also in a broad sense for our nation. So owning, or having access to, technology is usually only a first step. Even more important is learning how to use it. This is one of the biggest challenges facing anyone who wishes to use electronic tools because the knowledge is not always easy to acquire. Many people, of course, are highly skilled in computer technology and know how to teach themselves to do almost anything. The paper acknowledges that today it is essential to combine face to face classroom teaching with innovative technologies such as satellite, T.V., radio, etc. as well as use distance learning, communication technology for effective learning. ICT in teacher education has a deep impact in the field of education but it will require a massive effort because "even small thing makes a difference. Even if you cannot change people, you could make people aware of changes". The Teachers' training institutes of rural areas need more modification and awareness to provide quality teacher education to the teacher's trainee.

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