

IMPACT OF ATTITUDE, SELF CONFIDENCE AND COMPETENCY TOWARDS APPLICATION OF ICT BASED INSTRUCTIONAL MATERIALS AMONG TRAINEE TEACHERS IN FOUR YEAR TEACHER EDUCATION PROGRAM

Kabita Roy

Assistant Professor, Department of Education, Jiagand Institute of Education and Training, West Bengal, India

Abstract: The study presents attitude, self confidence and competency towards ICT based instructional materials among trainee teachers in four year teacher education program. In this study the qualitative and quantitative survey methods will be adopted to test the 600 trainee teachers who are pursuing four year teacher education program as sample. The different statistical techniques will be adopted to interpret the tabulated data.

Key Words: Attitude, Self confidence, competency, ICT, Instructional Materials, Trainee Teachers, Teacher Education Program

1.0 INTRODUCTION:

In recent years, we can't close the eyes to that interactive multimedia which dominates the field of language teaching. An effective teaching can be done easily by using the ICT- interactive multimedia in learning and teaching process. It will provide the professional real world demand than those traditional textbooks. However, we can't decline the popularity of textbook despite common enthusiasm for numerous modern tools. Not everyone is interested in using ICT-based instructional materials. Hutchinson and Torres (1994, p. 314) argue that a textbook is still the most important teaching aid since it does not only survive but also it thrives. It can be said that textbooks clearly survive because they satisfy certain needs. It is considering that not every area covered by the technology and internet so textbook is still the most commonly used in the teaching and learning process.

Growth of information and communication technology (ICT) brought in rapid changes in various fields. It had also made entry into school education because of its appropriateness, applicability and versatility in use for classroom teaching. It is well recognized that ICT has great potential for improving the teaching learning process. It facilitates individualized learning and develops problem solving skills. Its interactive nature motivates students to learn. Educationists and teachers believe that with the help of ICT quality of education given to the students can be significantly improved.

In this era of digital communication, both students and teachers have an easy access to sources of information. But, to take advantages of ICT, firstly, the trainee teachers need to be aware of various information technologies and their potential uses in the field of education. It is pertinent to expose the teachers to information technology so as to realize its benefits for them and for their students. Secondly, trainee teachers will have to update their knowledge and skills in using ICT to make fullest utilization of hardware and software resources available. With changing teaching methods in curriculum transaction, it is essential that trainee teachers have to leave their apprehensions behind about technology mediated instruction and adopt new technologies.

Thirdly, from the point of view of policy makers and educational administrators there is a need to redesign and reconstruct the educational systems based on the new educational paradigms so that both teachers and students develop necessary knowledge and skills sought in this digital age. Most countries around the world are focusing on approaches to integrate ICT in learning and teaching to improve the quality of education by emphasizing competencies such as critical thinking, decision-making, and handling of dynamic situations, working as a member of a team, and communicating effectively (Anderson & Weert, 2002). Governments, especially, in developing countries have been trying to improve their national programs to integrate ICT into education.

Indian government has been focusing on computers mediated teaching and learning in the schools. The significant role ICT can play in school education has been highlighted in the National Curriculum Framework (NCF, 2005). The Ministry of Human Resources Development, with its strategic partners, has engaged with approximately 400 members from the stakeholder community including education experts, ICT specialists, businesses, schools, teachers, students and others to collate their views, suggestions and recommendations on a national policy on ICT in school education. The aim has been to hold intense discussion with pedagogues and technology in education practitioners, and also increase the outreach of the process to a geographically spread pool of experts, communities of practitioners and stakeholders.

The policy aims at creating an ICT-knowledgeable society, providing free access to ICT enabled tools and resources to teachers and students and motivate the sections of the society strengthening the school education process through appropriate utilization of ICT (revised National Policy on Information and Communication Technology in School Education, 2012).

In this case, Schoology was used in this research finally to help the students and lecturers in learning process. Nicolas Borg and Jeff O'Hara developed Schoology in 2008. It is a learning management system (LMS) for the higher education institution. This web

application allows the users to create, to manage, and to share content and resources. It is also known as a course management system (CMS) or Virtual Learning Environment (VLE), the cloud-based platform provides tools to manage any classroom or blended learning environment. At the moment, it is very rare finding the specific tailor made syllabus, materials designed specifically in this field and ICT based instructional material development.

2.0 REVIEW OF RELATED LITERATURE:

For this study the researcher has reviewed a large number of literatures regarding the topic. Some of them are as follows :

● **Albugami, S & Ahmed, V. (2015)** in 'Success factors for ICT implementation in Saudi secondary schools: From the perspective of ICT directors, head teachers, teachers and students' showed that ICT was perceived as an important tool in improving performance, collaboration, learning experience and learning outcomes. However, some challenges that affect the application of ICT in Saudi schools are, for example, the lack of space, resources, maintenance, a lack of ICT skills among school along with a lack in ICT training and a lack of clear ICT policies. However, the overcoming of these obstacles could turn these barriers into positive factors to aid in the success of ICT implementation.

● **Ambedkar (2004)** conducted a study on "Effectiveness of computer Assisted English Language Learning at High School Level". This study reveals that there is a significant difference in the achievement of the IX Standard pupils in grammar among all the three treatment groups namely, computer, computer with teacher support and conventional. Among the three treatment groups the computer with teacher support group has the most significant effect on the pupils' achievement in grammar. In any of the three treatments, boys and girls do not differ significantly in their achievement in grammar.

● **A-View. (2016)** A-VIEW Classroom is a framework that provides a rich interactive social environment for E-Learning. It is simple, user friendly video conferencing software, which provides a great opportunity to a teacher to teach in a live interactive mode to various geographical locations across India. A-VIEW Classroom provides opportunity to connect several universities together and creates virtual world for students. It also acts as a Knowledge Cafe where students can discuss /chat about the lecture after the live class.

● **Bahr (2009)** in his study 'Technological barriers to learning' found that the complex ICT environments may adversely impact on student learning. Learning is enhanced when integrating pedagogies are employed to soften the sometimes high-load information environments of ICT. Further, a framework for ICT in education needs to consider the professional capacities of teachers in their differing abilities to effectively design and integrate technologies for learning.

● **Brossek (1998)** conducted study on 'Using a data-base in the lower primary classrooms'. He found that when student use data bases and spread sheets it leads to a real life context enhanced the teaching and learning in an enjoyable and practical way, and developed students' general thinking processes and problem solving skills. Students were enthusiastic and fascinated when using the electronic tools to solve problems.

● **Deaney et al. (2003)** in their study 'Pupil perspectives on the contribution of ICT to teaching and learning in secondary schools' found that students viewed ICT resources as helpful in tasks and presentations, and also useful in refining project reports and trial options. They associated ICT with change in the study environment and classroom relations; ICT applications raised interest and increased motivation on their part. Nevertheless, whilst the participants valued independent study and the challenge of ICT, they were concerned that this reshaping of learning might be displacing valuable teaching.

● **Diezmann et al. (2002)** conducted survey on 'Framework for multimedia resources'. They found clear evidence that students appropriated ICT resources as tools to construct an understanding of the teaching-learning process in science. Being able to access and revisit resources over time had the potential to strengthen effectiveness and heighten students' interest in science teaching. Although the project included pre-service and inservice teachers, the experience of using CD ROMs in teaching and learning applies equally well in primary and secondary schools.

● **Glang et al. (2005)** studied "an interactive multimedia program that teaches young children safe pedestrian skills". The result revealed that significant effects were found on the computer-delivered and behavioral measures. Children can learn to discriminate dangerous elements in traffic situations using the Interactive multimedia program and transfer that knowledge to real-life environments.

● **Gupta & Chirag (2014)** in 'Development of Multimedia Teaching Package in Mathematics for Class V' establish the effectiveness of MMTP by comparing the achievement scores of V class students of two groups (i.e. experimental and control) by teaching the selected content of mathematics syllabus prescribed by CBSE board. The students of experimental group were taught by using MMTP

and the students of control group were taught through conventional method. He also hypothesized that experimental group students who were taught through MMTP would perform better than the students of control group taught through conventional method.

●**Hasselbring et al. (2000)** in his study ‘Technology to support teacher development’ had shown that improving the quality of an education system depends upon teachers’ training and development. He argues that teachers should be trained to view ICT as a resource and to use technology in classroom activities, whilst earlier added that education authorities are responsible for teacher training.

●**Mahmud, R. & Ismail, M.A. (2010)** examined the “Impact of training and experience in using ICT on in-service teachers” basic ICT literacy”. The study found that majority of the teachers had moderate basic ICT knowledge and skills, and perceived ICT positively. Formal ICT training and ICT experience influence the teachers’ knowledge, skills and attitude. Therefore, teachers especially the older ones and normally with more teaching experience need to be identified, and provided with specially designed training programs, in various forms of ICT courses and workshops.

●**Mi Jie (2007)** conducted a study on “An application multimedia to the teaching of machine design”. Multimedia teaching employs modern learning theory and adopts engineering system method to optimize teaching process and achieve favorable effect. An optimal course system is introduced by using multimedia technology stimulates learners to study with discovery, association, leap and creativity.

●**Mooij et al. (2001)** in the study ‘Modeling and supporting ICT implementation in secondary schools’ found that teachers’ competence and confidence in their skills were one of the main factors to influence teachers’ willingness to integrate technology in their teaching and learning process. They claimed that educators’ lack of knowledge is a serious barrier to integrate ICT into secondary schools. Educators must attain and maintain an assured degree of technological competence to make instructional strategies more effective.

●**Munther Mohammed Zyoud (1999)** conducted a study on ‘Development of Computer Assisted English Language Teaching for VIII Standard Students’. The study reveals that when the computer is used to its full potential, it can help the students achieve more in learning vocabulary, grammar and comprehension to the learners with different IQ, motivation and attitude. It helps the students learn better because it provides them with a lot of freedom and responsibility to learn at their own pace. The students were found to have attitude towards Computer Assisted English Language instruction.

●**Munyantware (2006)** in his study ‘Problems affecting teachers’ adoption of technology in classrooms among science and mathematics teachers in Kisoro District’, reported that in addition to social support from colleagues, perceived support from the school influences teachers’ adoption decision. The study suggested that continuous support to teachers gives them confidence in using computers in teaching their relevant courses in institutions of higher learning.

●**Priscilla et al. (2008)** conducted study on ‘Factors that could possibly influence the use of laptops among educators’. They reported that guidance from a head of department is very important in encouraging the development of electronic lesson materials to encourage computer use for the specific subject in the teaching-learning environment. The study found out that the success of integrating ICT into the teaching-learning interaction among school teachers depends on the support provided by the principal of the school.

●**Reid (2013)** studied on ‘Quality assurance, open and distance learning, and Australian universities’. They found that determined online instructors moved through different phases of their online learning experience, and their needs changed at each stage. Furthermore, considering educational leaders were responsible for the quality of online programs and instruction they also needed to engage in professional development, and experiment with online learning environments, infrastructures, and technologies.

●**Sandholtz et al. (1997)** worked on ‘Teaching with technology, creating student-centered classrooms’. They reported that there were positive changes in student attitude. Their interest and motivation typically extended to the last week of school and as students became involved in working on computers, the time they spent on assignments and projects often increased. Students’ enthusiasm and interest resulted in greater on-task behavior and they were highly involved in their assignment and frequently able to work with little assistance. The project increased student initiative as they worked beyond the requirements of their assignments, and independently explored new applications and developed new skills. Student experimentation and risk taking increased.

●**Wolcott et al. (2011)** in their study ‘Faculty participation: Motivations, incentives, and rewards’ found that intrinsic motives, such as job satisfaction and trying new technology tools and teaching strategies, were the most influential factors in faculty decisions to get involved in online learning. They found that faculty who wanted to participate were least influenced by extrinsic motivations such as monetary support, course release time, and tenure and promotion credit. Furthermore, some universities who did not provide faculty release time to develop online courses have had other staff members do this work, as with instructional designers, multimedia developers, and technology experts.

●Young et al. (2012) studied on 'Preparing instructors for quality online instruction'. They found that warned an instructor's online role can be more difficult than one experienced in traditional classrooms. Online instructors were thought to have the extra burden of preparing courses well in advance, constantly facilitating the course, modeling good communication skills, and adjusting courses for the varied needs of students.

3.0 IMPLICATIONS OF THE PRESENT STUDY:

From the above related literature review different articles have shown that ICT based instructional materials are very much effective for teaching learning process in any subject. According to the opinion of different commissions, committees and different educationists instructional materials should be implemented in any type of educational institutions. Here the researcher is planning to study the impact of attitude, self confidence and competency towards application of ICT based instructional materials among trainee teachers in four year teacher education program. This study which is concerned with investigating attitude, self confidence and competency towards ICT based instructional materials among trainee teachers pursuing B.Ed course under four year teacher education program of both rural and urban area (including male and female) is bound to be of immense benefits to students, teachers, school authorities, educational stakeholders.

4.0 RATIONALE OF THE STUDY :

This study which is concerned with investigating attitude, self confidence and competency towards ICT based instructional materials among trainee teachers pursuing B.Ed course under four year teacher education program of both rural and urban area (including male and female) is bound to be of immense benefits to students, teachers, school authorities, educational stakeholders.

By the use of different aids the learning process of the students as well as over-all academic performance will be improved since it will increase the motivation of the students. The study will help to sensitize trainee teachers and staff of four year teacher education program and they are encouraged to use the instructional aids in teaching and learning process.

5.0 RESEARCH QUESTIONS:

1. What types of ICT based instructional materials are used by the trainee teachers (both male and female) in four year teacher education program?
2. What problems do the trainee teachers (both male and female) face in implementing ICT based instructional materials in four year teacher education program?
3. What are the possible solutions to the problems faced by the trainee teachers (both male and female) face in implementing ICT based instructional materials in four year teacher education program?
4. To what extent are ICT based instructional materials implemented in four year teacher education program?

6.0 SPECIFICATIONS OF THE PROBLEM:

Here the researcher is planning to study the impact of attitude, self confidence and competency towards application of ICT based instructional materials among trainee teachers in four year teacher education program. This study which is concerned with investigating attitude, self confidence and competency towards ICT based instructional materials among trainee teachers pursuing B.Ed course under four year teacher education program of both rural and urban area (including male and female) is bound to be of immense benefits to students, teachers, school authorities, educational stakeholders.

6.1 Statement of the Problem:

The researcher has taken the topic (*Impact of attitude, self confidence and competency towards application of ICT based instructional materials among trainee teachers in four year teacher education program*) as problem.

6.2 Objectives of the Study:

Objectives of the study are as follows:

- i) To measure the attitude of the trainee teachers towards ICT based instructional materials in four year teacher education program under the following heads:
 - a) Male & Female b) Locality (Rural & Urban) c) Teacher Training College (Govt. Aided & Private)
- ii) To measure the self-confidence of the trainee teachers towards ICT based instructional materials in four year teacher education program under the following heads:
 - a) Male & Female b) Locality (Rural & Urban) c) Teacher Training College (Govt. Aided & Private)
- iii) To measure the competency level of the trainee teachers towards ICT based instructional materials in four year teacher education program under the following heads:
 - a) Male & Female b) Locality (Rural & Urban) c) Teacher Training College (Govt. Aided & Private)

- iv) To find out relationship between the attitude and the self confidence among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.
- v) To find out relationship between the self confidence and the competency among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.
- vi) To find out relationship between the competency and the attitude among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.
- vii) To find out relationship between attitude, self confidence and competency among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.

6.3 Hypothesis of the Study:

Hypothesis of the study are as follows:

H0₁: There exists no significant relationship between the attitude of the trainee teachers towards ICT based instructional materials in four year teacher education program under the following heads:

- a) Male & Female b) Locality (Rural & Urban) c) Teacher Training College (Govt. Aided & Private)

H0₂: There exists no significant relationship between the self confidence of the trainee teachers towards ICT based instructional materials in four year teacher education program under the following heads:

- a) Male & Female b) Locality (Rural & Urban) c) Teacher Training College (Govt. Aided & Private)

H0₃: There exists no significant relationship between the competency of the trainee teachers towards ICT based instructional materials in four year teacher education program under the following heads:

- a) Male & Female b) Locality (Rural & Urban) c) Teacher Training College (Govt. Aided & Private)

H0₄: There exists no significant relationship between the attitude and the self confidence among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.

H0₅: There exists no significant relationship between the self confidence and the competency among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.

H0₆: There exists no significant relationship between the competency and the attitude among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.

H0₇: There exists no significant relationship between attitude, self confidence and competency among the trainee teachers (Male & Female, Rural & Urban, Govt. Aided & Private) towards ICT based instructional materials in four year teacher education program.

6.4 Explanation and Operationalization of the terms:

Attitude: A predisposition or a tendency to respond positively or negatively towards a certain idea, object, person, or situation. Attitude influences and individual's choice of action and responses to challenges, incentives and rewards.

Self confidence: The concept of self-confidence self-assurance in one's personal judgment, ability, power etc. One's self confidence increases from experiences of having mastered particular activities.

Competency: Competence is the demonstrable characteristics that enable performance of a job, for properly doing the job, the individual requires skills and knowledge essential for the set duties.

ICT: Information and Communication Technology (ICT) in education is the mode of education that use information and communications technology to support, enhance, and optimise the delivery of information. Worldwide research has shown that ICT can lead to an improved student learning and better teaching methods.

Instructional Materials: Instructional materials refer to the human and non-human materials. They are used by the teachers in class room to supplement the transmission of knowledge with a view to emphasizing clarification of instructions. It can also be used to ease, encourage, improved and promote teaching and learning activities.

6.5 Delimitations of the Study:

1. I have not studied the other teachers except trainee teachers pursuing B.Ed course under four year teacher education program.

2. I have not studied a large number of educational institutions in our state which are not considered here except B.Ed colleges under four year teacher education program.
3. There are a large number of rural and urban B.Ed colleges in our state but only B.Ed colleges of two Blocks are considered here.

7.0 METHODOLOGY :

7.1 Design of the Study:

The Design of this Study will be Descriptive Survey Research.

7.2 Population:

According to 2011 census there 26 (twenty six) Community Development (C.D.) Blocks, 5 (five) Municipalities in Purba Medinipur district. The researcher has chosen here Deshapran Block and Contai-I Block. The trainee teachers pursuing B.Ed course under four year teacher education program of both rural and urban area (including male and female) constitute the population of the study. Also trainee teachers pursuing B.Ed course under four year teacher education program from both Govt. Aided and Private Colleges constitute the population of the study.

7.3 Sample:

600 trainee teachers who are pursuing four year teacher education program are considered as sample in this study.

7.4 Tools and Techniques:

- 1) Attitude scale (Prepared by Mrs. Sree Rekha. R. ICT Attitude Scale, 2007).
- 2) Self confidence scale (self made, Reliability and Validity are to be determined.)
- 3) Competency scale (Prepared by Rani Sunita, Effect of Micro Teaching and Use of Multimedia on Teaching Competence of Prospective Teachers, 2010).

The Techniques to be used are as follows:

- i) Questionnaire for the trainee teachers.
- ii) Opinionnaire for the trainee teachers.
- iii) Statistical analysis and graphical representation.

7.5 Plan and Procedure:

The Design of this Study will be Descriptive Survey Research. 600 trainee teachers who are pursuing four year teacher education program are considered as sample in this study. The researcher has chosen qualitative and quantitative survey method for his research work. A tentative Plan of Works is given below in tabular form.

[1= January to March; 2= April to June; 3= July to September; 4= October to December]

Plan of Work	2020				2021				2022				2023				2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Review of Literature				X																
2. Construction of Tools							X	X												
3. Field Work & Sampling											X	X								
4. Pilot Study & Feedback													X							
5. Redesigning of Tools														X						
6. Data Collection															X					
7. Computation of Data																X				
8. Analysis of Data & Interpretations																	X			
9. Publications																		X		
10. Seminar & Editing the Thesis																			X	
11. Compilation of Thesis																				X
12. Submission of Thesis																				X

8.0 DATA COLLECTION:

The researcher has chosen here Deshapran Block and Contai-I Block. The trainee teachers pursuing B.Ed course under four year teacher education program of both rural and urban area (including male and female) constitute the population of the study. Also trainee teachers pursuing B.Ed course under four year teacher education program from both Govt. Aided and Private Colleges constitute the population of the study.

9.0 DATA ANALYSIS:

After collecting the data, the data will be interpreted and then it is discussed. After that the conclusion will be made accordingly.

10.CONCLUSION :

Conclusions are to be done after the collections and interpretation of data. The suggestion are also to be given how to improve.

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