

## **Awareness and Integration of Information and Communication Technology among the Pre-Service Teacher Educators of West Bengal**

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### **Abstract:**

This research study aims to depict the overview of Pre-service B.Ed teacher educators' ICT knowledge and its integration into the pre-service teachers' training programme. To attain the actual goal of this study self-made questionnaire was administered to 50 pre-service teacher educators including males and females of different govt. and private institution via a google form. Mean, SD, and t-test was employed for the statistical interpretation of data. The major findings revealed that there is no significant difference in ICT awareness and its integration into the pre-service teachers' training programme among the male and female teacher educators of Govt. and Private institutions. However, there is a major association between the govt. male and female pre-service teacher educators of West Bengal. Apart from it still there is lack of ICT knowledge and skills among the teacher educators of West Bengal.

**Key Words:** Awareness, Integration, ICT knowledge, Pre-service, Teacher Educators

### **Introduction:**

#### **ICT in the Context of Pre-Service Teachers Preparation:**

Teacher education is one of the vital parts of our education system. Teacher Education plays an immense role in making a person a teacher at any level of education by providing proper education and training. Generally, teachers' teaching or training is a kind of program that is mainly related to the improvement of teachers' aptitude and mastery over the teaching skills that would accredit and endow the teacher to qualify the necessities of

the profession and face the problems & gap therein. The National Policy of Education (NPE, 1986) highlighted that teachers' preparation is a long-term enduring process and its pre-service and in-service constituents are conjoined. The program of Action (POA, 1992) gave an efficient mark for enriching the attribute of teacher education because it was the pre-requisite to improving the quality of school and higher education. Afterward, the regulatory body (NCTE) came out with an educational framework (1998), that provided a guideline concerning content and different approaches of the teacher education system. Later on, many educational institutions of central and state governments reformed the structure of the teacher education system. The National Curriculum Framework (NCF, 2005) for school-level education identified the different exposure and essential demand of teacher education in both pre-service and in-service levels. In this context, various policies and committees were framed and established for the betterment of the teacher education system. Thus, the teacher education system needs to be reconstructed and revamped as per the present and future demands of the education system. As per the Indian educational framework, teacher education or preparation can be measured in two phases-1) Pre-Service 2) In-Service.

Pre-service teacher education also performs a dynamic role in our education system. It is a kind of training program that provides proper educational training, instruction, and practical experience to teacher educators before they undertake to teach in any institution. It prepares teachers from pre-primary level to higher institution/university level with different subject areas related to the pedagogical components of theory and practice, community work, practicum, multicultural program and micro-teaching are being enclosed under the teachers' training programme. So, based on this, there is an urgent need to develop an understanding of a child's growth and development and enlighten some ICT key skills among the teacher educators of our country. ICT knowledge is highly essential for both Pre-service and In-service teachers. With the aid of ICT, teachers can not only boost their teaching skills even they can also invent an innovative style of teaching & learning.

#### **Literature Review:**

**Roy (2020)** conducted a study on the incorporation of ICT in teacher education programs in the 21<sup>st</sup> century, where he has reflected the idea that at present there is an urgent need to incorporate modern methods; new pedagogy, and ICT-oriented tools in education. In that sense, teachers need to adopt the modern ICT tools for providing organizational and academic support to our learners. **Ilamurrgan & Jhonsen (2019)** has made a study on the knowledge and utility of ICT among pre-service teachers. The major findings of the study identified that there is no major difference in the average score knowledge about ICT skills between male and female teachers of pre-service, but there is a significant association between the level of ICT awareness among the teachers and the level of ICT utility of pre-service

teachers. **Malla (2018)** conducted a review-based study on ICT and the pedagogical competence of teachers. He has reflected that inculcation of technology into education assists the teachers to perform the task effectively in the classroom setting. Though he has also mentioned that still there is a less awareness of ICT among the teachers and other ICT integrated pedagogical skills and it is found to be a major obstacle in the field of teacher education. **Sahin (2018)** conducted a study on the involvement of ICT in the teacher's training institute of West Bengal concerning gender and locality. The major finding revealed that there is no major distinction between the use and awareness of ICT among the male and female teacher educators of the different urban and rural institutions. However, teachers of urban teacher training colleges are more updated and conscious about the uses and the different dimensions of ICT in comparison to rural teachers' training colleges. **Bhattacharjee & Deb (2016)** has performed a study on the role of ICT in 21<sup>st</sup> Century teacher education. The study reflected that by acquiring and practicing the knowledge of ICT in the classroom setting, student-teachers will become independent & effective teacher educators. Further, it is also mentioned that teachers of India now started using technology in the classroom. Internet use, video conferencing tools LCD, Projector, Dekstop, virtual classroom, are becoming the popular ICT tools used in educational institutions. **Thakur (2014)** has observed a study on the level of ICT awareness among teacher educators and compared the ICT awareness of teachers in terms of gender and locality. The result indicated that there is no distinguishing difference towards ICT awareness in terms of gender however there was a major difference found in terms of locality.

### Need of the Study:

In the contemporary system of education, there is a great need to change the outlook, attitude, and interest towards the conventional classroom setup (chalk to talk method) to the advanced techno-friendly method to articulate a revolutionary change in the area of education. In that sense, this is real-time for approving and digitalizing the entire world of education with open arms (**Sahin, 2018**). A teacher is the main mediator who can facilitate every possible way of learning. So, the teachers need extensive knowledge of ICT and can choose the most useful and relevant resources as per their teaching needs. It is an obvious fact that implementing technology into the process of education is not enough as the technology itself cannot lead to any changes. Rather teachers can integrate technology in his/her self because teachers have the potential to bring effective and necessary changes in the educational process (**Malla, 2018**). **The National Education Policy (NEP, 2020)** has also recommended on the maintenance teachers' training program, quality concern matter of pre-service teacher education to a great extent in which the great emphasis on admission, and teacher's preparation, course curriculum which shall be designed through suitable subject and aptitude test conducted through National Testing Agency with keeping the

focus view of language and cultural diversity (**Training & Shahar, 2016**). Therefore, we need skilled ICT teachers to facilitate ICT learning anywhere, anytime, and to anyone. West Bengal is a state where teacher training is given utmost importance to facilitate a teaching-learning atmosphere in schools and higher education. In that sense, there is an urgent need to know the ICT awareness and its integration in teaching among the pre-service teacher educators of West Bengal is significant.

**Objectives:**

- ◆ To ascertain and Compare the ICT awareness of pre-service teacher educators in terms of gender and type of Institutions.
- ◆ To identify and compare the integration of ICT based teaching among the pre-service teacher educators in terms of gender and type of institutions.

**Hypotheses:**

- There is no major difference in ICT awareness among the male and female teacher educators of different government and private institutions.
- There is no major difference regarding the integration of ICT based teaching among the male and female teacher educators of different government and private institutions.

**Research Design:**

In the present study, the investigator's intent is on finding the awareness and integration of Information and Communication Technologies among the pre-service teacher educators of West Bengal concerning gender and types of institution. For this purpose, the investigator has employed the field survey method via an online google form to collect the applicable particulars from the sample selected for the purpose.

**Table 1, Research Design**

<b>Independent Variable</b>		<b>Dependent Variable</b>
<b>A. Type of college</b> <b>B. Gender</b> <b>1) Male 2) Female</b>	1. Selected Government Teachers Training College 2. Selected Private Teachers Training College	1. ICT Awareness of teachers. 2. ICT Integration in Education

**Notes: Justification of Variables**

**Sample:**

The present study comprised of 50 teachers from teachers training Institutes, each 25 from govt. and private management having ICT education. Further, 50 teachers including male and female were selected randomly from the selected govt. and private teachers training Institutes. The purpos-

ive sampling procedure was followed to collect information for analysis and interpretation.

**Tools:**

A Survey Questionnaire was designed and prepared to gather the primary data about this research work. The researcher has applied two forms of google questionnaires. Which are-

- ◆ **ICT Awareness of Teachers** – The ICT awareness questionnaire covers the two components. The first section of the questionnaire includes 5 items on teachers' general knowledge of ICT and the second section consist of 10 items on checking the prior ICT facilities in the college campus, Such as Interactive whiteboard, Video conferencing tools, Projector, Online learning management system (Moodle), Scanner, CD/DVD, Fax Machine, Printers, LCD, Pen drive.
- ◆ **ICT Integration of Teachers** - ICT integration includes 3 components - i) Microsoft Word ii) Microsoft Excel iii) Microsoft PowerPoint. Each component consists of 5 items based on ICT integration in teaching.

**Result and Discussion**

**Analysis of objective:2**

**Table 2**

**Group Mean and SD Scores of ICT Awareness of Pre-Service Teacher Educators**

	Govt.		Private	
	Male	Female	Male	Female
Mean	12.50	10.00	10.20	10.06
SD	2.92	1.90	2.89	2.63

**Figure-1**  
**ICT Awareness of Pre-Service Teacher Educators**

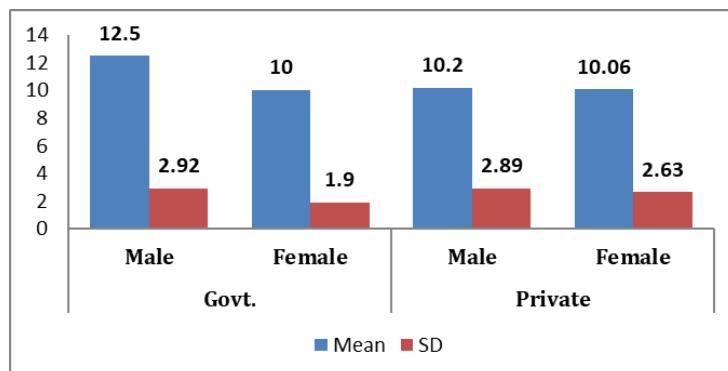


Figure-1 shows that there is a marked distinction among the average scores of government college's male and female teacher educators while

there is no marked distinction between the average scores of private college teachers' regarding ICT awareness.

**Table 3**  
*Mean, SD and 't' value of scores of Govt. and Private Pre-Service Teacher Educators on ICT Awareness*

Gender		N	Mean	Std. Deviation	t-value	Level of Significance
<b>Government</b>	Male	8	12.50	2.92	2.57	S**
	Female	17	10.00	1.90		
<b>Private</b>	Male	10	10.20	2.89	.119	N.S
	Female	15	10.06	2.63		

S = Significant

N.S = Not Significant

Significance (S) \*\* at 0.05 level = 1.98

Based on above table-3, it is evident that the 't' value of 2.57 is greater than the prescribed table value of 1.98 is at a 0.05 level of significance. It can be justified that there is a marked distinction between the male and female teacher educators of govt. institutions concerning ICT awareness. The study made by (**Thakur, 2014**) also corroborates the same result in the extent of ICT awareness of male and female teacher educators of West Bengal. However, the 't' value of .119 is less than the mentioned table value of 1.98 is at 0.05 level of significance, this highlighted that there is no major difference found between the male and female teacher educators of a private institution.

It can be measured that there is a great difference found between the govt. & private teacher educators about ICT awareness. It can be inferred that both govt. and private sector college campuses do not have adequate ICT awareness like—

ICT Lab, broadband and internet connectivity, and ICT related equipment such as smartboard/ Whiteboard, video conferencing tools, printers, projector, scanner, CD/DVD, use of pen drive, fax machine and other platforms of online classes like Moodle as require able. However, government college teacher educators have some better ICT awareness as compared to private college teacher educators.

**Analysis of Objective:2**

**Table 4**

*Group Mean and SD Scores of ICT Integration of Pre-Service Teacher Educators*

	Govt.		Private	
	Male	Female	Male	Female
Mean	9.60	9.40	8.69	9.50
SD	2.50	2.09	2.01	3.00

**Figure 2**

*Integration of ICT in Teaching*

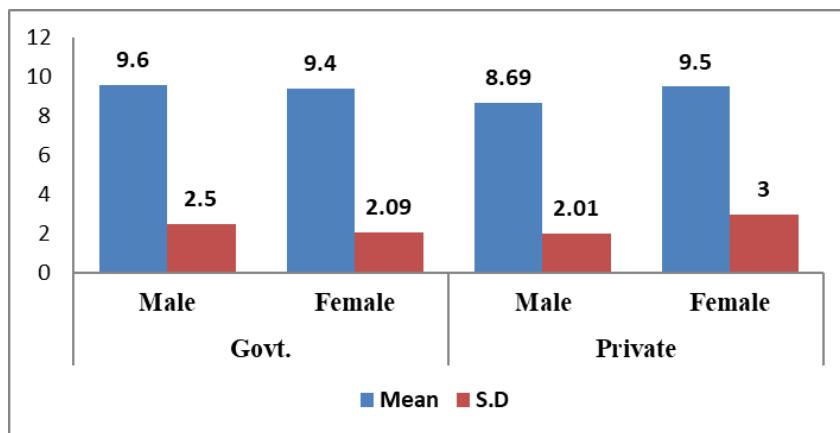


Figure-2 shows that in terms of gender there is no marked distinction between the male and female teacher educators of Govt. College, while the distinction between the private teacher educators is quite prominent. The female teachers are more updated to integrate ICT in their teaching.

**Table 5, Mean, SD and 't' value scores of Govt. and Private Pre-Service Teacher Educators on ICT Integration**

Gender		N	Mean	Std. Deviation	t-value	Level of Significance
Government	Male	8	9.60	2.50	.216	N.S
	Female	17	9.40	2.09		
Private	Male	10	8.69	2.01	.796	N.S
	Female	15	9.50	3.00		

S = Significant

N.S = Not Significant  
Significance (S) \*\* at 0.05 level = 1.98

From the above table-5, it is evident that 't' value of .216 is less than the table value of 1.98 is at a 0.05 level of significance. It can be justified that there is no major difference found between the male and female teacher educators of govt. institutions concerning ICT integration. However, 't' value of .796 is also less than the table value of 1.98 is at a 0.05 level of significance. This indicates that there is also no significant difference found between the male and female teacher educators of a private institution.

It can be said that there is no significant difference found between govt. & private teacher educators concerning ICT Integration. It can be inferred that both govt. and private male and female teacher educators do not have adequate ICT integration like- use of Microsoft Word, Microsoft Excel, Microsoft PowerPoint as creating and format new document, insert an image, create a table, entering data, create new chart and graph, import and export data, for presentation use of MS point as creating and edit a new slide, insert image & change font and layout and other necessary tools for an online and offline mode of teaching-learning. However, female teacher educators of private colleges have better knowledge of ICT integration in their academic sphere as compared to their male counterparts.

### **Conclusion:**

Derived from the above findings it is determined that, in adorning the application of ICT in teaching practices, the prime focus should be on teachers' good quality education as teachers play a key role in the procedure of teaching and learning. The above findings indicated that still teachers do not have an adequate level of ICT awareness and there is a marked difference between the male and female teacher educators of govt. institutions. As per the mean score result, the male teachers have better ICT knowledge and other ICT tools as compared to govt. female teacher educators. Therefore, the facilities such as ICT lab, projector, use of video conferencing tool, scanner, pen drive, fax machine, CD/DVD, Interactive whiteboard should need to be provided to female teacher educators for sustaining the fruit of ICT education.

In the case of ICT integration, there is no marked distinction found between the male and female teacher educators of govt. institutions. But at the same time as per the mean score result, a slight difference exists between male and female teacher educators of a private institution. In many cases, it is observed that female teacher educators are more attentive and interested in the use of ICT skills due to their prevailing ICT atmosphere either in the home or outside as well as the personal and professional need for ICT. In this connection to reach out the challenges of the present scenario, ICT-enabled education is a panacea for stakeholders to refine & revise themselves by the sophisticated features of ICT in the arena of education. ICT education can accelerate the current challenges of both pre-service and in-service teacher

education system.

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