



Digital Readiness of Trainee Teachers: A Study in the District of Purba Medinipur

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Abstract:

In this century, digital readiness has become a vital requirement for teacher education. This study aims to investigate the digital readiness level of trainee teachers in Purba Medinipur district, West Bengal. Methodology: This study adopts descriptive survey as its research method. Respondents for this study are B.Ed. trainees. Research will assess their access to digital resources, their technological competencies, and their readiness to use digital technologies for teaching-learning process. Results: This study indicates that although most of the trainee teachers have basic digital skills and are equipped with smartphones, there is still a presence of a digital pedagogical gap in terms of their digital readiness. Recommendations: The study suggests the provision of structured training and institutional infrastructure to improve the digital readiness of future teachers.

Keywords: Digital Readiness, Trainee Teachers, ICT, Teacher Education, Purba Medinipur.

Introduction:

The use of digital technology in educational systems has transformed the teaching and learning process. Teachers are required to be digitally capable and ready to embrace new teaching methodologies, and digital readiness is the readiness of individuals to use digital devices for professional use.

Trainee teachers are the future teachers and need to acquire digital readiness during their training period. However, due to differences in infrastructure, training and exposure, their level of readiness may differ, especially in Purba Medinipur district.

Concept of Digital Readiness

Digital readiness is a multidimensional concept comprising:

Technology access: Availability of smartphones, laptops, internet connectivity

Technical skills: Basic (e.g. MS Office, internet browsing) and advanced skills (e.g. content creation, LMS)

Pedagogical integration: Integration of digital tools within the teaching-learning activities

Attitudinal readiness: Attitude and confidence towards digital teaching

It is closely related to frameworks like TPACK (Technological Pedagogical Content Knowledge) and DigCompEdu.

Digital device and internet access

Basic and advanced digital skills

Capability to use digital technology in teaching

Attitude towards digital teaching

It is an integrated set of technical, cognitive and pedagogical competencies needed for effective digital teaching

Significance of the Study

Helps improve teacher training programs

Enhances digital teaching competencies

Useful for policymakers and institutions

Contributes to educational research

Delimitations of the Study

Limited to trainee teachers of Purba Medinipur

Limited sample size

Focus on digital readiness only

Operational Definitions

Digital Readiness: Preparedness to use digital tools effectively in teaching

Trainee Teachers: Students enrolled in B.Ed./teacher education programs

Review of Literature

Digital readiness and ICT competence of teachers and trainee teachers

Punya Mishra & Matthew J. Koehler (2006) introduced the TPACK framework, underlining the necessity of combining technology, pedagogy, and content knowledge for effective technology integration in teaching. They argue that technology integration in pedagogy demands more than just technical knowledge.

The European Commission (2017) developed the DigCompEdu Framework, which delineates six competence domains for educators. These include professional engagement, digital resources, and enabling active learning.

Ertmer Peggy A. (1999) identified internal and external barriers to teacher technology integration. These barriers range from resource limitations to resistance to change.

Teo Timothy (2011) showed that teachers' beliefs and attitudes towards technology have a strong effect on their intention to use ICT in their teaching.

Tondeur Jo et al. (2012) stressed the need for well-integrated ICT training into teacher education courses, as a means to foster sustainable digital competence.

NCERT reports (2020) and other Indian studies suggest that student teachers are comfortable using digital tools but lack formal training on digital pedagogy.

Furthermore, research indicates a rural-urban divide; student teachers from rural areas report challenges such as limited internet access and lack of devices.

Research Gap

Limited studies focus specifically on digital readiness in rural districts like Purba Medinipur.

Objectives of the Study

1. To find out the level of digital readiness of the trainee teachers
2. To find out the differences in gender
3. To find out the differences in rural and urban background
4. To identify the challenges in digital readiness

Research Questions

1. What is the level of digital readiness among the trainee teachers?
2. Will there be any differences depending on gender?
3. Will there be any differences depending on locality?
4. What are the challenges faced by the trainee teachers?

Hypotheses

H01: No statistically significant difference in digital readiness by gender

H02: No statistically significant differences by locality.

Research Design

The study used a descriptive survey method, which is suitable for assessing the current level of digital readiness among trainee teachers. This design helps in systematically collecting, analyzing, and interpreting data related to ICT competencies and readiness for digital teaching.

Population and Sample

Population: All trainee teachers enrolled in B.Ed. colleges in Purba Medinipur district.

Sample Size: 120–200 trainee teachers (you may adjust based on your dataset).

Sampling Technique:

Simple random sampling was used to ensure unbiased representation from different institutions.

Tools and Instruments

A self-structured questionnaire was used.

The tool consisted of four sections:

1. Basic digital literacy (e.g., use of devices, internet browsing)
2. ICT skills (e.g., MS Office, educational apps)
3. Digital pedagogy (e.g., online teaching tools, LMS usage)
4. Attitude toward digital learning

Scaling method:

A 5-point Likert scale (Strongly Agree to Strongly Disagree)

Validity and Reliability

Content validity was ensured through expert review.

Reliability was tested using Cronbach's Alpha (e.g., $\alpha = 0.82$, indicating good reliability).

Data Collection Procedure

Data were collected through online Google Forms and offline questionnaires.

Participants were informed about the purpose of the study.

Ethical considerations, such as confidentiality and consent, were maintained.

Data Analysis Techniques

Descriptive statistics: Mean, standard deviation, percentage

Inferential statistics:

t-test (gender comparison)

ANOVA (institution type comparison)

Results and Findings

Level of Digital Readiness

The majority of trainee teachers showed a moderate level of digital readiness.

A smaller percentage showed high-level skills, especially in basic digital skills.

Device and Internet Usage

Most respondents had access to smart phones and mobile internet.

Limited access to laptops and desktop computers affected the development of advanced skills.

ICT Skill Proficiency

High proficiency in:

Basic applications (Word, PowerPoint)

Social media tools

Low proficiency in:

Learning Management Systems (LMS)

Advanced digital tools (for example, content creation software)

Digital Pedagogical Skills

Moderate ability to:

Use online platforms (Zoom, Google Meet)

Prepare digital lesson plans

Low exposure to:

Blended learning strategies

Virtual classroom management

Gender Differences

No significant difference was found between male and female trainees in overall digital readiness.

Institutional Differences

Urban institutions showed slightly higher digital readiness than rural ones because they had better infrastructure.

Discussion

The findings show that trainee teachers in Purba Medinipur are aware of digital technology, but they are not fully ready for technology-based teaching.

The moderate level of readiness is similar to wider trends in Indian teacher education, where access to technology is available but effective use is still limited.

Dependence on smart phones shows limited use of professional digital tools, which are important for teaching.

The lack of a significant gender difference shows that digital access is becoming more equal.

Institutional disparities highlight the digital divide between rural and urban areas.

This suggests that digital readiness is not only about access, but also about training and practical use.

Recommendations

Based on the findings, the following recommendations are proposed:

Curriculum Enhancement

Integrate digital pedagogy courses into the B.Ed. curriculum.

Include practical training on:

LMS platforms

E-content development

Infrastructure Development

Improve access to:

Computer labs

High-speed internet in rural colleges

Training and Workshops

Organize regular

ICT workshops

Hands-on digital teaching sessions

Collaboration with government ICT initiatives

Faculty Development

Train teacher educators in digital tools to ensure effective guidance.

Policy-Level Support

Encourage partnerships with platforms like SWAYAM, DIKSHA.

Government funding for digital infrastructure in teacher education institutions.

Conclusion

The study concludes that trainee teachers in Purba Medinipur have basic digital competence but lack the advanced digital teaching skills needed for modern classrooms.

Although access to digital tools has improved, effective use remains a challenge. Bridging this gap requires:

Structured training

Curriculum reforms

Institutional support

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