

**A STUDY OF DIGITAL DIVIDE AND
PREPAREDNESS FOR ONLINE TEACHING AT
SECONDARY TEACHER EDUCATION
INSTITUTIONS**

SUMMARY

Submitted for the Award of the Degree of

Doctor of Philosophy

in

EDUCATION



Submitted by

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2023

SUMMARY

INTRODUCTION

In recent years, technology integration in education has transformed traditional teaching methodologies, leading to the adoption of online teaching platforms. This paradigm shift, especially in secondary teacher education institutions, has prompted a critical examination of the digital landscape, revealing disparities in access and preparedness. The rapid evolution of information and communication technologies has reshaped educational paradigms, emphasizing the need for educators to adapt to online teaching methods. While the benefits are numerous, a persistent digital divide threatens to create disparities in access to educational resources and opportunities among educators and students. The digital divide encompasses discrepancies in access to digital devices, internet connectivity, and proficiency in utilizing digital tools. Understanding the specific challenges teachers and students face at the educational institution is crucial for formulating targeted interventions to bridge these gaps. This study seeks to investigate the digital divide among educators and students within these institutions and assess the level of preparedness for effective online teaching. As technology continues to play an integral role in education, understanding and addressing the digital divide are imperative to ensure equitable access to quality learning experiences. This study aims to contribute valuable insights to inform policies and practices for creating a more inclusive and technologically proficient environment in secondary teacher education institutions. The digital divide, characterized by discrepancies in access to and utilization of digital technologies, presents a multifaceted challenge within educational contexts. Secondary teacher education institutions play a pivotal role in shaping the educators of tomorrow. Understanding the extent of the digital divide and evaluating the institutions' readiness for online teaching is crucial for fostering an inclusive and technologically adept educational environment. Integrating digital technologies in education has become increasingly prominent, with online teaching emerging as a critical modality, especially after the COVID-19 pandemic. However, the shift towards online education has unveiled a critical issue—the digital divide. This phenomenon encompasses the gap in access to technology, digital skills, and internet connectivity among individuals and communities.

The impact of the digital divide is particularly pronounced in secondary teacher education institutions, where the readiness to embrace online teaching varies significantly.

This study aims to delve into the multifaceted dimensions of the digital divide within the context of secondary teacher education institutions and assess their preparedness for the challenges posed by online teaching methodologies. The investigation will explore disparities in access to digital resources, technological infrastructure, and digital literacy among educators and students. Additionally, the study will scrutinize the institutional strategies and policies in place to address these disparities and enhance the efficacy of online teaching.

The significance of this research lies in its potential to inform policy formulation and institutional practices to bridge the digital divide, ensuring equitable access to quality education. As the global education landscape continues to evolve, understanding the digital preparedness of secondary teacher education institutions becomes crucial for fostering an inclusive and resilient educational environment. The study addresses the urgent need to identify and mitigate the digital divide within the context of teacher education. Within the realm of teacher education, understanding the impact of the digital divide is critical, as it directly influences the quality of education future teachers receive. As secondary teacher education plays a pivotal role in shaping the next generation of educators, assessing the preparedness of secondary teacher education institutions for online teaching becomes paramount for fostering an inclusive and effective learning environment. The preparedness for online teaching at secondary teacher education institutions is critical to ensuring effective and equitable education delivery in the digital age. As technology continues to play a pivotal role in education, teacher education institutions must proactively address the digital needs of teachers and students. The transition to online teaching requires careful consideration of various factors, including technological infrastructure, digital literacy, faculty training, and support systems. The ongoing global shift towards online education, accelerated by external factors such as the COVID-19 pandemic, underscores the urgency of investigating the digital preparedness of secondary teacher education. The study aims to identify factors contributing to the

digital divide among teacher education institutions, examine educators' challenges, and propose strategies to bridge the gap.

Digital Divide and Preparedness for Online Teaching

The "digital divide" is a term used to describe the gap between those who have access to digital technologies such as computers, the internet, and digital services and those who do not. Those who were seen as being on the "favoured side" of the split had direct accessibility to various forms of information and communication technology (Scheerder et al., 2017). The word "digital divide" was used for the first time in a study that was published in the middle of the 1990s by the National Telecommunications and Information Administration (NTIA) of the United States Department of Commerce (Gunkel, 2003).

This 'digital divide' categorization, which divides people into two groups based on whether or not they have access to information and communication technologies, has been questioned by a large number of scholars as technology has advanced (Gunkel, 2003),(Warschauer, 2002),(Selwyn, 2004),(Clark et al., 2004),(Potter, 2007), (Valadez & Durán, 2007). It is a global issue that affects people of all ages, genders, and socio-economic backgrounds. The concept of the "digital divide" has steadily expanded beyond just referring to a person's inability to have physical accessibility to information and communication technologies (the first level of the digital divide) and now encompasses how users interact with information and communication technologies and the purposes for which they use them (Ragnedda&Ruiu, 2017). So, the digital divide is a question of access and usage. Since the beginning of the 21st century, the research on the digital divide has progressed to a more sophisticated level that emphasizes the digital divide in terms of skills, knowledge, support quality, and training opportunities, creating the phenomenon described by Hargittai as the second level of the digital divide. Many studies that have been published have shown this (Morris & Brading, 2007; Jackson et al., 2008; Dunn, 2009; Hope & Grizzle, 2017; T. et al. et al., 2017; Van Deursen & Mossberger, 2018; Hargittai, 2002). People with access to digital technologies may be unable to use them due to a lack of technological skills, knowledge, or resources. It is

also essential to consider the quality of the internet connection and the service available. Those on the wrong side of the digital divide may have access to slow or unreliable connections, making it difficult to use digital services. Even though the rate of internet connection has been growing at markedly ridiculous speeds and the divides of physical access to information and communication technologies are covering all over the world, researchers who study the second level of the digital divide have concluded that the divide in digital skills will continue to grow even after physical availability to information and communication technologies is universal (van Deursen & van Dijk, 2019), (W. Chen & Wellman, 2004), (Avgerou & Madon, 2005), (Ali, 2011). It has been shown that individuals' age, gender, monthly income, higher education, and years of professional experience are the most significant elements in their ability to acquire digital skills and knowledge (König et al., 2018), (Yoon et al., 2020), (Mitzner et al., 2019), (K. Chen & Chan, 2014), (Paul & Stegbauer, 2005).

RATIONALE OF THE STUDY

There is an evident gap when reviewing the digital divide and preparation for online teaching at secondary teacher training institutions, as indicated in the review of related material just described above. It is of the utmost importance to investigate the degree to which stakeholders, particularly those working in government-run secondary education training institutions, are equipped for online instruction. According to Fitzpatrick, R. (2001), India is a developing nation making strides towards entering the zone of developed nations soon. A boost is also needed in the education sector to make progress. Indeed, a state like Uttar Pradesh is contending with the unsettling fact that online education is becoming increasingly prevalent at secondary teacher training Institutions. Students say that fifty per cent of the children in Uttar Pradesh do not utilize any electronic learning instrument. According to information from the state education department, "as many as half of the 1.8 crore students enrolled in government-run primary and upper primary schools spread across 75 districts of Uttar Pradesh have yet to access the online content made available during this pandemic hit academic year." The researcher has made an effort to emphasize the digital gap and the degree to which both teacher educators and pupil teachers at the Secondary Teacher Training Institutes in the Hardoi District are prepared to participate in online instruction. In terms of the digital

divide in Hardoi District, the study has focus on the challenges that arise among those who have and those who do not have access to the latest technology and those who do not use often due to difference in their attitude, skills, applications and availability of ICT infrastructure at secondary teacher training institutions.

STATEMENT OF THE PROBLEM

The study is stated *A Study of Digital Divide and Preparedness for Online Teaching at Secondary Teacher Education Institutions.*

OPERATIONAL DEFINITIONS OF THE KEY TERMS USED

Digital divide -It refers to the inequality in access to use or proficiency in using digital technology and the internet. It is the gap between those who have access to the latest technology and those who do not use often due to difference in their attitude, skills, applications and availability of ICT infrastructure

Preparedness- It is the state of being ready for technology access, technology skills, study skills, motivation, technological literacy, communication skills, time management skills, student engagement skills, assessment and evaluation skills

Online teaching- It refers to the teaching-learning process through online mode.

Secondary teacher education institution- Refers to colleges offering B.Ed. Courses of B.Ed. Programmed.

OBJECTIVES OF THE STUDY

o Major Objective

❖ To study the level of digital divide among pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh

o Sub Objectives

❖ To compare the level of digital divide among rural and urban pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Availability of ICT infrastructure
- Attitude towards using technology
- Skills of using technology
- Application of technology

- ❖ To compare the level of digital divide among male and female pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:
 - Availability of ICT infrastructure
 - Attitude towards using technology
 - Skills of using technology
 - Application of technology.
- **Major Objective**
 - ❖ To study the level of digital divide among teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh.
- **Sub Objectives**
 - ❖ To compare the level of digital divide among rural and urban teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:
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 - Availability of ICT infrastructure
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 - Application of technology.
- **Major Objective**
 - ❖ To study the level of preparedness for online teaching among pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh.

○ **Sub Objectives**

❖ To compare the level of preparedness for online teaching among rural and urban pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Technology access
- Technology skills
- Study skills
- Time management
- Motivation

❖ To compare the level of preparedness for online teaching among male and female pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Technology access
- Technology skills
- Study skills
- Time management
- Motivation

○ **Major Objective**

❖ To study the level of preparedness for online teaching among teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh.

○ **Sub Objectives**

❖ To compare the level of preparedness for online teaching among rural and urban teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Technological literacy
- Communication skills
- Time management skills
- Engagement skills
- Assessment and evaluation skills

- ❖ To compare the level of preparedness for online teaching among male and female teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Technological literacy
- Communication skills
- Time Management skills
- Engagement skills
- Assessment and evaluation skills

RESEARCH HYPOTHESES

○ **Major Research Hypotheses**

- ❖ There is significant difference in the level of digital divide among pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh

○ **Sub Research Hypotheses**

- ❖ There is significant difference in the level of digital divide among rural and urban pupil teachers of secondary teacher training institutions of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Availability of ICT infrastructure
- Attitude towards using technology
- Skills of using technology
- Application of technology.

- ❖ There is significant difference in the level of digital divide among male and female pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

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- Skills of using technology
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○ **Major Research Hypotheses**

- ❖ There is significant difference in the level of digital divide among teacher educators of secondary teacher training institutions of Hardoi.

○ **Sub Research Hypotheses**

❖ There is significant difference in the level of digital divide among rural and urban teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Availability of ICT infrastructure
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- Technology access
- Technology skills
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❖ There is significant difference in the level of preparedness for online teaching among male and female pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

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- ❖ There is significant difference in the level of preparedness for online teaching among male and female teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Technological literacy
- Communication skills
- Time Management skills
- Engagement skills
- Assessment and evaluation skills

NULL HYPOTHESES

○ **Major Null Hypotheses**

- ❖ There is no significant difference in the level of digital divide among pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh.

○ **Sub Null Hypotheses**

❖ There is no significant difference in the level of digital divide among rural and urban pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Availability of ICT infrastructure
- Attitude towards using technology
- Skills of using technology
- Application of technology.

❖ There is no significant difference in the level of digital divide among male and female pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Availability of ICT Infrastructure
- Attitude towards using technology
- Skills of using technology
- Application of technology.

○ **Major Null Hypotheses**

❖ There is no significant difference in the level of digital divide among teacher educators of secondary teacher training institutions of Hardoi.

○ **Sub Null Hypotheses**

❖ There is no significant difference in the level of digital divide among rural and urban teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Availability of ICT infrastructure
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- **Major Null Hypotheses**
- ❖ There is no significant difference in the level of preparedness for online teaching among pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh.
- **Sub Null Hypotheses**
- ❖ There is no significant difference in the level of preparedness for online teaching among rural and urban pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:
 - Technology access
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- ❖ There is no significant difference in the level of preparedness for online teaching among male and female pupil teachers of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:
 - Technology access
 - Technology skills
 - Study skills
 - Time management
 - Motivation
- **Major Null Hypotheses**
- ❖ There is no significant difference in the level of preparedness for online teaching among teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh.

○ **Sub Null Hypotheses**

❖ There is no significant difference in the level of preparedness for online teaching among rural and urban teacher educators of secondary teacher training institutions of Hardoi district of Uttar Pradesh with respect to:

- Technological literacy
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- Assessment and evaluation skills

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- Technological literacy
- Communication skills
- Time Management skills
- Engagement skills
- Assessment and evaluation skills

DELIMITATION OF THE STUDY

- The study is delimited to the Hardoi District only.
- The study is delimited to pupil teachers and teacher educators.

METHOD OF THE STUDY

In this study, the researcher used a survey research design. The most common type of social science research, including that in education, is survey research. A survey is a type of descriptive study that involves gathering data from a group of students, instructors, or other people involved in the educational process and analyzing that data to shed light on crucial educational topics. The majority of surveys use samples from a particular target population.

As per the nature of the study, the investigator decided to adopt the survey method under the descriptive research method because it offers accurate and trustworthy data for the

study. In order to accomplish the objectives of the present study the descriptive survey method was considered appropriate for gathering data that is, the perception of teacher educators and pupil teachers towards the digital divide and their preparedness for online teaching at the secondary teacher training institutions. Therefore, survey design was important for this study to collect factual data from the large sample size. Descriptive survey method is designed to obtain pertinent and precise information concerning the current status of phenomena and whenever possible, to draw valid general conclusions from the facts discovered

SAMPLE AND SAMPLING FRAME

The researcher used the purposive sampling to select the district for the study from the state of Uttar Pradesh. Hardoi was the district selected through this process. Again, random sampling was used for the selection of the ten Institutions. Further, Pupil Teachers and Teacher Educators were selected from the ten institutions using stratified random sampling technique. The details of the sampling frame are as follows:

Name of the Institutions

S. No.	Name of the Institutions	Intake Capacity in B.Ed
1	Subhash Chandra Bose PG College, Hardoi	2 Units
2	Masee Hunnisa Degree College, Khajohana, Hardoi	2 Units
3	Dr. Hari Shankar Mishra P.G. College Malihamau, Hardoi	2 Units
4	B.N.A.S. Mahavidyalaya, Mahari Hardoi	2 Units
5	Maharana Pratap Government Post Graduate College, Hardoi	2 Units
6	Gyandeep Degree College, Newada, Tadiyava Hardoi	2 Units
7	Dr. Ram Manohar Lohiya Degree College Allipur, Hardoi,	2 Units
8	BN Degree College, Shahabad Hardoi	2 Units
9	Mahipal Singh Mahavidyalaya, Khumaripur, Behta College Hardoi	2 Units
10	Swami Brahmanand Mahavidyalaya, Agampur, Sahabad College Shahabad, Hardoi	2 Units

Sampling Frame of Pupil Teachers

Sample Size of Pupil Teachers			
	Male	Female	Total
Rural	120	120	240
Urban	120	120	240
Total	240	240	480

Sampling Frame of Teacher Educators

Sample Size of Teacher Educators			
	Male	Female	Total
Rural	25	25	50
Urban	25	25	50
Total	50	50	100

TOOLS USED IN THE STUDY

In the present study, the following tools were used to collect the data keeping the above-mentioned criteria in mind. The descriptions of this tool are given below: -

1. Digital Divide Scale for Teacher Educators (DDSTE) constructed and standardized by the researcher.
2. Digital Divide Scale for Pupil Teachers (DDSPT) constructed and standardized by the researcher.
3. Preparedness for Online Teaching Scale (for Teacher Educators) (POTSTE) constructed and standardized by the researcher.
4. Preparedness for Online Teaching Scale (for Pupil Teachers) (POTSPT) constructed and standardized by the researcher.

STATISTICAL TECHNIQUES EMPLOYED

The data have been analyzed by statistical package for social sciences (SPSS) version 23 in the present study. All the hypotheses were tested at 0.05 level of significance.

Depending upon the nature of the hypothesis of the study, the investigator used the following descriptive and inferential statistical techniques for analyzing and interpreting the data. In the descriptive statistical techniques researcher has been used mean, frequency, range, percent, standard deviation and in the inferential statistics techniques t-test.

MAJOR FINDINGS OF THE STUDY

Based on the analysis and interpretations of data, it is intended to give a consolidated depiction of findings by taking into account the study's objectives. The primary research findings are listed in the following sub-sections

The Level of Digital Divide among Pupil Teachers

- ✚ It was found that 50.32 %. Pupil teachers of secondary teacher training institutions of Hardoi district have Digital Divide. The main reasons are that rural pupil teachers encountered inequalities in physical access to technologies at home and at secondary teacher training institutions. They are facing a digital gap due to being a first generation learner and the problem of SES and lack of availability of ICT infrastructure.
- ✚ There is a significant difference in the level of Digital Divide among Rural and Urban Pupil Teachers of Hardoi district concerning Availability of ICT Infrastructure (AOI) of secondary teacher training institution”. So, it is stated that Rural and Urban Pupil Teachers of Hardoi district have a digital divide concerning the Availability of ICT Infrastructure (AOI).
- ✚ The level of Digital Divide among Rural and Urban Pupil Teachers of Hardoi district is the same concerning attitude towards using technology in secondary teacher training institutions. So, it stated that Rural and Urban Pupil Teachers of Hardoi district have no Digital Divide regarding their attitude towards using technology.
- ✚ There is a significant difference in the level of Digital Divide among Rural and Urban Pupil Teachers of Hardoi district concerning skills of using the technology of secondary teacher training institution”. So, it is stated that Rural and Urban Pupil Teachers of the Hardoi district have Digital Divide concerning technology skills.

- ✚ The level of Digital Divide among Rural and Urban Pupil Teachers of Hardoi district concerning Application of Technology secondary teacher training institution is the same. So, it is stated that Rural and Urban Pupil Teachers of Hardoi district have equal levels of Digital Divide concerning the Application of Technology.
- ✚ There is no significant difference in the level of Digital Divide among Male and Female Pupil Teachers of Hardoi district concerning Availability of ICT Infrastructure (AOI) of secondary teacher training institution". So, it is stated that Male and Female Pupil Teachers of Hardoi district have no Digital Divide regarding the Availability of ICT Infrastructure (AOI).
- ✚ There is a significant difference in the level of Digital Divide among Male and Female Pupil Teachers of Hardoi district concerning attitudes towards using technology in secondary teacher training institutions. So, it is stated that Male and Female Pupil Teachers of Hardoi district are having Digital Divide concerning their attitude towards using technology.
- ✚ There is a significant difference in the level of Digital Divide among Male and Female Pupil Teachers of the Hardoi district concerning skills in using the technology of secondary teacher training institutions. So, it stated that Male and Female Pupil Teachers of Hardoi district are having Digital Divide concerning technology skills.
- ✚ The level of Digital Divide among Male and Female Pupil Teachers of Hardoi district is the same concerning Application of Technology in secondary teacher training institutions. So, it is stated that Male and Female Pupil Teachers of Hardoi district are having Digital Divide concerning the Application of Technology.

The Level of Digital Divide among Teacher Educators

- ✚ It was found that 60% of teacher educators are averagely faced digital divide. Maximum pupil teachers fall in this category. The average level is followed by below average, with 10% of the teacher educators falling in this category. Only 23% of the teacher educators are above average are having a digital divide. 5% are in the high category, meaning they do not have an ICT-related divide. The percentage falling in the highly high category is almost negligible, with 1% of digital divide

- ✚ There is a significant difference in the level of Digital Divide among Rural and Urban Teacher Educators of the Hardoi district concerning the Availability of ICT Infrastructure of secondary teacher training institutions. So, it is stated that Rural and Urban Teacher Educators of Hardoi district are having a digital divide concerning the Availability of ICT Infrastructure.
- ✚ The level of Digital Divide among Rural and Urban Teacher Educators of Hardoi district is the same concerning attitude towards using technology in secondary teacher training institutions. So, it is stated that Rural and Urban Teacher Educators of Hardoi district are having digital divide concerning attitude towards using technology.
- ✚ The level of Digital Divide among Rural and Urban Teacher Educators of Hardoi district is the same concerning skills of using secondary teacher training institution technology. So, it is stated that Rural and Urban Teacher Educators of the Hardoi district have no digital divide concerning technology skills.
- ✚ The level of Digital Divide among Rural and Urban Teacher Educators of Hardoi district is the same concerning the Application of technology in secondary teacher training institutions. So, it is stated that Rural and Urban Teacher Educators of the Hardoi district have no digital divide concerning the Application of technology.
- ✚ The level of Digital Divide among Male and Female Teacher Educators of Hardoi district concerning the Availability of ICT Infrastructure (AOI) of secondary teacher training institutions is the same. So, it is stated that Male and Female Teacher Educators in the Hardoi district have no Digital Divide concerning the Availability of ICT Infrastructure (AOI).
- ✚ There is no significant difference in the level of Digital Divide among Male and Female Teacher Educators of Hardoi district concerning attitude towards using technology in secondary teacher training institutions" So, it is stated that Male and Female Teacher Educators of Hardoi district have no Digital Divide concerning attitude towards using technology.
- ✚ The level of Digital Divide among Male and Female Teacher Educators of the Hardoi district is the same concerning Skills of using the technology of secondary teacher training institutions. So, it is stated that Male and Female Teacher Educators in the Hardoi district have no Digital Divide concerning technology skills.

- ✚ The level of Digital Divide among Male and Female Teacher Educators of Hardoi district is the same concerning Application of technology in secondary teacher training institutions. So, it is stated that Male and Female Teacher Educators in the Hardoi district have no Digital Divide concerning the Application of technology.

The Level of Preparedness for Online Teaching among Pupil Teachers

- ✚ It was found that 44% of pupil teachers are averagely prepared for online teaching. Maximum pupil teachers fall in this category. The average level is followed by below average, with 29% of the pupil teachers falling in this category. Only 18% of the pupil teachers are above average for online teaching preparedness 3.35% are in the high category, which means they are well prepared to teach online. The percentage falling in the extremely high category is almost negligible, with 0.41%.
- ✚ There is a significant difference in the level of Preparedness for Online Teaching among Rural and Urban Pupil Teachers of Hardoi district concerning Technology Access of secondary teacher training institution”. So, it is stated that Rural and Urban Pupil Teachers of the Hardoi district have variations in the Preparedness for Online Teaching concerning Technology Access.
- ✚ There is a significant difference in the level of Preparedness for Online Teaching among Rural and Urban Pupil Teachers of Hardoi district concerning Technology Skills of secondary teacher training institution”. So, it is stated that Rural and Urban Pupil Teachers of the Hardoi district have dissimilarity in Preparedness for Online Teaching concerning Technology Skills.
- ✚ The level of Preparedness for Online Teaching is the same among Rural and Urban Pupil Teachers of the Hardoi district concerning Study Skills of secondary teacher training institutions. So, it is stated that Rural and Urban Pupil Teachers of Hardoi district have equal Preparedness for Online Teaching concerning Study Skills.
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Rural and Urban Pupil Teachers of Hardoi district concerning Time Management of secondary teacher training institution”. So, it is stated that Rural and Urban Pupil Teachers of Hardoi district have similar Preparedness for Online Teaching concerning Time Management.

- ✚ Concerning the motivation of secondary teacher training institutions, there is a significant difference in the level of Preparedness for Online Teaching among Rural and Urban Pupil Teachers of the Hardoi district. So, it is stated that Rural and Urban Pupil Teachers of the Hardoi district have differences in the Preparedness for Online Teaching concerning Motivation.
- ✚ There is a significant difference in the level of Preparedness for Online Teaching among Male and Female Pupil Teachers of Hardoi district concerning Technology Access (TA) of secondary teacher training institution”. So, it is stated that Male and Female Pupil Teachers of the Hardoi district have variations in the Preparedness for Online Teaching concerning Technology Access (TA).
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Male and Female Pupil Teachers of Hardoi district concerning Technology Skills (TS) of secondary teacher training institution”. So, it is stated that Male and Female Pupil Teachers of Hardoi district have equal Preparedness for Online Teaching concerning Technology Skills (TS).
- ✚ There is a significant difference in the level of Preparedness for Online Teaching among Male and Female Pupil Teachers of Hardoi district concerning Study Skills (SS) of secondary teacher training institution”. So, it is stated that Male and Female Pupil Teachers of the Hardoi district have different Preparedness for Online Teaching concerning Study Skills (SS).
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Male and Female Pupil Teachers of Hardoi district concerning Time Management (TM) of secondary teacher training institution”. So, it is stated that Male and Female Pupil Teachers of Hardoi district have equal Preparedness for Online Teaching concerning Time Management (TM).
- ✚ Concerning the motivation of secondary teacher training institutions, there is a significant difference in the level of Preparedness for Online Teaching among Male and Female Pupil Teachers of Hardoi district”. So, it is stated that Male and Female Pupil Teachers of the Hardoi district have differences in their Preparedness for Online Teaching concerning motivation.

The Level of Preparedness for Online Teaching among Teacher Educators

- ✚ It was found that 32% of teacher educators are averagely prepared for online teaching. Maximum teacher educators fall in this category. The average level is followed by below average, with 28% of the teacher educators falling in this category. Only 18% of the pupil teachers are above average for online teaching preparedness 15% are in the high category, which means they are well prepared to teach online. The percentage falling in the extremely high category is almost negligible with 6%. This is a matter of concern as, despite implementing the policies, the target for digital transformation in the education sector has been neglected for rural students and teachers. Teacher educators need to be digitally skilled. For this, a sufficient number of computer labs must be established with proper wifi connection, and a digital education campaign must be organised in rural institutions.
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Rural and Urban Teacher Educators of Hardoi district concerning Technological Literacy (TL) of secondary teacher training institution". So, it is stated that Rural and Urban Teacher Educators of the Hardoi district have similar Preparedness for Online Teaching concerning Technological Literacy (TL).
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Rural and Urban Teacher Educators of Hardoi district concerning Communication Skills (CS) of secondary teacher training institution". So, it is stated that Rural and Urban Teacher Educators of the Hardoi district have a digital divide concerning Communication Skills (CS).
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Rural and Urban Teacher Educators of Hardoi district concerning Time Management Skills (TMS) of secondary teacher training institution". So, it is stated that Rural and Urban Teacher Educators of the Hardoi district have similar Preparedness for Online Teaching concerning Time Management Skills (TMS)
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Rural and Urban Teacher Educators of Hardoi district concerning Engagement Skills (ES) of secondary teacher training institution". So, it is stated that

Rural and Urban Teacher Educators of the Hardoi district have equal Preparedness for Online Teaching concerning Engagement Skills (ES).

- ✚ There is a significant difference in the level of Preparedness for Online Teaching among Rural and Urban Teacher Educators of the Hardoi district concerning secondary teacher training institutions' Assessment and Evaluation (AE). So, it is stated that Rural and Urban Teacher Educators of the Hardoi district have dissimilarity in the Preparedness for Online Teaching concerning Assessment and Evaluation (AE)
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Male and Female Teacher Educators of Hardoi district concerning Technological Literacy (TL) of secondary teacher training institution". So, it is stated that Male and Female Teacher Educators of the Hardoi district have no digital divide concerning Technological Literacy (TL)
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Male and Female Teacher Educators of Hardoi district concerning Communication Skills (CS) of secondary teacher training institution". So, it is stated that Male and Female Teacher Educators in the Hardoi district have similar Preparedness for Online Teaching concerning Communication Skills (CS).
- ✚ There is no significant difference in the level of Preparedness for Online Teaching among Male and Female Teacher Educators of the Hardoi district concerning Time Management Skills (TMS) of secondary teacher training institutions. So, it is stated that Male and Female Teacher Educators of the Hardoi district have equal Preparedness for Online Teaching concerning Time Management Skills (TMS)
- ✚ There is a significant difference in the level of Preparedness for Online Teaching among Male and Female Teacher Educators of Hardoi district concerning Engagement Skills (ES) of secondary teacher training institution". So, it is stated that Male and Female Teacher Educators of the Hardoi district need to be more consistent in the Preparedness for Online Teaching concerning Engagement Skills (ES).
- ✚ Concerning the Assessment and Evaluation Skills of secondary teacher training institutions, there is a significant difference in the level of Preparedness for Online

Teaching among Male and Female Teacher Educators of the Hardoi district. So, it is stated that Male and Female Teacher Educators of the Hardoi district have variations in Preparedness for Online Teaching concerning Assessment and Evaluation Skills.

CONCLUSION

In conclusion, the study explored the digital divide among pupil teachers and teacher educators in the secondary teacher training institutions of Hardoi district, Uttar Pradesh. The findings reveal significant disparities in various dimensions, shedding light on the unequal distribution of digital resources, skills, and attitudes among different groups.

Firstly, the research identified disparities in the availability of ICT infrastructure between rural and urban pupil teachers. Urban pupil teachers demonstrated higher knowledge and access to ICT tools and infrastructure compared to their rural counterparts. Additionally, urban pupil teachers exhibited better proficiency in using technological tools and apps, indicating digital skills divide.

Furthermore, the study highlighted gender differences in attitudes and skills related to digital technology. Female pupil teachers showed a more positive attitude towards using technology, while male pupil teachers displayed greater skills and knowledge in operating technological tools.

Similar patterns were observed among teacher educators, emphasizing the importance of considering the urban-rural divide. Urban teacher educators showcased higher knowledge and access to ICT tools, but rural teacher educators exhibited better attitudes towards using technological tools and apps. The study also noted gender differences among teacher educators, with male educators demonstrating higher engagement in technological activities, while female educators exhibited more assessment and evaluation skills.

In terms of online teaching preparedness, the research emphasized the challenges faced by both pupil teachers and teacher educators. The digital preparedness among pupil teachers was influenced by factors such as technological access, skills, and motivation.

Notably, urban pupil teachers demonstrated higher online teaching preparedness compared to their rural counterparts.

For teacher educators, the study raised concerns about the overall preparedness for online teaching, with a significant portion falling into the extremely low category. The findings underscored the need for digital skills development, particularly in rural institutions, where computer labs and digital education campaigns were identified as crucial components.

In light of these findings, it is imperative for educational institutions, policymakers, and stakeholders to address the digital divide by implementing targeted interventions. Initiatives should focus on enhancing ICT infrastructure, providing skill development programs, and promoting gender-inclusive strategies. Bridging the digital gap is essential for achieving the goals of digital transformation in the education sector, ensuring equitable access to educational resources and opportunities for all.

The main barrier for students to access and use ICT was a need for computers with Internet connectivity in their departments. In terms of the total level of hurdles, respondents from the rural background pupil teachers faced more barriers to accessing and using ICT than those from the other urban background. Barriers such as a lack of employees to maintain departmental equipment, a dearth of computers with Internet access in departments, and sluggish Internet connection speeds on campus were more prevalent at secondary teacher training institutions. Inequalities in access to ICT among rural pupil students can also be seen along gender lines and geographical areas. Finally, the study stated that students' attitudes towards ICT are crucial in contributing to the digital divide, as it shows a substantial positive link with ICT access, digital proficiency, and frequency of Internet use.

EDUCATIONAL IMPLICATIONS

A study of the digital divide and preparedness for online teaching among pupil teachers and teacher educators of secondary teacher education institutions of HarDOI district of Uttar Pradesh has made several findings, and the study makes educational implications to

ensure absolute equity in digital divide and online teaching preparedness at secondary teacher education institutions in the Hardoi district of Uttar Pradesh.

1. Government Initiatives:

- Implement awareness programs at the national and state levels emphasizing the importance of ICT in education.
- Provide digital infrastructure in secondary teacher training institutions, ensuring accessibility to ICT tools and resources.
- Subsidize Internet access for homes to address the digital access gap, especially in rural areas.
- Consider a pricing differentiation strategy for mobile computing devices to make them more affordable.
- Strengthen the Digital India initiative, focusing on rural students and addressing ground-level challenges.

2. Policy Makers:

- Formulate and enforce policies ensuring the availability of adequate ICT infrastructure in educational institutions, particularly in rural areas.
- Develop policies for the integration of artificial resources in institutions to enhance the learning experience.
- Address the digital gap among female pupil teachers by providing separate ICT labs and free wifi access.

3. District Administration:

- Improve ICT infrastructure facilities in secondary teacher training institutions, including computers and wifi access.
- Address the multifaceted concerns associated with the digital divide through practical and targeted procedures.
- Provide administrative guidance to ensure individualized solutions for students, including access to ICT equipment and resources.

4. Principals:

- Offer financial assistance to underprivileged pupil teachers to enhance their access to and use of technology.

- Transform public libraries into knowledge hubs with ICT infrastructure to provide cost-effective resources for economically challenged individuals.
- Advocate for the incorporation of ICT into the curriculum and offer support for teachers' professional development in ICT.

5. Teachers:

- Promote motivation among pupil teachers for online teaching by emphasizing the valid reasons for using the Internet.
- Intensify classroom ICT infrastructure and practices to reduce disparities in access and usage among students.
- Introduce IT, computer, and Internet education in the early stages of childhood to minimize the digital divide.
- Establish training programs focused on the beneficial use of the Internet to encourage a positive attitude among pupil teachers.
- Improve ICT infrastructure in teacher training institutions to enhance the overall preparedness for online teaching.

6. Overall Collaboration:

- Foster collaboration between national and local governments, public and private companies, international organizations, and citizens to address digital inequality comprehensively.
- Encourage partnerships between educational institutions and private companies to support digital literacy initiatives.

Implementing these recommendations will contribute to narrowing the digital divide among pupil teachers and teacher educators, fostering a more inclusive and equitable learning environment in secondary teacher training institutions.

SUGGESTIONS FOR FURTHER RESEARCH

The researcher would like to make a few suggestions for future research to be carried out or conducted, which were not incorporated in this study. These include the following areas.

1. **Methodological Replication:**

- Replicate the same study using a different methodology to validate and enhance the robustness of the findings. This could involve employing

mixed-methods research or experimental designs to complement the quantitative data.

2. Expanded Sample Size:

- Expand the study by including a larger number of principals, teacher educators, parents, and pupil teachers. A more extensive sample size can contribute to generalizing the results to a broader population and provide a more comprehensive understanding of the digital divide.

3. Regional Comparative Studies:

- Conduct research projects on similar topics to investigate the level of the digital divide in different regions of Uttar Pradesh. Comparative studies across districts or socio-economic backgrounds can offer nuanced insights into regional variations.

4. Determinants of the Digital Divide:

- Explore different determinants that contribute to the digital divide in Uttar Pradesh. Investigate socio-economic factors, educational policies, and other variables that may influence the access and usage of ICT tools among educators and students.

5. School-Level Digital Divide:

- Conduct a similar study to investigate the level of the digital divide specifically at the school level in Uttar Pradesh. This focused approach can provide targeted insights into disparities within individual educational institutions.

6. Qualitative Research:

- Undertake qualitative research using interview and observation techniques to gain in-depth insights into the experiences and perceptions of stakeholders. Qualitative data can enrich the study's findings and provide a more nuanced understanding of the digital divide in Uttar Pradesh.

7. Comparative Studies with Other States:

- Conduct comparative studies between Uttar Pradesh and other states, such as Bihar, to analyze the level of the digital divide and preparedness for

online teaching. This comparative approach can highlight regional disparities and best practices.

8. Parental Involvement and Policies:

- Explore practices and policies that facilitate parents in providing an appropriate learning environment using ICT at home for their children. Investigate the role of parental involvement in bridging the digital gap among students.

9. Evaluative Studies on ICT Initiatives:

- Conduct evaluative studies to determine the effectiveness of various ICT initiatives in bridging the digital divide among pupil teachers. Assess the impact of specific interventions and policies aimed at improving digital literacy and access.

These suggestions aim to encourage future researchers to delve deeper into the complexities of the digital divide in Uttar Pradesh, employing diverse methodologies and exploring additional factors that contribute to the divide. Addressing these areas can contribute to a more comprehensive understanding of the challenges and opportunities in promoting digital inclusion in the education sector.