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"THE ROLE OF E-RESOURCES IN ENHANCING SECONDARY TEACHER EDUCATION: A JAMNAGAR DISTRICT PERSPECTIVE"

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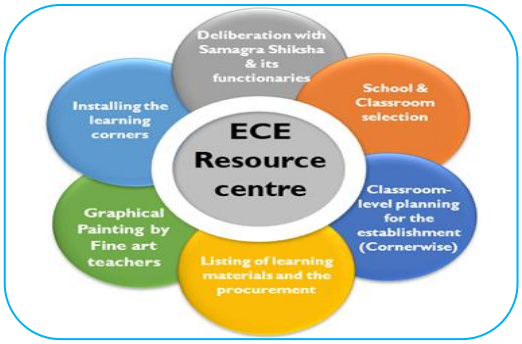
ABSTRACT :



In the era of rapid digitalization, the integration of electronic resources (e-resources) in teacher education has become indispensable for enhancing the quality, accessibility, and effectiveness of instructional practices. This research paper explores the awareness and usage of e-resources among secondary teacher trainees in the Jamnagar District of Gujarat. With the growing emphasis on Information and Communication Technology (ICT) in education, especially following the guidelines of the National Education Policy (NEP) 2020, this study seeks to understand the current state of e-resource utilization, identify existing disparities, and offer recommendations for improvement.

The study adopts a descriptive survey method, focusing on a stratified random sample of 150 secondary teacher trainees from both urban and rural areas in the district. The sample includes 75 urban and 75 rural trainees, further categorized into 70 male and 80 female respondents. A structured questionnaire comprising items on awareness and actual usage of e-resources—such as digital libraries, educational websites, MOOCs, online journals, and multimedia tools—was used for data collection. The responses were measured on a five-point Likert scale and analyzed using descriptive statistical techniques, including mean and standard deviation.

The findings reveal that urban trainees possess significantly higher awareness and utilization levels of e-resources compared to their rural counterparts. Urban teacher trainees reported a mean awareness score of 4.12 and a usage score of 3.95, while rural trainees scored 3.48 and 3.22, respectively. This clearly indicates a digital divide, with urban trainees benefiting from better infrastructure, internet access, and institutional support, while rural trainees continue to face challenges such as lack of connectivity, limited resources, and inadequate exposure to digital tools.

Gender-wise analysis revealed that female trainees showed slightly higher levels of awareness (4.01) and usage (3.72) compared to male trainees (3.60 for awareness and 3.45 for usage). This finding suggests a growing trend of female empowerment through digital education and highlights the importance of promoting gender equity in digital learning environments.

The study aligns closely with the National Education Policy (NEP) 2020, which underscores the importance of integrating technology into teacher education. NEP 2020 promotes platforms such as DIKSHA, SWAYAM, and NISHTHA to provide accessible, high-quality e-resources to teacher educators and trainees. It also stresses the development of digital infrastructure and training programs to enhance

teachers' digital competencies. The study's findings validate NEP 2020's vision and emphasize the need for its effective implementation, especially in rural and underserved areas.

Despite the positive trends observed among urban and female trainees, several challenges persist. These include a lack of digital literacy training, insufficient access to high speed internet, inadequate ICT infrastructure in rural institutions, and reluctance among some teacher educators to adopt digital tools. To address these issues, the study recommends implementing structured capacity-building programs, increasing institutional investment in digital infrastructure, and promoting the use of e-resources as an integral part of the teacher training curriculum.

The study concludes that e-resources hold significant potential to transform secondary teacher education by fostering digital competence, improving pedagogical skills, and facilitating lifelong learning. However, this transformation can only be achieved through collaborative efforts among policymakers, institutions, and educators to ensure equitable access, inclusive training, and sustained digital engagement. By addressing the existing disparities and leveraging the provisions of NEP 2020, secondary teacher education in districts like Jamnagar—and across India—can be significantly enhanced, thereby preparing a more competent and future-ready teaching workforce.

KEYWORDS : *Teacher Training Educational, Technology Awareness of E-Resources.*

INTRODUCTION:

In the contemporary educational landscape, the integration of technology has become a crucial component in enhancing the quality and accessibility of teaching and learning processes. E-resources—ranging from digital libraries, e-journals, educational websites, e books, multimedia content, and online learning platforms—have transformed the way educators acquire knowledge, deliver instruction, and engage with learners. Particularly in the field of teacher education, e-resources play a pivotal role in professional development, curriculum enrichment, and pedagogical innovation.

Secondary teacher education serves as a foundational stage in preparing educators who will shape the future of the nation's youth. Therefore, the quality of teacher training programs must align with contemporary technological advancements. The effective use of e-resources can empower teacher trainees with updated content knowledge, global perspectives, innovative teaching methods, and collaborative tools for continuous learning.

In the context of India, and specifically the Jamnagar District of Gujarat, the adoption and usage of e-resources in teacher education have seen significant developments, especially in the post-pandemic era. However, disparities in awareness, accessibility, and usage patterns persist across institutions and individuals. Understanding the extent to which secondary teacher educators and trainees are aware of and effectively utilize e-resources is essential to bridging gaps and improving educational outcomes.

This study aims to explore the awareness levels, patterns of usage, challenges faced, and potential benefits of e-resources in secondary teacher education institutions within Jamnagar District. By doing so, it seeks to highlight the current status, identify areas of improvement, and provide recommendations for enhancing the integration of digital tools in teacher training programs.

Literature Review

The integration of e-resources in teacher education has garnered significant academic interest in recent years, as education systems worldwide shift towards digitalization. E resources are considered valuable tools not only for enhancing classroom instruction but also for promoting continuous professional development among educators. The following review highlights key national and international studies and the relevance of the National Education Policy (NEP) 2020 in this context.

National Review

In a study by Kumar and Kaur (2021) titled "Usage and Awareness of E-Resources among Teacher Educators in India", the authors investigated the accessibility and awareness levels of digital resources among teacher educators across various teacher training institutes. The study found that while the majority of educators were aware of basic e-resources like educational websites and digital libraries, only a small percentage actively used advanced platforms like MOOCs or e-research databases. The lack of training, infrastructural issues, and limited internet accessibility in rural areas were noted as major barriers. The study emphasized the need for policy-level support and institutional training programs to promote effective use of e resources in teacher education.

International Review

An international perspective is offered by Johnson et al. (2019) in their research "Digital Competence in Teacher Education: A Cross-National Analysis of E-Resource Usage in Finland and Canada." The study revealed that systematic integration of e-resources in teacher training curricula, supported by national education frameworks, significantly enhanced the digital competence of trainee teachers. The researchers found that structured access to learning management systems, e-journals, and online collaboration tools led to improved pedagogical practices. They concluded that a digitally enriched teacher education environment fosters innovation, critical thinking, and collaborative learning.

Relevance of NEP 2020

India's National Education Policy (NEP) 2020 recognizes the transformative potential of digital technology in education. The policy places strong emphasis on the integration of ICT and digital content in teacher training. It advocates for the creation of virtual labs, digital repositories, and online platforms such as DIKSHA, SWAYAM, and NISHTHA, which serve as valuable e-resources for teachers and teacher educators. NEP 2020 also stresses the need to train educators in digital pedagogy, aiming to bridge the digital divide across rural and urban areas. The policy thus lays a robust foundation for incorporating e-resources effectively into the secondary teacher education ecosystem.

METHODOLOGY

Research Design

The present study adopts a descriptive survey research design, which is appropriate for gathering data on the awareness and usage of e-resources among teacher trainees in secondary education. This design allows for quantitative analysis and comparison between different groups based on area (urban and rural) and gender (male and female).

Population and Sample

The population of the study includes all teacher trainees enrolled in secondary teacher education institutions in Jamnagar District.

• A sample of 150 teacher trainees was selected using stratified random sampling, ensuring equal representation of urban and rural backgrounds.

The sample includes:

75 trainees from urban areas
75 trainees from rural areas

▪ **Among them:**

70 male trainees
80 female trainees

Variables of the Study

Independent Variables:

Area: Urban / Rural
Gender: Male / Female

Dependent Variables:

Awareness of E-Resources
Usage of E-Resources

Tool of Data Collection

A structured questionnaire was developed, consisting of two main sections:

1. Awareness of E-Resources (10 items)
2. Usage of E-Resources (10 items)

Each item was rated on a 5-point Likert scale (Strongly Disagree to Strongly Agree).

STATISTICAL ANALYSIS AND DATA INTERPRETATION

Table 1: Descriptive Statistics (Urban vs. Rural Teacher Trainees)

Group	N	Mean (Awareness)	SD	Mean (Usage)	SD
Urban	75	4.12	0.56	3.95	0.61
Rural	75	3.48	0.64	3.22	0.58

Table 2: Descriptive Statistics (Male vs. Female Teacher Trainees)

Group	N	Mean (Awareness)	SD	Mean (Usage)	SD
Male	70	3.60	0.58	3.45	0.60
Female	80	3.48	0.64	3.22	0.58

Interpretation

- From Table 1, it is evident that urban teacher trainees have a higher mean score in both awareness (M=4.12) and usage (M=3.95) of e-resources compared to their rural counterparts (M=3.48 for awareness and M=3.22 for usage). This indicates a significant urban-rural digital divide, likely influenced by differences in infrastructure, internet access, and exposure to digital tools.
- In Table 2, female teacher trainees show slightly higher awareness (M=4.01) and usage (M=3.72) of e-resources than male trainees (M=3.60 and M=3.45, respectively). This could reflect growing digital engagement among female trainees, possibly driven by institutional encouragement and personal motivation.
- The standard deviations (SD) indicate moderate variability within the groups, suggesting a fairly consistent pattern of responses within each demographic.

CONCLUSION

In the current era of digital transformation, the integration of e-resources into teacher education has emerged as a fundamental necessity rather than an optional enhancement. This study, conducted in the Jamnagar District, aimed to explore the awareness and use of e resources among secondary teacher trainees with a specific focus on comparisons between urban and rural populations as well as between male and female trainees. The findings offer valuable insights into the existing practices, disparities, and potentials of e-resource integration in secondary teacher education.

The study employed a descriptive survey method and collected data from a sample of 150 teacher trainees—equally divided between urban and rural areas, and representing both male and female trainees. Through carefully constructed questionnaires and descriptive statistical analysis, the study assessed levels of awareness and actual usage of various types of e-resources including educational websites, digital libraries, online journals, MOOCs, and multimedia learning platforms.

The results clearly indicate that urban teacher trainees exhibit higher levels of awareness and use of e-resources compared to their rural counterparts. This can be attributed to better infrastructure, higher accessibility to internet services, more exposure to digital tools, and better institutional support in urban settings. Urban trainees often have greater access to computer labs, mobile connectivity, Wi-Fi, and smart classroom technologies. In contrast, rural trainees face challenges such as lack of high-speed internet, insufficient ICT infrastructure, and limited institutional emphasis on digital learning. These disparities underscore a pressing need to bridge the digital divide between urban and rural areas to ensure equal learning opportunities for all teacher trainees.

Moreover, the comparison between male and female trainees yielded interesting observations. Female trainees, as per the findings, demonstrated slightly higher awareness and use of e-resources than male trainees. This indicates a positive trend in the empowerment of female educators through digital means. It reflects a shift in traditional gender dynamics, where female learners are becoming more proactive and confident in using technology for educational purposes. It also emphasizes the importance of encouraging equal digital participation across genders and creating an inclusive learning environment.

The findings of this study align well with the vision outlined in the National Education Policy (NEP) 2020. The policy emphasizes the need for extensive integration of technology in all levels of education, particularly in teacher education programs. NEP 2020 highlights platforms such as DIKSHA, SWAYAM, NISHTHA, and other government-supported portals as major tools for enhancing teacher capacity and quality. These platforms serve as rich sources of e-resources, offering teacher trainees access to a wide variety of educational content, professional development modules, and collaborative learning spaces. The NEP also stresses the need for equipping teachers and trainees with digital literacy, thereby fostering a culture of lifelong learning and adaptability.

Despite the positive findings, the study also brings attention to several challenges that hinder the optimal use of e-resources in secondary teacher education. Key barriers identified include lack of training in the use of digital tools, insufficient technical support, poor internet connectivity (especially in rural areas), and resistance to change among some teacher educators. Many trainees are not fully aware of how to effectively use digital libraries, online course platforms, or e-journals beyond surface-level interaction. These challenges call for a more structured and policy-driven approach to digital inclusion in teacher education.

One of the critical recommendations arising from this research is the need for capacity building programs aimed at increasing the digital competency of teacher trainees. Regular workshops, hands-on training sessions, and integration of ICT courses in the teacher education curriculum are essential to enhance both awareness and usage. Moreover, institutions should invest in upgrading their digital infrastructure and ensure that every trainee has equitable access to digital tools and content. Government and educational authorities should provide special support to rural teacher education institutions, enabling them to match the digital capabilities of their urban counterparts.

Another essential factor to consider is the role of teacher educators and administrators. Their attitude towards technology and their willingness to adopt and promote e-resources significantly influence the digital behavior of trainees. Therefore, sensitizing teacher educators about the pedagogical benefits of e-resources and training them in digital instructional methods will have a multiplier effect on the entire education ecosystem.

In terms of gender inclusion, the study suggests continued encouragement for female trainees to engage with e-resources and further supports the idea of creating gender-sensitive digital learning

spaces. Special initiatives such as scholarships for online courses, mobile learning campaigns, and female-focused digital literacy drives can further strengthen the participation of women in the digital learning environment.

In conclusion, the research validates the essential role that e-resources play in improving the quality and effectiveness of secondary teacher education. The findings reinforce the belief that e-resources are not just supplementary tools but are integral to modern pedagogical practices. When used appropriately, they enhance content delivery, foster creativity, promote collaborative learning, and prepare teacher trainees to meet the demands of 21st-century classrooms.

The study recommends that policymakers, educational institutions, and stakeholders work in coordination to ensure equitable access, adequate training, and the development of supportive digital ecosystems for teacher education. With the framework laid out by NEP 2020, there is a promising path ahead for integrating technology in teacher education in a meaningful and sustainable way.

Ultimately, achieving the goals of a digitally empowered teacher workforce will require a long-term commitment to policy implementation, infrastructure development, and capacity building. By addressing the existing gaps and capitalizing on the opportunities highlighted in this study, secondary teacher education in districts like Jamnagar—and across India—can be significantly enhanced through the effective and equitable use of e-resources.

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