

Dimension of E-Readiness in Teaching-Learning Perspectives: A SWOT Analysis

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ABSTRACT

In the current situation, E-Readiness has more vital of the teaching-learning process. It describes to the readiness and preparedness of teachers and institutions to effectively adopt and merge Information and Communication Technology (ICT) into academic practices. The present study, entitled "Dimension of E-Readiness in Teaching-Learning Perspectives: A SWOT Analysis," objectives to identify the various dimensions of E-Readiness in the teaching-learning process and to discuss a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of E-Readiness in teaching-learning context. This study highlighted five major dimension which is directly connected with E-Readiness. On the other hand, SWOT analysis is involved to assess the capability advantages and drawbacks of E-Readiness while find out the growing opportunities and possible challenges. this study qualitative and researcher collected data from the various journal, article, book and other important sources, ICT framework, training, and institutional strengthen can improve the effectiveness, flexibility, inclusiveness, and quality of digitally-enable teaching and learning process.

Keywords: E-Readiness, Dimension, SWOT Analysis, Teaching-Learning, Digital Era.

Introduction

E-readiness is a crucial aspect of the modern education system. In the educational context, it generally refers to the preparedness to conduct teaching-learning processes using Information and Communication Technology (ICT), access educational resources, and adapt to a technology-driven educational environment-readiness is a crucial aspect of the modern education system. In the educational context, it generally refers to the preparedness to conduct teaching-learning processes using Information and Communication Technology (ICT), access educational resources, and adapt to a technology-driven educational environment (Mosa et al., 2016). The Centre for International Development at Harvard University defines e-readiness as a capacity that enables the effective application of technology particularly in education to carry out various activities. According to Harvard University (2007), this encompasses the presence of adequate physical infrastructure, the integration of ICT into daily life, and a competitive tele-communications system (Mutula & Brakel, 2006)

The scope and demand for e-readiness in education are steadily expanding. The use of ICT plays a vital role in addressing the needs and interests of both teachers and students, thereby making education more effective (Muyambi & Ramorola, 2025). It assists teachers in creating participatory and engaging learning environments that cater to the diverse needs, capabilities, and requirements of all

students in the classroom. Simultaneously, ICT provides educators with access to various digital tools, teaching methodologies, and online platforms, making the teaching-learning process significantly more effective (Aidoo & Chebure, 2024).

Given the heavy reliance of the current education system on Information and Communication Technology, e-readiness holds immense significance (Lausa et al., 2024).

ICT fosters innovation and creativity among teachers, enabling them to present information, acquire knowledge, and enrich the overall learning experience (Ashikuzzaman, 2021). The digital transformation of education has reshaped the concept of teaching and learning while creating new avenues for communication between teachers and students (Salima et al., 2025).

E-readiness plays a pivotal role in education in several ways. Firstly, it mitigates geographical and temporal constraints, granting students access to diverse learning resources, digital course materials, and information repositories. Consequently, access to information and knowledge becomes easier, thereby contributing significantly to fostering equity within the educational landscape. Secondly, e-readiness fosters a mindset among teachers to acquire proficiency in modern, technology-driven teaching methods

(Abdullah et al., 2025). By utilizing various digital tools, online platforms, multimedia content, and educational software, teachers can make their instruction more effective and engaging. This enhances student engagement and makes the teaching-learning process more learner-centric (kumari, 2026).

Thirdly, E-Readiness enhances teachers for the future digital world. Technology-driven teaching methods can accommodate the diverse learning styles and needs of different students, thereby increase the likelihood of improved educational quality and learn outcomes (Warsi & Rani, 2004). In today's increasingly interconnected and technology-reliant world, the acquisition of digital skills and competencies has become a crucial educational objective.

Through technology-driven educational activities, e-readiness not only helps students navigate digital environments effectively but also fosters the development of critical thinking, collaboration, communication skills, and creative problem-solving abilities (Haleem et al, 2022). Similarly, E-Readiness boosts teachers' confidence in using technology, diversifies their teaching methods, and enhances their capacity to manage digital learning environments.

Therefore, the importance of e-readiness in the successful transformation and modernization of education in the current digital era cannot be overstated. Establishing an effective digital education system requires more than just technological infrastructure; it is essential for teachers and students to possess the necessary knowledge, skills, mental preparedness, and positive attitudes to utilize that technology (Valiyev, 2026). Thus, e-readiness among teachers is an indispensable component for ensuring quality, technology-driven teaching and learning in the contemporary education system (Deja et al., 2021).

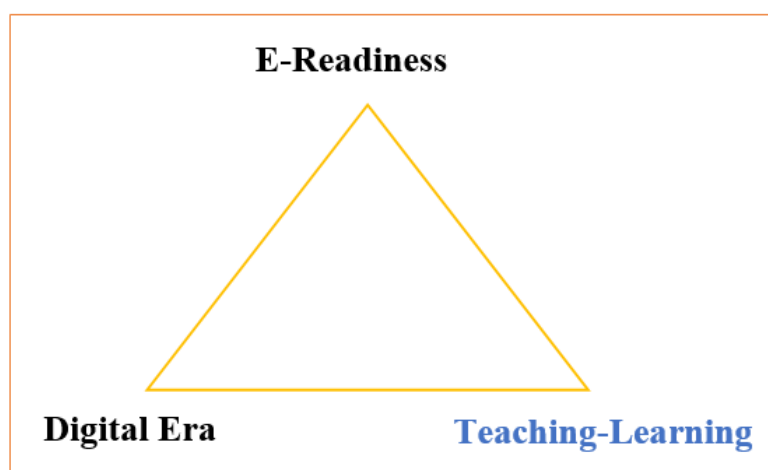


Figure 1: (Diagram - concept of E-Readiness in Education)

Need and Significant of the Study

In the context of current education system, 'E-Readiness' generally refers to the essential technical, psychological, organizational, and infrastructural preparations required for educational institutions to adopt, utilize, and effectively implement digital technologies (Timotheou, 2022). In the current digital era, the concept of e-readiness among teachers and students is highly relevant for the smooth implementation of the education system (Bhaumik & Priyadarshini, 2020). Without a comprehensive understanding of technology usage, achieving desired outcomes in the teaching-learning process remains difficult, even with advanced digital infrastructure. Therefore, it is crucial to identify the various dimensions of teachers' psychological and technical preparedness (Osmani & Tartari, 2020).

This research paper is significant as it systematically and critically identifies the various dimensions of e-readiness in area of teaching-learning process. Factors such as technically readiness, psychological readiness, infrastructural readiness, competencies in technology use, positive attitudes toward digital education, and the ability to adapt to evolving technologies can all influence the effectiveness of the teaching-learning process (Kadiyono & Pardosi, 2023). An integrated analysis of these dimensions can provide a holistic picture of the actual digital preparedness of teachers and students (Amemasor, 2025).

Furthermore, this paper incorporates a SWOT analysis. By examining the Strengths, Weaknesses, Opportunities, and Threats associated with e-readiness, the study analyses both the positive and negative aspects of electronic technology usage; consequently, it not only explains the current situation but also aids in future planning and policy formulation.

In the present Indian educational landscape, the National Education Policy (NEP) 2020 places significant emphasis on the effective use of technology, digital education, teacher training, and the overall enhancement of educational quality (report NEP,2020). Against this backdrop, gaining a realistic understanding of teachers' e-readiness is vital. The findings of this paper can assist in designing teacher training programs, facilitating ICT-based professional development, selecting digital teaching-learning materials, and formulating technological plans for educational institutions (Gu, 2025).

Needless to say, the significance of this paper lies in its structured analysis of the multidimensional nature of e-readiness along with its strengths, weaknesses, opportunities, and potential threats within the teaching-learning process. This approach enables the identification of gaps in the digital preparedness of teachers and institutions (Cambeses-Franco, 2026) thereby facilitating the implementation of appropriate training and developmental measures. At the same time, it can provide important guidance to researchers, teachers, education administrators, policymakers, and other educationists in building a highly technology-driven, inclusive, effective, and future-ready education system.

Objectives of the Study

- To identify the various dimensions of E-Readiness in the teaching-learning process.
- To discuss a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of E-Readiness in teaching-learning context.

Nature of the Study

By nature, this study qualitative and researcher collected data from the various journal, article, book and other important sources. Here researcher diagrammatically express the sources of data.

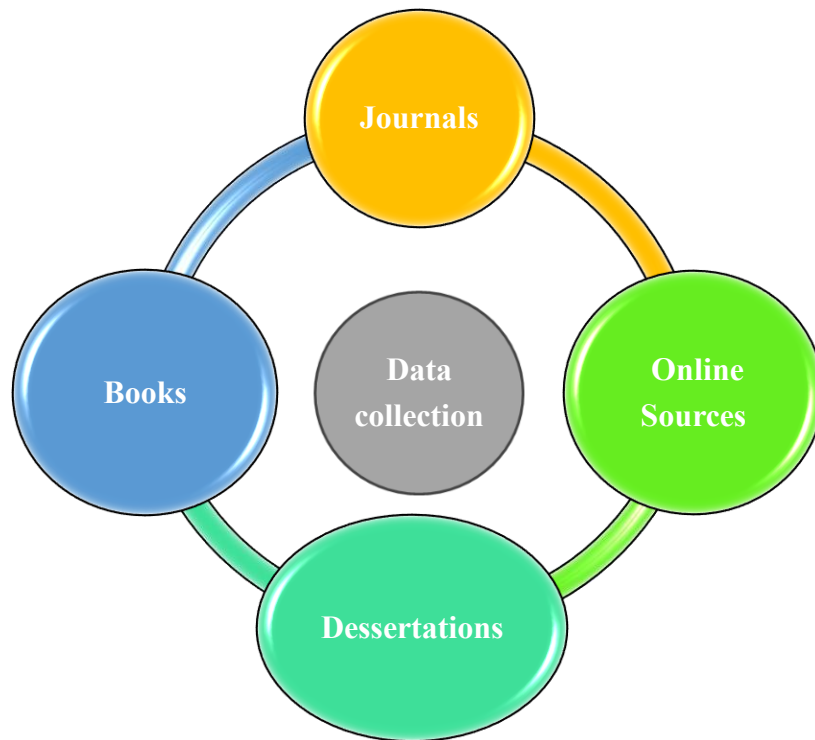


Figure: 2 (qualitative data analysis done by the including triangulation, analysis and SWOT analysis)

Objective Wise-Discussion

The objective no. 1 this research paper, a brief overview of discussion regarding the key dimensions that influence 'E-Readiness' within the teaching-learning process.

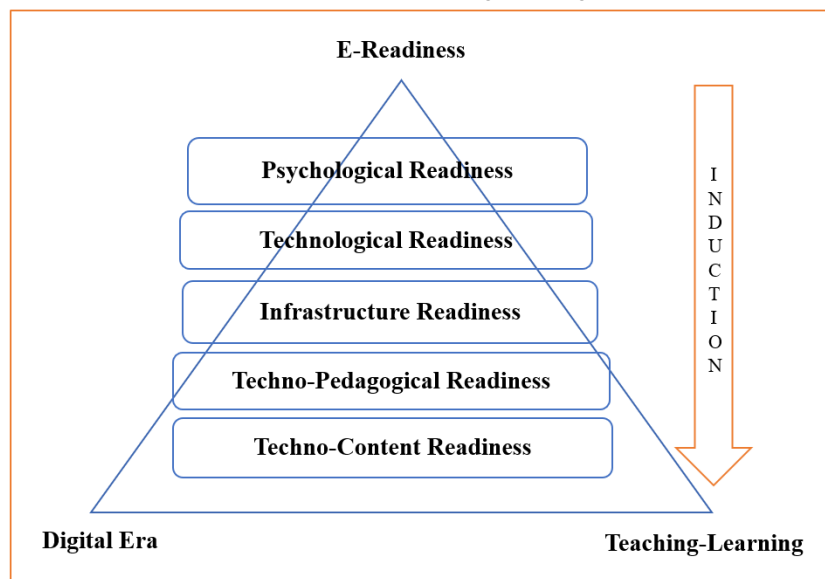


Figure: 3 (Diagram - Dimension of E-Readiness in Teaching-Learning)

- **Psychological Readiness:** This is most fundamental dimension of E-Readiness. It includes factors such as a teachers-learners need and interest, self-confidence, positive attitude, willingness to learn new technologies, and the reduce of techno-phobia (Mlambo et al., 2025). Even if a teacher is technically skilled, effective integration of technology into the teaching-learning process may not occur if they are reluctant or hesitant to use new technologies (Tallvid, 2014).
- **Technological Readiness:** Another vital dimension of E-Readiness. It includes the competency of teachers and students in utilizing tools such as computers, smartphones, tablets, the internet, projectors, digital platforms, and various software applications (Ahmad & Qureshi, 2024). Without technological competence, the effective use of digital educational materials is not possible.
- **Infrastructure Readiness:** is a crucial dimension. credible internet connectivity, power supply, appropriate digital devices, smart classrooms, computer labs, and necessary ICT facilities facilitate technology-driven teaching and learning (Amin & Jan, 2018). The availability of such infrastructure particularly in schools located in rural and remote areas significantly impacts E-Readiness.
- **Techno-Pedagogical Readiness:** It is vital for teaching in new digital realm. This dimension emphasizes on how digital technology can be merged into lesson planning, presentation, assessment, participatory learning, and student-centered teaching methods (Prakash, 2026). The objective of using technology is not merely to utilize digital devices in the classroom, but to improve the quality of education through technological means.
- **Techno-Content Readiness:** this dimension refers to teachers' competencies to searching, selecting and creating the teaching materials from using digital platform. The ability to identify and access authentic e-content is also an important component of this dimension (Kalita & Gayary, 2025).

In this way E-readiness, teaching-learning process is a multidimensional concept wherein technical skills, infrastructure, psychological preparedness, techno-pedagogical readiness, the ability to utilize techno-content readiness, and institutional support are interconnected (Palanisamy et al., 2020). This paper focuses that merely providing technology is insufficient to make the digital education system effective and sustainable; ensuring the overall e-readiness of both teachers and students is equally important.

Objective no. 2 this research paper is to discuss the extreme changes in modern education; in nowadays, smartphones, computers, e-content, digital learning platforms, virtual classrooms, and numerous educational applications have transformed the traditional concept of education. In this evolving environment, the technological ability, psychological preparedness, infrastructural facilities, and willingness to adopt technology on the part of both teachers and can be collectively regarded as 'E-Readiness' SWOT analysis provides as an effective framework for understanding the current state of E-Readiness within the teaching-learning process, enabling an analysis of its Strengths, Weaknesses, Opportunities, and Threats.

Table 1: SWOT Analysis of E-Readiness in Teaching-Learning

Strength	• The modern education system is learner-centric; therefore, the contribution of electronic devices is essential to making the teaching-learning process more engaging, and 'E-Readiness' will play a crucial role in this regard. • It is easy to quickly acquire various digital e-content materials online platform and present them in the classroom. • Communication between teachers and students becomes faster, while a spirit of collaboration grows between them. • Complex topics can be easily presented to students using multimedia, videos, animations, and interactive content. • It fosters a mindset among both teachers and students to utilize technology, while simultaneously enhancing capabilities for self-directed learning and information seeking.
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Weakness	• Due to individual differences, not all teachers and learners possess the same level of E-Readiness. • There is a lack of adequate ICT infrastructure in educational institutions, particularly in rural areas. • It is difficult to achieve e-readiness without resolving issues related to internet connectivity and network access in remote regions. • A lack of interest in adopting and utilizing new technologies is currently observed among some individuals. • There is a lack of sufficient training and technical support to address teachers' apprehensions regarding technology.
Opportunities	• NEP 2020 has promoted opportunities to enhanced technology-driven and digital teaching-learning. • AI, VR, AR, and other modern technologies are making teaching and learning more collaborative, interactive and effective. • It is feasible to enhance teachers' skills through online training and professional development. • There are opportunities to utilize quality learning materials via several e-learning platforms and Open access teaching-learning Resources. • Digital Initiatives <i>like DIKSHA, SWAYAM, PM eVIDYA, e-Pathsshala</i> Indian government programs offer opportunities to improve digital infrastructure in schools.
Threat	• The technological inequality can increase socio-economic and geographical disparities. • Complete reliance on online platforms poses a significant threat to cybersecurity and data privacy in the field of education. • If information found online is not used correctly or the results are inaccurate, misleading educational content can become a problem. • Excessive use of technological devices and screen time can negatively impact learners' attention spans and health and social issues. • Digital advancement can replace certain functions traditionally performed by teachers, while educational institutions are under constant pressure to adapt to emerging technologies

Educational Implications

- Ensuring the ICT training in Teacher Education institutions to enhance teachers' digital competencies and E-Readiness.
- Sufficient ICT infrastructure crucial for effective technology-integrated teaching.
- E-Readiness can improve the quality, usefulness and flexibility of the teaching-learning process.
- Teachers should educate to integrate technology with appropriate pedagogical methods.
- Government educational institutions should encourage the development and effective use of digital learning materials.
- E-Readiness supports the effective implementation of technology integrated learning approaches.
- Digital devices can help flexible and inclusive education opportunities for person with disability learners.
- digital tools assist the teachers to effective assessment, feedback, and monitoring of learning.
- To understand the teachers about cybersecurity, data privacy, and responsible technology use.
- Teachers E-Readiness reduce the digital gap between rural and urban schools.

- E-Readiness promote teachers to choose creative and learner-centred teaching methods.
- Continuous professional development is needed to keep teachers' readiness with educational technologies.
- S.W.O.T analysis much important to direct schools in strengthening E-Readiness by addressing weaknesses and threats.
- E-Readiness teachers and learners for the demands of a digitally driven educational environment.

Conclusion

Educational context, 'E-Readiness' is a matter of great importance. Rapid digital enhancement of the education sector is facilitating the effective conduct of teaching-learning processes. other side traditional educational methods, new avenues for digital education are expanding. Within this modern educational framework, the capacity of teachers, students, and educational institutions to utilize technology along with their mental preparedness, access to infrastructural facilities, and ability to effectively integrate technology into pedagogical practices is crucial. Therefore, E-Readiness should be viewed as a multidimensional concept rather than being limited merely to technical proficiency.

In general, e-readiness it is a continuous and dynamic process. Ensuring effective e-readiness depends a combination of enough ICT infrastructure, regular teacher training, the availability of digital resources, technical support, psychological readiness and adequate pedagogical strategies. Thus, through the concerted efforts of educational institutions, teachers, learners, and policy-makers, it is possible to create an inclusive, accessible, secure, and technology-enabled classroom environment. Therefore, E-Readiness Should be considered an as much as needed foundation for the technological evolution of present and future teaching-learning process.

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