

## ***Digital Learning in Rajasthan: Access, Impact and Challenges***

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### **Abstract**

*In India, digital learning has gained importance as a method of education due to the increasing acceptance of online learning platforms and digital technology. Also, geographical variety, socio-economic inequality and lack of infrastructure have considerable influence on the education system. The influence of online learning on education, especially access and learners' challenges while using digital learning platforms. The study discusses the advantages of digital learning in terms of continuity of education, wider reach of educational resources and more exposure to technology. The research also points out fundamental barriers such as poor internet connectivity, inequitable access to digital devices, lack of digital literacy and institutional preparation, particularly in rural and marginalized areas. The findings of this research mean that the education system in Rajasthan can be made strong by online education, but its efficacy is still not uniform due to the constant existence of structural and socio-economic challenges.*

**Keywords:** Digital learning; Online education; Digital divide; Learning Flexibility; Digital literacy.

### **Introduction**

Education has traditionally been viewed as a fundamental instrument for personal progress, societal advancement, economic expansion and empowerment in life. In recent decades, the fast

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development of information and communication technologies (ICTs) has affected the planning, delivery and access to education around the world. Online education, e-learning, and digital education are often used synonymously with digital learning. It has become an essential kind of education, extending learning outside the confines of traditional classrooms (Sangrà, A., et al., 2012). For a long time, India's education system has had to struggle with several issues such as a lack of skilled instructors, differences in facilities and urban-rural divides. In the education sector, digital learning has been advocated as a potential way to address these disparities by enhancing access to quality content and broadening learning possibilities (MHRD, 2020). Online platforms enabled the continuation of learning during Covid-19 after shut downs of the traditional classroom. They also showed inequalities in access to digital platforms, connectivity and digital skills (UNESCO, 2021). A significant proportion of Rajasthan's population lives in rural and remote areas, where access to trusted internet connectivity, digital gadgets and technological support is not sufficient. Digital learning cannot be viewed just as a technological change. It is in the larger social, economic and cultural realities that they are gradually accepting technology for education. Digital education is a challenge and an opportunity for many learners, especially those from rural and marginalized backgrounds. On the other hand, many issues such as lack of digital devices, poor network coverage and low digital literacy restrict meaningful participation in online learning (Khalid, 2025). This paper, by focusing on impact, access and challenges, seeks to present a balanced perspective that acknowledges both the potential and limitations of online learning in Rajasthan. The importance of this study lies in its regional focus. While several studies have examined digital education at the national level, Rajasthan specific analyses remain limited. Rajasthan's different socio-economic and geographical conditions make it an important case for understanding the realities of digital learning in India.

#### **Scope of the study**

The study focuses on new media access for education and how its impact, especially when examining learning and online education practices. While national policies and trends are discussed

in this study, the primary emphasis remains on their implications for Rajasthan.

### **Review of related literature**

The review of related literature provides a conceptual and contextual foundation for understanding online learning, studies across the global, national and state levels indicate that studies on digital learning have emerged as an important component of contemporary education systems. At the global level it highlights expanded access, promote learner autonomy and support flexible modes of education in relation to time and place. Selwyn (2017) argues that online learning environments can democratize education by reducing geographical barriers and starting lifelong learning. Online education has gained momentum due to increased internet diffusion and government-led digital initiatives (Dubey, 2024). The pandemic has been termed a watershed moment in the education sector (Dhawan, 2020), where digital platforms were adopted at a rapid pace for learning purposes. Rajasthan's large rural population shows that digital learning initiatives face challenges posed by infrastructural barriers and socio-economic inequalities (Khalid, 2025). The gaps identified in the reviewed literature on digital learning also justify the current study. There are many studies on online education at the national level, but there are very few studies in Rajasthan on its impact, access and challenges. Studies that synthesize policy perspectives, academic insights, and ground realities to offer a holistic understanding of digital learning in Rajasthan are needed.

### **Research methodology**

This study adopts an explanatory research design, which is appropriate for understanding complex social phenomena where the aim is to explain relationships, contexts, and underlying conditions rather than to measure variables numerically. The process of digital learning in Rajasthan is explored in terms of its technological, social and economic influences.

### **Access, impact, and challenges of digital learning in Rajasthan**

#### **Access to online education in Rajasthan**

Access is geographically extensive and socio-economically diverse. Access to online platforms is not just about the physical

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availability of digital tools but also it includes connectivity, affordability and digital skills for using them. Unequal access to digital tools directly determines the learning outcomes and participation in online education systems (Selwyn, 2016).

#### **The following are the key dimensions:**

- i. **Digital infrastructure availability:** BharatNet project started internet expansion nationwide (DoT,2026). In Rajasthan, digital infrastructure has been slowly evolving. However, digital infrastructure expansion is not equal across Rajasthan; some cities like Jaipur, Jodhpur and Udaipur have higher internet connectivity, whereas rural areas and desert areas like Barmer, Jaisalmer, Jalore, Banswara, Dungarpur and Bikaner are still suffering from poor internet connectivity and infrastructure (TRAI, 2023).
- ii. **Network stability & internet connection:** A stable internet connection is crucial for accessing online education. Many rural areas still do not have broadband connections and they only depend on mobile data (Murmu,2025). Network instability, constant interruptions and low bandwidth are common issues in rural households and remote areas of Rajasthan.
- iii. **Device ownership and sharing habits:** There is still unequal access to devices like smartphones, tablets, or laptops. In many rural and economically weaker households, they have only one smartphone in home, which is shared among multiple family members, reducing effective learning time (ASER, 2022). This common access concerns particularly students of higher education and those who are preparing for competitive examinations.
- iv. **Affordability in the economy:** The cost of data packages, devices, and paid online learning platforms are frequent barriers for students who are from lower income families. Research has indicated that there are hidden costs that hinder continued engagement even with the availability of free platforms (Patil, 2021). Before and after Covid-19, there has been a drastic gap between internet usage and digital learning.

- v. Digital literacy & skills: In Rajasthan, people who have not connected with the digital world are generally unaware of digital tools. "Required digital skill" means someone who knows about how to use digital tools and devices; the ability to use them is called digital skill. Without learning digital skills, usage of learning management systems is challenging (MHRD, 2020). Lack of skills to access new media makes infrastructure meaningless.
- vi. Government initiatives: Government initiatives for providing better education for all in Rajasthan, such as the Rajiv Gandhi Career Guidance Portal, under this initiative provide e-learning content for Rajasthan State Open School (RSOS), which has increased accessibility of digital platforms. However, the lack of digital awareness is an obstacle to effective utilization of online platforms (Maharshi, 2023).

#### **Impact of online education in Rajasthan**

The growth of online education has a deep impact on education, socially and economically. Some areas are impacted by using the internet in many cases, such as education continuity and reach extension, learning flexibility and much more.

The following are the key areas:

- i. **Education continuity:** During Covid-19, the closure of schools and colleges made online education an important part of academic continuity (Patil, et al. 2025). The higher education institutions of Rajasthan adopted platforms like Google Classroom and Zoom for carrying on the teaching-learning processes (UGC, 2021). This way of teaching and learning adoption became an alternative after Covid-19. The online education is best for learning and skill development in distance mode.
- ii. **Increased education reach:** Online education provides learning opportunities for remote area students. Learners who had previously limited access to digital contents, now can access the recorded lectures and digital materials (UNESCO, 2021). With the shift of teaching and learning on digital platforms, online education reach has arrived in villages and remote areas

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where internet connection is available, benefitting many students.

- iii. **Learning flexibility:** Online content is also asynchronous, allowing students to learn at their own pace. This flexibility is a help to those students who are preparing for competitive exams along with their regular studies (Dhawan, 2020). In Rajasthan, many students who are living in villages; want to learn new skills or get more education but are unable to do so due to many reasons, such as working as farmers. So, time and space flexibility is beneficial for these types of curious students.
- iv. **Exposure to a diversity of learning resources:** Students are exposed to national and international learning platforms such as SWAYAM, MOOCs, and educational channels on YouTube (Akhan, 2023). This exposure has expanded academic horizons beyond the local curriculum. Canadian media theorist Marshall McLuhan (1992) coined the term "global village"; this term fits in the online learning era; the internet is playing a key role in this connectivity.
- v. **Skill development and digital literacy:** The regular usage of online learning platforms by the students has improved their digital efficiency, such as the search for content, online communication and basic technological skills. These skills are increasingly important for employability nowadays (World Bank, 2020). Online learning platforms are helping to develop skills at one's pace. In the era of AI, digital literacy is more important as it is becoming part of developing technology. It helps to know how to use the new media for one's own benefit and how to check misinformation.
- vi. **Reduction of geographical barriers:** Online education has reduced the dependency on physical proximity to educational institutions. Students from rural Rajasthan can now listen to lectures by faculty located in metropolitan cities (Selwyn, 2016). Online education is the alternative way of learning, for academics or preparing for any competitive examination. Students can get education despite geographical distance. That means nowadays there is no barrier to get quality education.

### **Challenges of online education in Rajasthan**

Despite its positive impact, online education in Rajasthan faces several structural and socio-cultural challenges. These challenges often intersect with issues of access and equity.

#### **The following are the major challenges:**

- i. **Digital divide:** The digital divide between urban and rural areas still remains a main challenge because of the differences in internet and electricity connectivity, device availability, and lack of digital literacy, which continue because of educational inequalities (van Dijk, 2020). To fulfil or reduce this gap, the need is for awareness of how to use digital tools for one's needs (Pundir, 2025).
- ii. **Language and content appropriateness:** Language is a major barrier to communication in either digital mode or face-to-face. If content isn't available in the regional languages, then even if it is of the best quality it will not benefit the locals who understand only the local language; hence, never use this type of content. Mostly online content is in English, which limits the comprehension of students who are from the Hindi-medium backgrounds. The lack of local and regional language content adds to the ineffectiveness of learning.
- iii. **Low student engagement levels:** Student engagement depends on interest in using the content and its relevance for the students. Sometimes the content is relevant but the engagement is low due to health and technical issues. Research finds that online classrooms have lower participation levels than traditional classrooms (Dhawan, 2020).
- iv. **Issues in assessment and evaluation:** Online assessment raises issues of academic integrity, fairness and reliability. A robust digital assessment framework is not available in many institutions in Rajasthan (UGC, 2021). The major reason is a lack of knowledge about this skill to evaluate on screen. Also, lack of proper training or digital literacy.
- v. **Teacher readiness and training:** In Rajasthan, there is a lack of digital-skilled teachers. This is a major challenge in

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using new media tools in classrooms. Opportunities for professional development are limited in effective pedagogy in virtual environments (Koehler & Mishra, 2009). One factor identified is that teacher readiness is related to interest in using online education.

- vi. **Socio-cultural barriers:** History of Rajasthan has proven that it is culturally and socially rich. In some rural and remote areas, there are still limitations, especially for girls, on access to personal digital devices and study time because of household responsibilities and social norms (ASER, 2022). There is a gap in women's empowerment, in urban areas with mixed cultures and rural areas which bars using digital devices at home for online education.
- vii. **Health and mental issues:** Health and mental well-being are both major issues while using digital devices because there is only a screen. Prolonged screen time, social isolation, and lack of peer interaction have raised concerns about students' mental well-being and motivation (UNESCO, 2021). Long time is spent on screen, which is also a cause of vision effects. Mental health related issue concern things such as, unnecessary scroll, information overload etc.

### **Discussion**

The discussion of online education shows interaction between access, impact and challenges, rather than a linear success digital environment or failure narrative. An access to the internet for digital education, the unequal distribution of digital infrastructure that highlights technological availability alone does not ensure educational inclusion. Although national-level initiatives such as BharatNet and state-supported digital platforms have improved connectivity in selected regions, in large rural and desert areas within Rajasthan, access to the internet remains highly location-dependent. The impact of online education, appears significant in terms of educational continuity, flexibility, and exposure to diverse learning resources in a digital environment. Online platforms enabled institutions to maintain academic engagement during the pandemic and expanded learning opportunities beyond physical classrooms. Students with stable

connectivity, personal devices, and prior digital exposure experience get greater benefits, while others face many challenges while learning. Murmu (2025) describes that this unequal impact reflects the fact of educational inequality through digital means due to lack of digital awareness and infrastructure. The challenges in online education are not only of technical aspects but also socio-cultural and pedagogical aspects. Issues such as language barriers, limited teacher preparedness about digital platforms, and lack of student engagement indicate technology cannot be a substitute for contextualized teaching practices. The lack of region-specific content reduces comprehension and participation among many learners. The discussion suggests that the functions of online education are more effective as an alternative mode of learning rather than a complete replacement for face-to-face learning or the traditional classroom model.

### **Conclusion**

The study concludes that online education in Rajasthan presents both opportunities and challenges in the changing face of online education in the digital era. The analysis of access, impact and challenges suggests that although online education has extended learning opportunities, its benefits are still distributed unequally across regions and social groups. However, online education's positive impact is tied to pre-existing socio-economic advantages, limiting its role as an equalizing force in education. Online education in Rajasthan should be considered as an educational support system, not a complete solution. To improve the effectiveness of online learning, it is important to strengthen the digital infrastructure, promote digital literacy, develop localized content and invest in teacher training, also develop a blended learning approach to provide a more sustainable pathway for integrating online education into the broader educational system.

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