

Challenges and Opportunities for Online Learning in India

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Abstract

Today's digital world demands more effective learning models that allow students to actively participate/enrol in their education. Digital technology is influencing the way the instruction is delivered as well as the way the information is discovered and shared. Recently, the adoption of internet and mobile learning technologies have changed the traditional perspective of education. In India, e-learning could be the viable solution to provide education in the context of 21st century. Effective mobile and e-learning applications can be developed by conducting an analysis on the use of mobile devices and applications in online education. Despite numerous initiatives to promote the use of mobile learning for education, there are some issues that must be addressed. By considering the sudden shift towards online teaching in the rise of COVID-19 pandemic in India, this study summarizes the research findings of mobile and e-learning technologies to avoid potential complications with the implementation of this technology during any future pandemic situations in India. The proposed study also assists in understanding the current state of mobile learning technology adoption in India.

Keywords: Mobile learning, E-learning applications, Mobile devices

1. Introduction

The modern education urges for a collaborative, cooperative, productive and personalized teaching as well as learning experiences, which have the potential to reshape the conventional education system from a traditional classroom environment to a technology driven open source learning environment. This educational paradigm shift has a primary focus on improving the potential and creative thinking of the learners in the best ways possible, and moreover focuses on, offering equal opportunity for education, ensuring equity, timely delivery of the appropriate educational content based on the requirement, and engaging learners

through via innovative learning practices with the recently developed online learning technologies. Online learning seems to be a new paradigm of change and also a solution for establishing educational practices anywhere and at any time [1].

In contrast to traditional education, online/mobile learning has extended its scope towards developing new learning opportunities based on the concept “Learning using Personal Devices”. Students have slowly started to use the digital/mobile learning platforms such WebEx, Google Meet, Zoom etc. This technology helps them to get learning opportunities globally and assist in requirement based training.

The rise of internet and social media platforms for educational purposes has established a new way for students to interact with their teachers directly and also to discuss about different ideas with their peers [2]. Recently, many research studies have analyzed how online learning has transformed the education field by mentioning its significance and challenges.

2. Role of Mobile Devices in Education

The usage of mobile devices is increasing faster than the worldwide human population. This unprecedented increase contributes to increasing the practice of mobile learning using the portable digital gadgets. The mobile devices based learning innovation has gained a significant importance in the growing educational research. The annual reports of digital gadgets usage by Cisco predicts that the smart phones will have the fastest growth trend until 2023 [3]. The usage of mobile devices especially smartphones increases by 2% annually. This increase states that more than 75% of global population will become smart phone users by the year 2023.

The usage of mobile devices in education [4] will allow the students to enhance their way of knowledge acquisition. In this rapidly evolving world, government, teachers, students and education institutions should utilize digital technology as a learning/teaching aid to make the students achieve their career goal amidst any unfavourable situations.

In 2016 [5], researchers have utilized the online learning practices for providing psychology therapy. The research study has highlighted the significance of delivering online counselling and how it extends the opportunities to connect people rather remaining just an alternative for traditional face-to-face interaction. Further, in 2018, Hass et al., [6] has surveyed the learner’s perception on both traditional learning and classroom learning in USA. The survey

has clearly contrasted the traditional and online learning students based on their willingness and proposed a hybrid blended learning model.

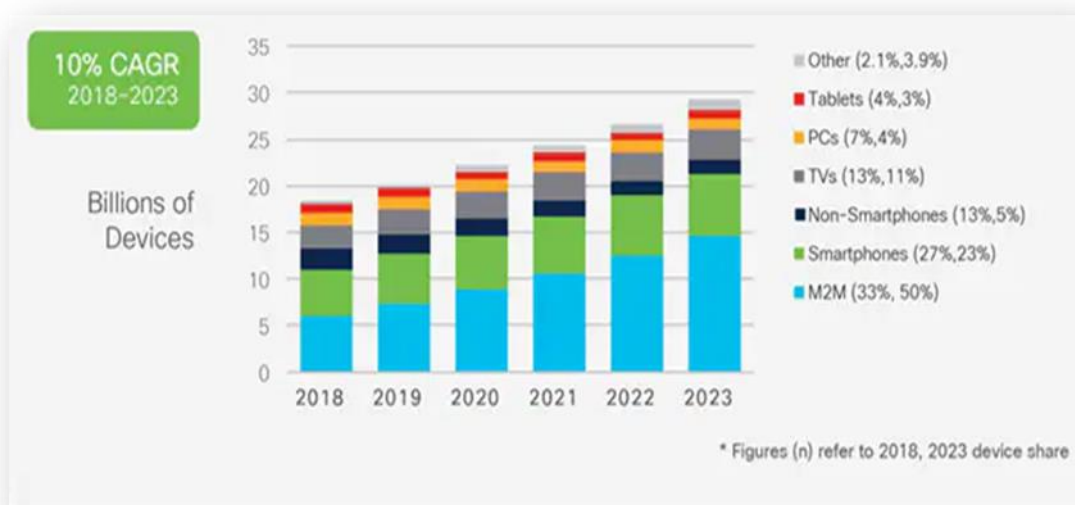


Figure 1. Cisco Annual Report on Digital Device Usage [3]

Due to the sudden outbreak of Covid-19 pandemic situation across the globe, the role of online/mobile learning has suddenly increased at an unprecedented rate [7]. This situation has also made the researchers to experiments with the different learning strategies like collaborative, cooperative, transformative and constructive learning practices. Moreover, adopting an accessible and affordable technology has become the need of the hour. The greatest challenges faced during the pandemic situation in a developing country like India is the sudden transition to online learning. In 2020, Davis et al., [8], has experimented the implementation of the transformative learning approach for student level. From the results, it is evident that the learning model has eliminated the students' anxiety on completing the academic classes and assignments amidst the pandemic situation. In order to cope up with any further pandemic situations, a continuous research effort should be made by exploring the opportunities in enabling flexible ways to deliver education online. As a result, the National Institute for Open Schooling in India is currently continuing to deliver the educational ideas and academic practices online.

For this pandemic hit scenario, using online/mobile learning technology in the teaching and learning process would be a more natural and effective way of learning. By using modern

educational methodologies, almost all educational content will become an easily understandable concept. An immersive experience that visually exemplifies how independent variables connect/interact in a conceptual framework and scientific models will undoubtedly improve the teaching methodology [9]. These online/mobile learning aspects correspond to the characteristics and features of mobile devices. Mobile applications are a simple tool that has the potential to enhance the traditional educational practices followed in India. As the mobile phones are combining the playback functions in both audio and video format, the utilization of sensors, gyroscopes, GPS has made the learning practices more ubiquitous, mobile and flexible [10].

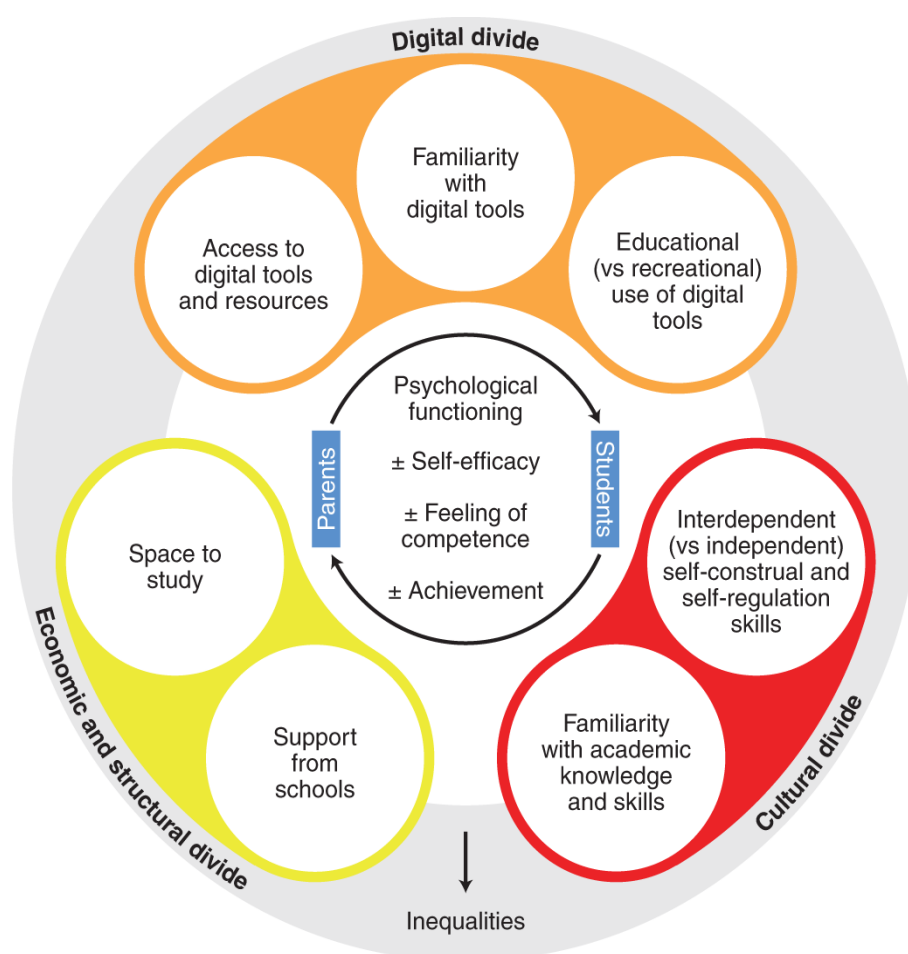


Figure 2. Online Learning during Pandemic [10]

3. Analysis of Significant Progress and Challenges in Online Learning

For analysing the current trend in online learning, the research strings “Online learning”, “Pandemic Learning”, “Students in Covid-19”, and “Mobile Learning” were used to

search the literature and the following significance, advantages and challenges have been reported.

Table 1. Advantages of Different Online Learning Characteristics

Domain	Sub-Domain	Advantages
Adaptability	Remote Learning [11]	Useful in delivering lectures in Covid-19 situation
	Ease of Use [12]	Ability to comfortably listen to the lectures
Student-based learning	Accessibility [13]	Easily access the lecture content online and connect with the lectures
	Active Learning [14]	Enables students to actively participate in any discussion from any place
	Asynchronous Learning [15]	Enables students to learn at their own pace with the lecture recordings

Table 2. Limitations of Different Online Learning Characteristics

Domain	Sub-Domain	Limitations
Efficiency	Skill based Learning [16]	Inability to provide hands-on practice
	Attentiveness [17]	No Case based Learning
	Resource Availability [17]	Non-availability of internet and suitable gadgets
Integrity	Assessment [18]	Difficulty in establishing individual assessment
	Proctoring/Plagiarism [19]	Difficulty in monitoring the students' practice session, and non-availability of suitable plagiarism software to check student assignments online.

The learning environment, synchronous and asynchronous learning, formal/informal learning, constructive and transformative learning, teaching resources, accessibility, flexibility, and portability are the general areas to be considered while focusing on online learning. The significant challenges associated with developing online platforms and mobile applications for learning in India are advanced mobile application/meeting platform design, data accessibility to teachers as well as educational institutions.

These generalizations are obtained by integrating various advantages and characteristics of online platforms and mobile devices to teachers and students [20]. The summary and analysis of various challenges, issues, and requirements that arise due to the deployment online/mobile learning technologies are listed below [21-23]:

Table 3. Summary of the Challenges of Online Learning in India

Research Area	Online Learning Challenges
Technological perspective	Connectivity challenges, internet/network access speed, cost, security, trust & privacy
Learning perspective	Advanced technology based infrastructure, digital data security, proctoring
Application perspective	Real-time user experience, mobile educational content design, instructional design
Educators' perspective	Understanding difficulty, user discomfort, increased workload, technology upgradation
Students' perspective	Resource availability, cost, device accessibility, usability

Table 4. Summary of the Opportunities in Online Learning in India

Research Area	Online Learning Opportunities
Asynchronous Learning [15]	Attractive learning, self-learning, informal learning, convenient, participation

Collaborative Learning [24]	Project based learning, interactive sessions, student-to-student and teacher-to-student communication
Motivational Learning [22]	Interesting learning modules, learning with satisfaction
Learning Environment [16]	Connectivity, multi-learning, conceptualized learning, lifelong learning, learning with integrity
Mobile Learning [4]	Portability, affordable learning, accessibility
Student's Perspective [21]	Active participation, motivated learning, remote learning, students cooperation, collaboration, and coordination
Technological Perspective [18]	Service-driven architecture, learning process enhancement, open access educational platform, speed, high-quality immersive learning environment
Availability [16]	Unprecedented ubiquitous access to data, learning encouragement, localized learning, participative learning spaces, session recording advantages

4. Conclusion and Future Work:

The mobile/online learning technologies make students as the primary focal point in the teaching-learning process, while considering educator/teacher as the only gateway between the learning content and knowledge. It is obvious from the performed research study that the online learning technology has allowed the students to gain multi-learning capability and actively participate in the self-learning process. Despite the challenges present in online learning technology, different research initiatives have been taken recently to make mobile learning as a part of the next-generation education model. Moreover, from this study it is evident that, in near future the mobile learning will move from being an option to a necessity. Online learning will help the students as well as the teachers to gain the multi-tasking capability. The deployment of online learning practice in India must be carried out by considering all the factors such as educators, institutions and students. The mobile learning technology should be incorporated in such a way that the users can directly use the online

learning applications without reading or going through any instructions. The mobility, flexibility, and adaptability functions should guide the key players in educational area, the students and teachers to solve diversified challenges in online learning environment based on their requirement. Future research work should remain more focused on designing the online learning content, which should increasingly support education. More research efforts should be initiated in integrating the online learning module in the formal education practices. In the near future research, the online learning research should be more focused on its societal impact, ease of use, affordability and utilization of more personalized demographic information.

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Author's Biography

Jennefer K Shanthini has two years of teaching experience at Jain (Deemed-to-be-University) and Jyoti Nivas College Autonomous, Bengaluru. She has 3 years of experience in the Industry (Deutsche Bank India). She started her career as a project analyst at a German multinational investment bank and financial services company. She is pursuing a Ph.D. She is a research scholar in the Department of Management, at the University of Mysore. Her extensive research and her specialty is entrepreneurship. In total, she has published two research papers in the fields of Tourism Management and Entrepreneurship. Of these, in June 2020, she published one of her articles in the UGC CARE listed journal. In July 2020, published an article in the International Journal of Creative Research Thoughts. A paper was presented at the International Conference of Research Education Solution.