

## Digital Learning in the era of 21st century: An Analysis on its Opportunities and Challenges in India

*Priyajit Ray,*

*Research Scholar (JRF), Depart.Of Commerce, University of Calcutta, (Kolkata) India.*

*Email: [raypriyajit11@gmail.com](mailto:raypriyajit11@gmail.com)*

### ABSTRACT

*There has been a rapid change in technological advancement in the past few decades all over the world and so does the education sector and its medium of learning is changing. Digital learning and e-books are replacing the traditional physical mode of classroom teaching and learning. The use of information and technology in learning makes it more transparent and scalable which transforms skill based knowledge to the learners which is helpful for their practical knowledge. The government is doing enough to transform our country into a digital hub by promoting not only via digital India campaign but also in any other way possible, and for that digital literacy along with digital education and learning is very much essential. In this context, the researcher has attempted to study the opportunities and challenges of digital learning and also how far the virtual learning mode has developed in our country to better understand the structure of such futuristic learning in our country in the recent scenario. The study reveals that the nation's education sector is evolving and will touch new heights in the era of digital revolution and therefore digital learning should be used judiciously for the overall development of our economy along with the education sector.*

**Keywords:** *Technological advancement, digital learning, transparent, futuristic learning digital revolution.*

### INTRODUCTION

The way in which a nation can evolve and develop over the time is via learning and education. Over the years, the education sector has gone through severe revolutionary changes



and learning has changed a lot and for that the government has also played its part. If we look at the 20<sup>th</sup> century, teaching and learning was emphasized on conformity and compliance rather than creativity but now it is bit different mainly because of the development of Information and Communication Technology (ICT) over the years. The 21<sup>st</sup> century is the stage of fourth industrial revolution stage of the era of digital revolution which has undergone revolutionary changes from businesses to industries and every sector where the education sector is not left behind. The technological advancement is not restricted to only few sectors but it has affected life of every individual in every way possible and the teaching and learning too cannot remain immune from the technological advancement. The advancement of Massive Open Online Courses (MOOCs) for the digital learners has also made significant changes in the use of technological innovation in online education, and digital learning which has not only increased the scope of learning among the young aspirants but has also lead our country towards digital India.

In today's generation, teaching and learning is no longer restricted to traditional classroom in an university, college or school but now it be accessed anytime and anywhere in the world via digital tools just because of the development in information and technology. As because of the development in technology, the traditional mode of chalkboard teaching is getting replaced by the online whiteboard mode, and the printed books are being replaced by the e-books. There is no face to face interaction in a digital mode of learning which is one of its disadvantages but the generation is such that the young aspirants are accepting technology easily. The mode of digital learning has taken the teaching and learning process into a new zone and with the globalization in technology, the education sector will undergo tremendous in near future. Learning with the help of technological tools is considered as one of the most promising development in education but the futuristic education will tell how far the sector has evolved for the overall development of the society. Learning in digital mode has got its advantages and opportunities for the teachers, educators and the learners but the drawbacks and challenges also come as a force. The analysis of the opportunities and challenges in digital learning will help the educationist to understand the trends in pedagogy of education and will also help to analyze the



quality in the teaching and learning process for the better benefit of the learners and the education sector as a whole.

## **REVIEW OF LITERATURE**

The researcher has gone through some of the notable existing literature review in the concerned area for the identification of the research gap.

Dutta, I. (2016) identified that the higher education of our country is plagued with several definite challenges like the poor infrastructure asking with the poor quality of teachers, poor libraries, and poor educational materials and resources. The study reveals that the ministry of higher education and the government of India are doing their best to come up with various policy and schemes for the overall development of the higher education but still much work is needed to be done for the benefit of the learners.

Fleck, J. (2012) studied the development and nature of blended learning in our economy and it was found that such type of learning will become more prevalent in near future and the face to face mode of teaching and learning will be replaced by the online mode of education. The researcher also found that the web based learning materials and resources will replace the traditional printed library books and resources.

Pattnayak, J., & Pattnaik, S. (2020) elaborated about the scope of digital learning and how it can boost up the economy in a smart way. The researchers studied that e-learning must be embedded in knowledge management and its environment to adopt the framework of digital learning in every sphere of the country. Further the paper says that to become smart or digital India; digital learning along with digital knowledge in a digital environment is very much needed in this era.

Rajesh, M., Nair, S. P., & Jalaja Kumari, V. T. (2018) focused on the open and digital education system in our economy and found that such type of education system and its infrastructure is bursting which is possibly due to the burgeoning pressure of demands on it. The study further found that the slow assimilation of information and communication technology create too much pressure on the open education but the substantial internet penetration in India will definitely



give an upper hand to affect the technology driven growth in high quality education in our economy.

## **RESEARCH GAP**

The research gap is observed based on the extensive review of literature stated above. The researcher has found that there are minimal such research work undertaken in the field of digital learning, that is not enough for gaining an in depth knowledge and its view regarding the opportunities and challenges of such education in near future for the learners and how far it will change the dynamics of the education sector and will have a definite impact on our economy. It was considered as a major research gap by the researcher and also has a social significance based on the future learners in the economy. Therefore, the researcher choose to fill up the research gap by conducting a analytical, explorative and descriptive research study by fulfilling the concerned research objectives as mentioned below.

## **RESEARCH OBJECTIVES**

Based on the above stated research gap, the researcher has identified the following research objectives to be achieved through this study by fulfilling the research gap.

1. To identify the opportunities of digital learning in the current era for the overall development of the learners in our economy.
2. To identify the challenges of digital learning in the current era for the overall development of the learners in our economy.
3. To know the role of the policy makers and educationist for the development of the education sector in the current and coming scenario.

## **RESEARCH QUESTIONS**

Based on the above stated research objectives, the following research questions have been extracted by the researcher.



1. Does there are opportunities of digital learning in the era of 21<sup>st</sup> century for the overall development of learners in the economy?
2. Does there are challenges of digital learning in the era of 21<sup>st</sup> century for the overall development of learners in the economy?
3. Does the policy makers and educationist play a crucial role for the development of current and futuristic education sector in our economy?

## RESEARCH METHODOLOGY

The study is based on secondary sources of information and it is descriptive and explorative in nature. These secondary sources of available information was collected from various news reports, working papers, published information and research works. Information from various websites have also been conducted to fulfill the above mentioned research objectives and to answer the research questions which will give the educationist and the learners a better prospect about its futuristic learning outcomes. The relevant information regarding the study was collected at first by the researcher and then the available information was analyzed clearly and conceptually to come at a conclusion about the opportunities and challenges of digital learning in the current scenario and how the policy makers are going to play a crucial role for the educational institutions of the country. Based on the conclusion, several recommendations was also put forwarded by the researcher which aims to develop the educational sector of our country and the overall growth and development in process.

## ANALYSIS

Digital learning is one of the bases of learning with the help of technology. Currently, at the age of digital revolution students are getting access to such modern generation equipment in learning which is ultimately helping them in their studies and will be helpful in future. The technological advancements that take place in years is no longer restricted to few of the selected business entities or research bodies but it has lead its way out towards educational institutions. Everything we use today is based on technology and the development in technology especially in a few decades has been unthinkable. The education institutions are too dependent on technology in



current times and it is estimated to develop in the coming future as well which will make digital learning popularly acceptable among all the learner centric young generations. The enhancement of learning should be continued be it in any medium or platform, be it digitally or physically. The education sector has changed a lot in the 21<sup>st</sup> century and the potential opportunities of learning in digital mode are as follows:

- The use of information and technology in learning will enhance the teaching and learning experience both for the teacher and students and it will enrich the experience in learning in a new way. The new way of learning via digital mode may be found interesting by the young learners to learn and gain knowledge.
- Digital learning is accessible anytime, anywhere and anyplace possible which saves the potential time of the learners. Learning can be accessed suitably at a time when the learners want to learn and gain knowledge accordingly.
- The introduction of internet and World Wide Web paved the way to record video lectures and upload it in digital mode which can be streamed and accessible in need anytime and anywhere. It reduces the constraints of the disadvantaged poor students since the same digital resources is available for all the students be it rich or poor and it is justified equally to everyone while learning.
- Digital learning improves and enhances students and parental engagement while learning which enhances teacher's compliance with the parents and that will ultimately lead towards behavioral changes and involvement in learning among the educators.
- The evolution of technology and digital learning has made the students tech savvy from their early childhood age which will make them effective in technology and will improve their early learning skills and literacy especially in information in technology. Early learning is very much needed among the young aspirants and the modern day digital learning aided with technology can be effective among the young learners.
- Digital learning provides an innovation enriched course and curriculum that will provide an enhanced learning opportunity among the learners which also mitigates inequality



among the learners and it give access to materials to such undeserved learners who otherwise may not have access to learning.

- The technology aided digital learning could possibly enable teachers to better reach the learners especially those who are poor and weaker in academic performances. Advancement in technology and artificial intelligence helps the teachers to identify where the weaknesses of the students are and how the performance of the students can be improved.
- Digital learning helps to personalize learning in an effective and efficient way where the teachers can target the category of students that they want to teach and send efficient materials. Digital equipment and tools improves the presentation skills of the students which thereby help in brainstorming, innovation and research.

Digital learning provides universal access to quality and innovative learning in the sphere of education. In the era of technological innovation, digital learning is essential for the future and for the betterment of the educational structure of our economy. With the advent of 5G technology in our country we can also assume that such learning will be accessible at the next level by our learners. Despite its opportunities and strengths, digital learning does have some challenges and limitations, which are elaborated as follows:

- Teachers and students needs to be digitally knowledgeable to work effectively and efficiently in an virtual learning environment. The teachers need to be accustomed with the internet along with the technological tools while teaching which is one of the major challenges in digital learning, and it is especially for the teachers.
- Digital learning keeps the time management among the students pretty well since they can learn whenever they want to but such type of learning can take off the speed of learning as they may think they are relaxant to study and learn whenever they want to but they actually may get delayed in that process.
- Lack of teacher and student face to face interaction is one of the major problems of digital learning where there is no physical connection among them and the teacher is unable to connect with each student is a major drawback of virtual classes. There is



hardly any room for discussion and that real time learning experience is missing in digital learning.

- Digital literacy is very much needed in a virtual learning environment, but the challenge is that digitally challenged individuals including teachers and students who have lack of accessibility to digital medium and tools may face the problem while learning digitally.
- In digital learning, there is no teacher or even parents to look after the student's behavior while learning in such an environment. The learners may even skip classes or not concentrate on their learning which was not possible in physical mode of classroom.
- The life cycle of the digital medium and tool is short for the learners which help in preparation for a short span of time and it is also not suitable for practical learning. Since real time experience is missing in digital learning, practical classes are not compatible in such learning.
- Measurement of output of the learners is difficult in digital learning rather than the physical classroom. Direct face to face interaction is the key to fulfill the gap between teachers and the students while learning which is missing in digital learning and it is the major setback compared to physical mode of learning.
- Another challenge of digital learning is that all the students do not have access to proper technology and digital tools. Technology is taking the level of education to further heights but there are lots of poor and disadvantaged group of students who are not capable of learning in a digital mode of education.

To make everyone under the folds of digital learning is moving one step forward towards digital revolution. There are challenges as well as opportunities of digital learning but such learning is the need of the next generation where technological advancement is changing rapidly. The policy makers and the government is also doing their part to make digital learning accessible and affordable to all learners. Therefore, we shall discuss some of the leading digital learning platforms designed by the government:

- **SWAYAM:** SWAYAM is the acronym for Study Webs of Active-Learning for Young Aspiring Minds, which is a Massive Open Online Course (MOOC) platform. The essence





of digital learning is delivered by MOOC at the current situation and SWAYAM is one of those. SWAYAM provides good learning materials which can be accessed freely by the learners, and it is especially for the weaker and marginalized students. Its portal is designed by NPTEL and MHRD and it is for students from class IX to master's level.

- **DIKSHA:** Digital Infrastructure for School Education which we call it as DIKSHA is a digital platform which provides learning materials related to the school curriculum. It provides disruptive technologies through next generation technological advancements. It also got an application which can be accessed for better learning where students along with the teachers can make their lesson plans accordingly.
- **NROER:** National Repository of Open Educational Resources (NROER) is an open access learning platform where learners can get free materials including e-courses and e-libraries. It is created by Central Institute of Educational Technology (CIET) and NCERT which also provides events related to digital and resources are also provided in regional languages for the benefit of the learners.
- **E-Pathshala and PG Pathshala:** e-Pathshala is a digital learning platform specifically designed for school students from class I to XII which is launched under the initiative of NCERT whereas e-PG Pathshala is accessible for the postgraduate students where they get high quality materials and it was started by UGC and the Ministry of Education under National Mission on Education through ICT (NME-ICT).
- **NDLI:** NDLI is termed as National Digital Library of India which provides resources from school to master students in 70 different Indian languages. Various types of learning materials are available here which are beneficial for every type of learners. It is developed with the help of NME-ICT by the Ministry of Education to take digital learning into the next level.
- **SwayamPrabha:** It is also developed by the Ministry of Education which provides 34 DTH channels that telecast high quality educational purposeful programmes for the learners across our Nation. It is maintained by INFLIBNET which can be accessed anytime and the content is of 4 hours duration which is repeated 5 times a day. It is



mainly designed for classes IX to XII but it is also beneficial for higher educationist and for those who are preparing for competitive examinations.

- **NPTEL:** National Programme on Technology Enhanced Learning (NPTEL) is an initiative taken by the Institute of Bangalore, Science, and 7 other IIT institutes namely Delhi, Bombay, Kharagpur, Kanpur, Guwahati, Madras and Roorkee to offer various free of cost courses digitally related to science, social science, engineering and humanities. It is funded by the Ministry of Education and the Government of India.
- **E-ShodhSindhu:** It is basically a digital library which is also created by the Government of India and the Ministry of Education. E-ShodhSindhu is maintained by INFLIBNET which provide resources electronically specially for the learners who are in higher studies.

## FINDINGS AND CONCLUSIONS

From the above analysis it was found that for effective implementation of digital learning in our country, it have to go through some challenges and limitations though digital learning have its own opportunities. As there is technological advancement and digital revolution taking place, there are several opportunities of digital learning in our economy. Digital learning is the gateway through which we can achieve digital India and it can be a reality that will transform our country into a global leader digitally. The opportunities of technological innovation and development can be judiciously utilized for learning digitally which will indeed move a one step forward towards digital India campaign. The policy makers and the government is doing their part to promote digital learning but we all as a unit should come together to support such learning so that each and every learner can get access to such learning, which is the future of teaching and learning. Quality education is the key for the growth and development of our economy and if learning via digital mode can reach out to every learner, then it is quite acceptable to adopt such future focused learning for the next generation students. Digital learning gives the scope for learning as per your time and need and it gives the opportunity to pursue your goals at an affordable cost for every learners but it can hardly replace the physical mode of learning where the learning experience was so lively, transparent and tangible. In the modern era of Information and



Communication Technology (ICT), we shall definitely enrich and complement the experience of learning in digital learning mode and empower it in the fast changing technological driven economy of the 21<sup>st</sup> century.

## **RECOMMENDATIONS**

Digital learning is the need of the era in the modern generation technology savvy environment. There are several challenges to fully go for digital learning in our country and thus we have to overcome such challenges so that there is free flow of learning in digital mode. The government and the ministry of education along with the policy makers and educationist should take digital learning into new heights so that every learner gets access to such learning. They shall also think about those learners who are considered as the marginalized groups of the society and the slow learners who hardly have any technological and knowledge about technology for accessing online materials. Literacy in technology needs to be improved especially for those who are technically and technologically challenged in the generation of technological advancement. We must develop an environment so that learning can reach out to every student since development in education sector of our nation means development in each and every sphere. Proper and efficient infrastructure should be build to create a learning environment just like the traditional physical classroom where every student can connect with the teacher in a real time mode while learning. Appropriate policies should be adopted by the authorities to better implement the digital learning mode so that the learners shall feel the sense of belongingness and a trusted learning environment where they can learn freely as per their wish and without any barrier.

## **LIMITATIONS AND FUTURE RESEARCH SCOPE**

The recent study aims to ascertain the opportunities and challenges of digital learning in our country and it will need more time for the learners to ascertain the better impact of such learning in our educational institutions. The scope of the research work is narrow since it is based on only secondary sources of data. Future researchers can also do primary survey based research on the impact of digital learning among the teachers and the students those who have access to digital



learning. More extensive research work can be done by selecting a particular group of educational entities to get a clear understanding of the educational difficulties to have a improvement on it. Primary survey based research can be extended with the help of sophisticated statistical tools by the future researchers to conduct study on empirical analysis.

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