

INTEGRATING TECHNOLOGY INTO EDUCATION: A NEW PARADIGM AND A PANACEA IN COVID-19 PANDEMIC

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ABSTRACT

In times of uncertainty, survival requires an immediate response, and this paper is a study of how technology has been a panacea to deal with the uncertainty of schooling during the pandemic. The outbreak of COVID-19 forced educators to switch to an online mode of education in order to provide a possible solution to students to continue their education. The paper emphasizes the significance of incorporating technology into education at mass level; it also examines a paradigm shift to online mode of education. The paper will be a helpful document for policy makers to frame the futuristic policies based on integrating technology into education in order to deal with different and uncertain situations.

Keywords: COVID-19, Online Education, ICT, Paradigm Shift, Panacea

Introduction

The outbreak of Coronavirus (Covid-19) which has been declared as pandemic by World Health Organization (WHO) in March 2020, resulted in disrupting many aspects of our lives, especially our education sector. All the educational institutions were shut because of the spread of deadly virus of Covid-19. The teaching learning process in schools was shifted from offline mode of teaching to the online mode. There was no option left for the education sector but to shift entirely to an online mode of teaching learning which is the only panacea left for continuing the teaching learning process in schools in order to deal with the current situation of coronavirus pandemic. Earlier the educational institutions even most of the teachers were hesitant to go for online mode of teaching. Now everyone has realized that the scenarios are changing so is to change the nature of teaching and learning. The coronavirus pandemic has made us realize that we should frame our teaching learning policies in such a way that we should always be ready to deal with the coronavirus pandemic like situation so that our teaching learning process may not get interrupted anymore in future.

Although online education was generally not a new concept for educators, the COVID-19 pandemic created an unprecedented global need to explore online teaching/learning opportunities across the field of education. According to the UNESCO, since the beginning of pandemic, more than 1.6 billion students globally (94% of total enrolled learners) have been affected by the COVID-19 closures and consequent educational changes. The sudden outbreak of coronavirus resulted in closure of most educational institutions around the world which forced the conversion of the face-to-face instruction into a fully online (or blended/hybrid) mode in a very short period of time. As a result, academic institutions that were mainly focused on traditional face-to-face instructions encountered different challenges in this conversion. Technology integrated education is more flexible and cost effective in terms of providing online education to the students. While as physical education or in-person education is costly and lacks flexibility in nature. During this pandemic it is the education sector which has been disrupted the most across the globe. So to keep the knowledge retention steady within students it is necessary to use e-learning and remote teaching which is proven to be more imperative. The technology integrated education is more student centered than face to face education. While the teaching learning process took place through online mode, it becomes more innovative, flexible and student centered as the students are more motivated towards online learning because of its flexible nature. Online learning may be defined as the learning process which takes place in synchronous or asynchronous mode using various devices such as computers, mobile phones etc. with the help of internet access. In this mode of learning students are independent to learn as there is no fixed time or place for learning, students can interact with their teachers and also with their classmates anytime and anywhere which makes it more student centered (Singh & Thurman, 2019). The synchronous learning took place in real time where the students interact with their teachers and gets instant feedback in a real time situation while attending live classes. The asynchronous type of learning took place through online prepared resources and it is without real time interaction with teacher (Littlefield, 2018). So there is paradigm shift in the system of education from in-person or face to face teaching to online mode of education which is an important solution to deal with the pandemic. Now it is important to take into consideration while framing the futuristic policies of education that our schooling may not get hampered in future. So it is our duty to encourage the policy

makers and stakeholders to frame such policies which are based on integrating technology into education for the sake of securing the future of our students and for the continuity of education and also to deal with such kind of uncertain situation in totality.

Purpose

The purpose of the current paper is to study that how coronavirus pandemic has forced the educationists to shift face to face in-person education to online mode of teaching learning during the pandemic and also how technology integrated education is a necessity and the only significant alternative panacea available for dealing with the coronavirus pandemic like uncertain situations.

Online Education an Obligation in COVID-19 Pandemic

Since most of the world countries have been affected by Covid-19 pandemic resulted in disrupting all the aspects of normal life of people throughout the globe. To counter this pandemic the technological world has come to rescue all the aspects of life especially the education sector. The only necessary option left for continuing the teaching learning process is to go far online education. Most of the schools not only in India but across the world have shifted to online mode of education which has emerged as the only alternative to face to face traditional learning. The Covid-19 pandemic like uncertain situations and the other natural disasters poses a great threat on the education of the students by the closure of schools and resulting in depriving the students of their fundamental right to education. Covid-19 hampered the education by imposing lockdowns, corona curfew, closure of schools and maintaining social distancing, so in these conditions we have no other alternative but to move towards online learning. Any kind of crisis is the biggest obstacles in the field of education. The education sector has been boosted in times of corona crisis as it brings a technological revolution in the field of education by integrating technology into education and making teaching learning online. Schools should be flexible to adopt new ways of teaching and learning during the time of crisis and disasters ([Chang-Richards et al., 2013](#)). To make the future of the students secure it is necessary to go for suitable alternative ways of teaching and learning and this can be done by integrating technology into education which is the only panacea available in covid-19 crisis. So to deal with Covid-19 crisis and such other uncertain circumstances in future the online education is not an option but an obligation to be utilized for continuing the education and it also helps us to prepare ourselves for future and make planning in such a way that our education system will never get hampered even in unprecedented times of crisis and natural disasters.

Impact of COVID-19 on Schooling

The nationwide lockdowns implemented during covid-19 to curb the spread of the coronavirus have disrupted traditional face to face schooling at a large scale not only in India but across the globe. The disruption due to covid-19 pandemic has affected nearly 1.6 billion students in more than 190 countries. Due to this pandemic and closure of schools has impacted 94% of student population across the globe. The UNICEF has reported that in India nearly 247 million children enrolled in elementary and secondary education and 28 million children enrolled in pre-schools and Anganwadi centers have been affected by covid-19 pandemic. As for as the continuity in learning is concerned the educational sector have made great efforts to retain the continuity of schooling in the covid-19 crisis. Students mostly depend on the resources available to them for continuing their learning remotely through different gadgets like television, radio or internet etc. It is necessary for the teachers to shift the methodology of teaching to online mode and adopt the novel concepts of pedagogy to teach the students, but the teachers feel hesitant to adopt the new pedagogy as they are not skilled and they have not been given the appropriate training to utilize this new pedagogy into teaching. There are many learners who don't afford to access the resources of digital learning mostly belongs to marginalized community and also have lack of resilience and engagement on the pace of their own learning, are at the highest risk of their learning losses. Different research findings revealed that the learning losses and increasing inequality in education is a common factor in times of covid-19 crisis and that happens mostly because of digital divide among the students. Children from well off and educated families received a good attention and support from their parents than socioeconomically disadvantaged children and also less educated parents. Due to the closure of schools and increasing digital inequality the students are lagging behind in learning and many students have also left the education for life time and started earning the livelihood for their families as a whole. Now it is the government's responsibility to take necessary action and should raise the funds for these marginalized groups to support their education and safeguard the students right to education so that they may become able to continue their learning with other privileged students. The policy makers and stakeholders should focus on strengthening the ICT infrastructure in the educational institutions and bridge the gaps of digital divide among the students in order to achieve the goals of sustainable development.

COVID-19 and Online Pedagogy

For implementing the lockdown and social distancing measures effectively during Covid-19 pandemic all the sectors of life have been shut including the closure of educational institutions in most of the countries around the world. For continuing education in times of Covid-19 crisis education is delivered through various online platforms which leads to paradigm shift in the pedagogy of teaching and learning. Instead of the challenges faced by both the teachers and the students the online education is the only panacea for this uncertain situation of global covid-19 pandemic. The entire system of education and the process of teaching and learning being forced to adopt a system for which they are not prepared. While the schools and universities have been shut the online learning tools played a significant role in helping and facilitating the students learning during covid-19 pandemic (Subedi et al., 2020). With the help of online learning the physically challenged students are allowed to take part in teaching learning with more extended freedom and requiring limited movement in the virtual environment (Basilaia & Kvavadze, 2020). Online learning pedagogy is the only suitable solution to all problems of education in any situation. There are variety of subjects and students of varying age groups which require different online teaching learning approaches (Doucet et al., 2020).

The teachers and students should be skilled in operating the tools of online learning platforms which are appropriate pedagogy for online education. It is recommended that government should organize the training programmes for the teachers so that they will not face any difficulty in operation tools which are meant for online education and by this it is possible to achieve the target of integrating technology into education so that the process of teaching learning cannot be disrupted anymore mostly in the times of natural calamities and any other uncertain situation. There are different online platforms which are being used on an unprecedented level to ensure the continuity of teaching and learning. So in the times of covid-19 crisis there occurs a paradigm shift of the teaching pedagogy and most of the teaching learning process shifted from face to face learning to online mode. Now it is recommended to the policy makers and stake holders to frame such policies which encourages the online pedagogy and make provisions for implementing such policies in future which supports online mode of education so that no student should be denied from right to education.

E-Learning initiatives during Covid-19 pandemic

As the outbreak of covid-19 was sudden and unexpected, the government organizations and the stake holders of educational institutions were not sufficiently ready to deal with this pandemic. The government takes every possible step during covid-19 in order to ensure the equity and continuity of learning. During this period of pandemic efforts are being made by the State and UTs to bring education to the doorsteps of every student through e-learning platforms which is admirable and an important sign of leveraging the impact of covid-19 in India. The government makes available the alternative e-resources during the closure of schools due to covid-19 for continuing education. Following are some of the e-learning resources made available to the students by the government.

DIKSHA (Digital Infrastructure for Knowledge Sharing): This is one of the online resources made available by the government leveraged in the times of covid-19 pandemic. DIKSHA was launched in September 2017. DIKSHA has more than 80,000 e-content available in many Indian languages, catering to 1-12 schooling Grades.

VidyaDhan: Government of India Launched VidyaDhan in April 2020 as a common national program to develop and contribute e-learning content to leverage the DIKSHA platform.

PM eVidya: PM eVidya was launched in May 2020 is a unique and innovative endeavor by the Government of India which is a inclusive initiative aimed at unifying all efforts to digital, online and on-air education to facilitate multi-mode access to digital contents of different types among students and teachers.

SWYAM PRABHA: is a digital initiative by the Government of India which is comprised of 32 TV channels for both school education and higher education which can be viewed on DTH service on 24/7 basis across the country. The efforts are being made to develop the contents and topics in chapter and topic wise to ensure the asynchronous usage by everyone anywhere and anytime in future.

NATIONAL REPOSITORY OF OPEN EDUCATIONAL RESOURCES (NROER): A portal equipped with best quality informational content on diverse topics in multiple languages a total of 14527 files including 401 collections, 2779 documents, 1345 interactive, 1664 audios, 2586 images and 6153 videos on different languages. NROER has approximately 17,500 pieces of e-content of The National Council of Educational Research and Training (NCERT) and other collaborative partners. The materials are available for various school subjects.

e-PATHSHALA - A web portal and mobile app designed and deployed by the National Council for Educational Research and Training. It has 1886 audios, 2000 videos, 696 e- ebooks (e-Pubs) and 504 Flip Books for classes 1st to 12th in different languages.

In addition to the above there are other various resources available which are being deployed by NIOS (National Institute of Open Schooling), Indra Gandhi National Open University (IGNOU), University Grants Commission (UGC), National Council for Educational Research and Training (NCERT). The efforts are being made by the government of India to upgrade the digital learning tools and working hard to bring new digital initiatives in future (post covid-19 pandemic). EdTech companies are supporting the government in facing the challenges posed by covid-19 and also help to overcome the unprecedented crisis of covid-19.

Discussion and Conclusion

The sudden outbreak of the deadly covid-19 pandemic has affected all the spheres of our life including the education sector at a large scale and altered the way of teaching and learning. To deal with the covid-19 pandemic and to find the alternate solutions to our problems, we need to bring some innovative changes most specifically in our education sector. To continue the education in times of covid-19 crisis we have no other alternative left but to shift the teaching learning process to online mode and securing the future of our students. The pedagogy of teaching has altogether shifted from face to face education to online mode of teaching learning for which neither the educational institutions nor the teachers as well as students were prepared. Adopting the changes in the times of crisis has boosted the education sector and it will bring tremendous innovative developments and upgradation in the education sector in the long run. Although the integration of technology into education has been started earlier but during covid-19 pandemic it gets wings and makes rapid progress in upgrading and adopting the innovative technologies and strategies to follow. This unpredictable outburst of the crisis taught us that scenario planning is a must to deal with such kind of challenges.

A great deal of preparedness and training should be needed in order to deal with the crisis and accept the changes and acclimatize according to the different situations present at the time of crisis or any kind of uncertainty. The availability of ICT infrastructure should be available in the institutions in the severe situation of pandemic and other natural disasters. The e-learning resources, e-contents, Massive Open Online Courses etc. should also made be available in such situations. The different online platforms like ZOOM, Google meet, Skype etc are of tremendous importance for conducting online classes and meetings. There are various ICT initiatives taken by the Government of India like DIKSHA, VidyaDhan, PM eVidya, SAYAM PRABHA etc. for benefiting the students and securing their right to education. The flexible and cost effective feature of online education helps the students to achieve the goals of learning and continue their education.

It is really unfortunate that there are students who do not have the accessibility and necessary technological gadgets to be benefited by this technology integrated online learning. Many students are lagging behind because of non availability of resources and lack of internet or almost nonexistent internet in the remote areas is suffering from the learning losses. The most of the students belonging to marginalized groups are not able to buy a simple smart phone or any such type of gadgets for learning purpose. Although government is trying hard to reach every student through emergency remote learning program like Radio broadcasting and through different free DTH TV channels etc. Government of India is doing a commendable job for safeguarding the right to education of every child but instead of this a lot needs to be done for bridging the digital divide and inequality among the students so that no student lag behind. Now it is the responsibility of policy makers and stakeholders to take necessary action and frame the policies that will be of outmost importance and applicable in the pandemic and natural disaster like severe situations and that will ensure the right to education to each and every student so that no student will suffer if such unprecedented situation occurs in future.

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