DIGITAL INDIA'S ROLE IN DIGITAL EDUCATION AMIDST COVID-19 CRISIS: A RETROSPECTIVE REVIEW.

Dr. C. Suresh Kumar
Assistant Professor
Department of Visual Communication
Pondicherry University Community College,
Puducherry.
&
K. Vimalraj
Research Assistant
Department of Visual Communication
Pondicherry University Community College
Puducherry.

Abstract

Ever since the government of India launched the Digital India campaign, there have been a lot of initiatives and schemes implemented and/or are still being implemented under what it calls "the flagship programme." Those initiatives and schemes, it seems, are for the good of every citizen in the country due to which they seem to cover every area of a citizen's welfare like financial inclusion, education, health, employment, etc. All of those initiatives and schemes have something or other to do with making sure that each and every citizen of the country is digitally empowered, thus aiming to make India a knowledge economy. With the global pandemic however having disrupted the way of life for everyone and changed it to more of a technology-reliant one, obviously because of its distancing nature, this paper specifically focuses on extensively reviewing other research articles, newspaper articles, editorials, and expert video interviews that talk about the status of digital education during the COVID-19 crisis and unbiasedly elucidating the extent to which the Digital India initiatives and schemes for education came in handy during the COVID -19 pandemic. Since this paper is all about reviewing the relevant resources, the proven methodology adopted for this study is Meta-Synthesis, a qualitative research methodology that helps arrive to a conclusion by forming an entirely new unbiased understanding about a subject. The study shows that there is a

Keywords: Digital India, Digital Education, COVID-19 impact, Online Education, e-learning.

Introduction

Digital India, as we Indians must have heard of at least once in the past decade, is a flagship programme that aims to make India a digitally empowered knowledge economy. Under this umbrella scheme, there have been many initiatives to develop various sectors with the help of digital technologies. Though, the empowering part of those initiatives would not have been much of an empowering one if it was not for the initiatives taken up in the Education sector. Digital India programme does have one-fourth of its initiatives dedicated to changing and developing the hitherto, mostly paper-reliant education scenario in India.

Those initiatives are as follows:-

1. National Mission on Education using ICT:-
   - Shodh Shudhhi
   - VIDWAN
   - Virtual labs
   - Spoken Tutorial
   - FOSSEE
   - e-Yantra
   - e- Shodh Sindhu
   - Shodhganga
   - e-PG Pathshala
   - SWAYAM PRABHA
   - SWAYAM
   - SAMARTH
2. PMGDISHA
3. Visvesvaraya PhD scheme
4. e-Pathshala
5. National Knowledge Network
6. National Scholarship Portal (NSP)
7. Sugamaya Putstakalaya

All of these initiatives have been implemented as part of the Digital India programme and have been effecting a remarkable change in the arena of digital education. Though, it still begs an important question as to how much of a help they were during the covid-19 pandemic.

In order to figure that out, or to better understand it at least, there needs to be a thorough review done of the literature in that or related arena. Therefore this paper adopts the methodology called 'meta-synthesis' i.e. it reviews research articles, newspaper articles, editorials, and expert video interviews, to draw a conclusion or reach an understanding about the role of Digital India initiatives in digital education during the covid-19 pandemic.

Digital revolution in Education in India

In India, when it comes to talking about the digital revolution in education, or be it in anything for that matter, the most prevalent idea is that it all started in 2015 when our prime minister launched the "umbrella programme" called the Digital India programme. Even though there had been many initiatives - way before Digital India- pertaining to the Internetization of the education sector in India, it is the Digital India programme that brought out tangible outcomes in multiple sectors; one of them is the education sector. Even when searched in Google's search engine about the "India's Digital Revolution", at least 5 or 6 resultant pages that appear at the front would be about the current government's "Digital India" programme that was incepted in 2015.

Though the programme has been this widely promoted, the Indian government's endeavours to use ICT for education can be traced way back to 1984 when the CLASS (Computer Literacy and Social on Schools) project was launched for XI and XII. The Indian Space Research Organization has had an exclusive satellite named EDUSAT launched in its orbit just for the sake of providing basic education to millions of Indians.

Benefits of digital learning

According to PRAMOD KUMAR (2020), digital learning not only educates but also enables and empowers all the young lives it touches. He also invokes stats to point out that there are still about 97,273 single-teacher rural schools in India. Let alone the lack of internet access, basic infrastructure with a decent electricity connection, potable water, health, and hygiene is still a major obstacle in rural schools for digital learning.

It is also observed that the schools and institutions in India are adopting digital learning because of the government's Digital India initiatives; the rise in internet penetration and the drop in smartphone prices also contribute to the rising ubiquity of digital learning.

The benefits of digital learning include the following:-

(a) With all its tools, digital learning can be more engaging than the traditional learning methods because of its Audio/Video elements and interactivity.

(b) Because of its interactive nature, it is also inclusive in terms of bringing teachers, students, and parents together thus making it easy to track the learning process.

(c) Also unlike traditional learning, digital learning goes beyond the classroom i.e. learning is possible from any part of the world.

(d) Digital learning encourages students to be innovative and the lack of qualified teachers in the country can also be addressed and remedied.

The author proposes a three-tier system for the betterment of rural education and development. Each of the tiers respectively focuses on Students, Teachers, and Communities. Tier 1 stresses upon students engaging with project-based learning; connecting with integrated studies; sharing with comparative learning; and expanding knowledge with a comprehensive assessment. Tier 2 is about teachers guiding students intellectually and emotionally; learning teaching as an apprenticeship; adopting technologies; and recognizing resources. Tier 3 insists on parents' involvement and including partners. Even though 78% of India's total population has smartphones, the teledensity in rural areas is just about 50% which is not conducive to virtual learning.

Status of Internet Penetration and e-education in India before the Pandemic

Effects of Covid-19 on every sector were indeed adverse, but blaming the pandemic for every fall that happened is somewhat unrealistic. Because the status of Internet usage penetration in India was not so good even before the pandemic.

According to Biswas (2021), internet connectivity in India is still an "ongoing project". There are still many villages in India that do not have internet connectivity even though it is one of the nine pillars on which the whole Digital India programme is laid out. He also recalls the Right to Education Act implemented for Inclusion and claims that online education now started exclusion.

The author further talks about the schemes by the Government of India that were useful to ensure the education during the pandemic. He lists out the following (Biswas, 2021) :-

i.   Shagun Scheme
ii.   SWAYAM
iii. SWAYAM PRABHA
iv.   National Academic Repository
v.   National Digital Library
vi.   Virtual Labs

Under the Shagun scheme there are 3 e-learning platforms viz. 1. National Repository of Education Resources, 2. Diksha, and 3. E-Pathshala. Over 16,000 registered users benefit from the National Repository of Education (Biswas, 2021). And over 80,000 e-books are available in Diksha portal for 1st standard to 12th standard CBSE and NCERT students. The fact that it doesn't host material for State Board syllabi is its limitation. Yet, it was of great help to many CBSE and NCERT students during the pandemic. Another important portal that helped students cope with the pandemic situation is E-Pathshala. Yet again, it left out a remarkable portion of Indian students whose syllabi don't follow the NCERT's or CBSE's. So, this study is aiming to answer the critical question if the schemes introduced with Digital India campaign was and is actually helpful in times of Covid-19 lockdown.

Disruption in education due to Covid-19 pandemic:-

In research from Onyema et al. (2020), it is cited that UNESCO Director-General Andrey Azoulayals warned by saying, "The global scale and speed of the educational disruption due to coronavirus is unparalleled and, if prolonged, could threaten the right to education". The authors further cite the US Centre for Disease Prevention and Control (CDC) fearing that the longer closures might result in more students congregating outside schools.

Also, it is observed that the closure as a reactive measure could only postpone the pandemic by a weak or two, and only proactive closures could mitigate the impacts of the pandemic. UNESCO cited by the authors lists the following as the harmful effects of school closures due to the pandemic:-

- Interrupted learning due to the lack of atmosphere for growth and development.
- Nutrition levels may deteriorate among youngsters due to the lack of access to free or discounted meals provided at schools.
- Unequal access to digital learning portals caused by the prevailing digital gaps;
- Increased pressure on schools and the school system that remains open because parents might start to send their children to open schools.
- Since schools create the environment for social activity and human interactions, closures might isolate them from such social environments thus harming their learning, development, and creativity.

Corona pandemic did decrease education opportunities for underprivileged learners and those in rural areas throughout the world. Among many major barriers to online education during the pandemic, the highest impediment is the inadequacy of facilities like computers, internet facilities, electricity, etc. (Onyema et al., 2020).

Obstacles in the way of e-learning in India

In an article from The Times of India (Upadhyay, 2021), the author stresses the obstacles that make difficult the e-learning process among Indian students. With money being the primary one among them, it really is a nightmare for families with low income to afford smartphones and their monthly recharge bills. Also for the families that have only one smartphone, which is owned by one of the parents, it is hardly available for the children from the same house studying in different grades.

Another important hurdle is because of the lacking literacy to use the smartphone technology since the percentage of the smartphone users in India stills lingers somewhere around 50% with ±5% tolerance. So, it is obvious that not all parents/ students in India know how to use a smartphone.

Internet connectivity is another major problem when it comes to students from rural backgrounds attending online classes from their villages that have poor or no network connection at all. As one Mr. K. Purushotham, principal of Vivekananda Tribal Residential School, Wayanad, says, it is already miserable enough that the people from tribal belts of Wayanad are suffering due to a lack of food supplies caused by the pandemic lockdowns, let alone their inaccessibility to smartphones and laptops.

With girls' education already being a 'privilege' in most parts of India, it is possible that they get denied basic education just because the social conventions around them forbid them from using phones. The annual

status of education report (ASER) 2020 survey cited by TOI (Upadhyay, 2021) says that 11% of 118,838 households bought new phones since the beginning of COVID-19 lockdowns and 80% of those phones were smartphones. About 13% of those who didn't have smartphones had their children rely on someone else's smartphone.

Transitioning from face-to-face to online

Goenka (2021), in an article for The Indian Express, suggested three short-term solutions to the gaping education crisis caused by the COVID-19 pandemic. With the first two being reopening schools and making teaching a collective responsibility of teachers and the local community, the third is more about the new innovations to educate our children. Even though bridging the digital divide is a tedious task, she suggests that education can be done through television, radio, and telephone if monitored properly.

The main takeaway from the COVID-19's impact on education globally is that digital learning can be of big help and beneficial. In India, it's only less than 1% of privileged kids learn through digital platforms during the pandemic. However, the success and potential of online learning in India are evident through the growing popularity of digital education companies like Byju's, Unacademy, and White Hat Junior. Stressing on democratizing the digital content for all students, the author further addresses the infrastructure divide that obstructs access to those contents.

It is also hoped that our government, which successfully digitized India with Aadhaar cards and bank accounts, can also do the same for education. India has achieved vast network connectivity thus making the low-cost internet less of a problem. The only real problems are funding and creating infrastructure for digital education. In a review article from Vargo et al. (2020), the authors did a rapid review to measure the digital technology use during the Covid-19 pandemic. They observed that students and educators chose to use video-based devices and platforms to continue their education. Rather, they were becoming the second largest group of digital technology users during the pandemic.

The authors further cited the work of Sun et al. (2020) where they found out that "the applications of the application of digital technology use in education could use further assessment to make improvements in its implementation." So, when it comes to implementing digital alternatives in education, that too when there is a crisis to deal with, there is a need indeed to improve methods of teaching, learning, assessing, evaluating, etc.

Challenges to the path of Digital India

The former chairman of the National Knowledge Commission and the National Innovation Council, Mr. Sam Pitroda, in an article to the Indian Express (Pitroda, 2020) points out the number of issues related to providing digital education in the face of the covid-19 pandemic; issues related to access, devices, content curation, teachers, training, testing, exams, grades, funding, facilities, salaries, parents and fees. The lack of resources to provide digital education in both government and private colleges and schools is also a serious problem. Even though there were some bold initiatives like National Optical Fibre Network (NOFN) and the National Knowledge Network, he says, our "Digital India" still was not prepared or rather underprepared to provide digital education during the crisis. Because the Telecom operators in rural areas were not ready to use NOFN due to its low profitability and the NKN was not known to many educational institutions except a few top ones like IITs and IIMs.

The COVID-19 pandemic is said to have acted as a catalyst that boosted the outreach of and usage of E-learning. It also ensured the continuation of the teaching and learning process during the outbreak. Though, how much of an ensuring happened in rural parts of India is still a question. Dutta (2020), in his article measuring the impact of digital social media on higher education during the covid-19 crisis, stated, "The present Coronavirus crisis has revolutionized the entire higher education architecture of the country through e-tools for teaching and learning since there's no other option for continuation of the academic activities."

There is this rather stringent criticism from Sharma (2021), who claims that the transition from physical learning to online learning during and in the aftermath of covid-19 has only brought about "exclusive access to learning", where only a few could actually benefit from switching to online learning. He also invokes a 2019

survey stats from National Statistical Office that says only about 24% of urban households have access to smart phones, electronic devices, and internet connectivity and in rural areas it is only about 4%. Also he points out that, according to the 2018 Niti Aayog report, over 55000 villages in India didn't yet have mobile connectivity and, according to a 2017-18 study from Ministry of Rural Development, more than 36% of schools don't have electricity. With all these being pointed out, he questions the possibility of the "smooth transition" from physical to online education. After slamming the assumption that we are now somehow capable of adopting technology driven education, he further claims that Covid-19 pandemic has deepened, if not created, the digital divide in the education arena.

In the budget speech 2022, the Finance Minister of India, Ms. Nirmala Sitharaman brings forth the challenges faced by the rural and scheduled caste and scheduled tribe children in India when it comes to getting their basic education. She also officially informed that the "One class One TV channel" program of PM e-Vidya TV channels are to be risen from 12 to 200 in number. This, she says, would enable all states to provide supplementary education in regional languages for students of class 1 to 12. She goes on to say that high quality e-content in all spoken languages would be developed for delivery via internet, mobile phones, TV, radio and through digital teachers and a competitive mechanism for their development would be set up to empower and equip the teachers. She further announces that a Digital University will be set up to provide quality universal education at students' doorstep and it would be made available in different Indian Languages and ICT formats.

Conclusion

The onset of Coronavirus has hastened up the digital reset in India. Despite all odds, students never stopped learning thanks to the myriad opportunities that were at the disposal of the teaching fraternity. Traditional classroom teaching was replaced with an online classroom, which ironically was found to have several advantages like increased retention of information, less time to learn, etc [1]. Although both the teachers and students had no formal training for online classes and were ill-equipped with sufficient bandwidth; they were able to continue learning through online mode for the past six months. It is expected that online education will continue to be used in the future and may all set to become a part of education along with traditional offline mode in the post-pandemic period. A new form of learning namely blended learning is sure to emerge. The study has shown that there exists a gap between the knowledge and skills of apps amongst students. There is an improvement in student's knowledge and skills of various online teaching platforms after lockdown when compared to before lockdown.

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It is undeniable that technology has revolutionized many operating domains, whether it be gadgets, speedier communication methods, or even the sphere of education. The COVID-19 pandemic epidemic has caused a significant shift in the traditional educational system, where the idea of online learning have supplanted the conventional methods of classroom instruction and book-based learning. India's pupils during the pandemic had no other access to studying except through digital education. For the benefit of students from various social

strata, the Government of India has announced a number of programmes as part of its education campaign. As part of PM eVidya, the Ministry of Human Resource Development (MHRD) launched DIKSHA—Digital Infrastructure for Knowledge Sharing—under the Atma Nirbhar Bharat programme, which is the "One Nation; One digital platform" initiative aiming to coordinate the efforts of online, digital, and on-air educational modes towards education. Similar to this, numerous additional technology-based programmes like Vidyadaan, SWAYAM, e Pathshala, Shiksha Vani, and many others under this platform have fundamentally altered people's lives across the country.

Though there a positive side of Digital programme exists, there is a grey area which needs to be mentioned. The education system in India underwent a new crisis as the result of COVID-19 pandemic. India being the second largest school system after China, all the educational institutions were shut down in order to maintain social distancing. Studies suggest that this prolonged closure has brought about disproportionately adverse impact on the most vulnerable student community. As India already witnesses the disparity in equality in education, the pandemic has only exacerbated the existing disparities.

Hence, Future digital learning processes will require both teachers and students to receive further training on online teaching-learning tools and platforms. The Indian government must establish a supportive online learning environment for Indian students from disadvantaged backgrounds.

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