Education Rebooted - E-Learning and Digital Divide: A Study on Gandhi Vidya Mandir (GVM) Group of Schools, Sardarshahr

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ABSTRACT

Education is often seen as a itinerary to full participation in society, and widening inclusion in education and enduring learning as a way of including those who are currently excluded from many of the benefits of society. The use of ICTs (e-learning) is perceived by national governments and academic institutions as a means of widening partaking in education by enabling participation by diversified students. E-learning is perceived as lowering hurdles of time and place to enable students to attend comprehensive education while accessing resources at a time and place of their choosing. Yet, there is dissonance between the espoused belief of governments and academic institutions, in e-learning as a means of widening participation, and the reality of e-learning implementation. The digital divide refers to the gap between those who have access to the information technology, and those who do not. This research finds that the digital divide is not adequately addressed adequately, with some students financially unable to afford technology and broadband access, others lack the skills to engage with learning technology, and some are culturally less able to benefit from technological fortification. It also finds gender and generational differences disenfranchising some students. In order to address this situation it will be necessary to first acknowledge that the problem exists and unexplored its reasons.

Keywords: *digital divide, e-learning, dimensions of digital divide, qualitative case study*

Introduction

Information and communication technology (ICT) continues to have an evident impact on the everyday lives of people and the global economy which gives rise to a host of important issues. One major unanswered question at the global level is whether the use of ICTs leads to increasing differences within and among developing countries.

A major gap has always existed between prosperous people living in developed societies with an access to modern information technology and underprivileged people living in rural communities in underdeveloped countries. Even today, an unsymmetrical adoption of technology excludes many from harvesting the fruits of the digitalization. There is an epochal divide between those who can efficaciously use new information and communication tools, such as the Internet, and those who cannot. While a consensus does not exist on the extent of the divide (and whether the divide is growing or narrowing) within the country, researchers are nearly consentaneous in acknowledging that some form of divide exists at present in the developing countries, such as India.

Information and communication technology (ICT) can endure people, benefit businesses and individual and virtually link people around the world to share their views, ideas, and innovations. It can enable and assure sustained economic growth, better public welfare, and stronger social cohesion and democratic forms of government. The heightening process of globalization and the emerging ICT revolution is rapidly transforming the everyday life and practices among people. As the ICT excogitation continues to grow, it is important that steps be taken to help bridge the digital divide that has been emerging. There must be some process in place to grant all societies (rich or poor) and individual's equal access to the opportunities that have arisen as a direct result of these technological achievements.

In a developing country like India, advances in ICTs have brought a lot of opportunities and perhaps a whole lot of challenges as well. One of the main challenges is the considerable gap between the **information have-s and information have-nots** -what we call the digital divide. And, this digital gap starts right from school which has created two parallel worlds taking shape in schools broadly divided as ICT equipped and non-equipped schools.

Seed of the Study (Rationale)

Most of India is at home these days in the middle of a nationwide lockdown due to COVID - 19 epidemics. Many are spending a lot of time online, largely in search of entertainment, infotainment or infodemic. But, just like the real world, the virtual one too has privileges and stratification in form of digital divide. While many universities and colleges, **as well as GVM Group of Schoo**l, are conducting online learning sessions but students from disadvantaged families or living in secluded areas may not have access to Telegram, iCloud or, indeed, the internet even in the best of times.

All the teachers of GVM Group of School for more than a month taking online classes through Zoom App, but the question here arises is how many students are benefited, if the participation rate in online classes are low what is the reason behind it - Is it a new signifier of digital divide?

Many educators of GVM Group of School reported "Zoom and everything looks, lovely, but reality is multidimensional. It is hard to say that all the students are getting equal benefits. The participation is low and the major cause behind it is understandable but unexplored".

As the GVM Group of School has a large section of students coming from remote areas and backward sections which make online classes a hard ice to break. Within GVM Group of School there is stratification on the basis of medium of teaching, fee structure, teaching faculty, which directly reflects the emphasis on the participation rate of students in online classes.

This gives us an insight to explore the valid reasons behind this sort of digital divide or digital exclusion among the students of GVM Group of School, Sardarshahr.

Genesis of the Concept - Digital Divide

Digital divide, arguably the most fascinating couch of the present day seems to have its foundation in the United States of America. Many considered **Andy Grove** one of the creators of digital divide network coined the term. Few others say the credit goes to **Larry Irvin**. According to **Benton Foundation**, former President Bill Clinton first used the term in the discussions of the National Information Infrastructure in 1993. Though there are controversies existing as to who coined the term, there is a wider acceptance on the increasing gap between information have-s and Information have-nots -what we call the digital divide.

Recent report of UN appeared in New York Times bewailed the growing digital divide in developing countries. The Indian subcontinent is struggling to stay alive with the growing digital divide, leaving the poor illiterates poorer and the rich people richer. Government at the centre is working on the issue, taskforce on IT and software has been set up, IT policy has been formulated along with the announcement of telecom reforms in 1999 attracting greater participation from private sector, etc. In spite of these attainments, the country faces several challenges. These challenges range from child mortality to access to information and communication technology for the hoi polloi. Above all, lack of a grass-root level scheme and a collective effort in the attitude towards bringing change in the way we operate are some of the main reasons for this disparity.

Dimensions of Digital Divide in Education

As of March 2019, there are about 4.4 billion Internet users globally, of which only 56 Crore are in India. On a population coverage ratio, India's 41% is way below the global 57%. Even in the developed nations of North America and Europe, the digital divide is austere, and there is a wider divide in India. Compound that with our other drawbacks such as bureaucracy, corruption, network quality, tech infrastructure and affordability.

For all our soaring claims of digital advancement, we have over 700 million people who don't have access to, or ability to surf, the world-wide-web (WWW). Those who have had access to ICT have been renovating their lives over the last few years. Others have got marginalized with lack of new ideas and opportunities. The starkest digital divide probably is evident in education, which is fundamental to any transformation. The availability of hardware, software, network equipment, connectivity, and 24X7 steadfast information are keys to bridging the digital divide in education.

The analysis of the digital divide in education threw up a three-dimensional problem with sub-segments of all types. The first dimensional gap is between those who have access to hardware, network, software, authentic information, etc and those who don't. This is not necessarily a rich/poor divide. Students in remote rural areas and peripheral urban areas where connectivity is either too slow or sporadic are not inevitably poor. There may not be curate sources of content. It can be termed as **Accessibility divide**.

The second dimension is the gap between generations – that is, between teachers and parents vs. students - **Generational divide**. Parents are cautious of giving ICTs to kids because of widespread misinformation. They also don't know how to guide in the effective use of the digital media. Teachers are diffident to change their pedagogy for fear of losing their significance. As such they thrash about completing the syllabus on time. Even if they desire to become a mentor in shaping the young minds, it is a pain with pressures on syllabus requirements, the fascination with marks, and other commitments.

The third dimension, the **Behavioral divide**, is the gap between those who can learn on their own, with or without social setting, opposed to those who can't. Many women, girls, minorities and migrants eschew digital access for learning because it is either too boring to learn on their own or too antisocial. Many are incapable of learning on their own. This probably explains why only 2% of the millions who enroll for MOOCs complete the courses. In this divide, the educational aspirations and self-directed learning need handholding. This dimension is somewhat analogous to the Techno-Readiness research at the University of Miami had done across five nations, pointing to no correlation between one's education, income or social status to technology adaption. In 2016, it had proposed the techno-readiness segmentation study to Government of India to speed up the digitization drive more effectively but the implementation initiative was found missing at both the ends - bureaucracy and NITI Aayog.

Education should liberate us to scale life and help to find solutions to the problems of the humanity. The digital divide encumbers performance in academics, creates gratuitous competitive advantages to some, and condenses the productivity for others. The digital divide widens the rich-poor gap in academic performance and earning potential.

Different approaches will be needed for each dimension and sub-segments. For instance in remote rural areas and poor urban areas, access can be improved with community technology centers, internet-enable religious places, schools and libraries across the nation. Introducing satellite-based access, enable mobile networks, speed-up Google balloons, lower cost and reasonable speed of access are still decisive.

Different states and districts will need diverse approach not much different from the techno-readiness approach. For instance, Kerala address the behavioral and generational divide instead of the accessibility one.

For correcting the behavioral divide, teachers and parents need to viaduct the generational divide partly and mentor students to self-learning. They should also appeal to policy makers to shift the focus from current examination patterns and even push for open book exams. The assignments and questions given to students should persuade learning the fundamentals and acquiring the ability to apply them rather than reproducing from memory. Content providers should make the learning more fun and probably allow for peer learning as well as group-learning in an adaptive format.

A group of teachers in GVM Group of School was asked what they would do when students started learning without them. Only a few said they could move onto an advanced role of mentoring and helping students to do more. The rest were worried about becoming superfluous. Teachers must be trained in the latest technology, syllabus and the use of digital media in pedagogy for bridging the gap.

We can stop our brain drain by improving our educational standards/values and it is of the essence that the policy makers refurbish the education sector "outside-in" and facilitate private sector to build unique

institutions. By granting a prominence status to a handful of favored institutes and freeing them up from AICTE/UGC/regulatory control – is not a solution. The need is for over 50 multi-discipline research institutions with world-class standards. They should be allowed to develop their own curriculum, pedagogy and independent evaluations.

Methodology

This study is based on qualitative approach for study for several compelling reasons. Qualitative research methods are particularly useful in exploring and revealing the meaning that people give to events they experience (Bogdan & Biklen, 2003; Denzin & Lincoln, 2000). The purpose of this study was to discover the unexplored existing digital divide in school learning through e-learning process which gets emphasized in amid of Covid-19 epidemic.

Qualitative research methods used in this study includes purposive sampling, semi-structured interviews, and systematic and concurrent data collection and data analysis procedures. Specifically, the constant comparative method (Glaser & Strauss, 1967) was used to analyze the data and discover respondent's perceptions and experiences. Qualitative case study research served as the main methodology for this study on the parameters of Maxwell's (2005) rubber band analogy which explains the connections and interactions clearly.

Stake (1995) described case study methodology as a strategy of inquiry in which the researcher explores in-depth a program, event, activity, process or one or more individuals. Cases are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time. Case study researchers collect detailed information using a variety of data collection procedures over a sustained period of time. For this study, data was collected through in-depth telephonic interviews, and additionally reviewed documents provided to by the school. Another component of case studies is the unit of analysis, defined as the area of focus of the study (Merriam, 1988; Yin, 2009). For this study, this unit of analysis was the GVM Group of School, Sardarshahr.

In this study the semi-structured interview approach was used (Merriam, 2002) and a uniform set of open-ended questions to obtain: (a) demographic information on the participants, and (b) participants' perceptions and experiences with collecting, analyzing, and using data. Open-ended questions were used throughout the telephonic interviews to encourage participants to respond freely and openly to queries (Bogdan & Biklen, 2003; Esterberg, 2002; Kvale, 1996). Probing and/or follow-up questions were used, when necessary, to encourage participants to elaborate on or clarify a response (Denzin & Lincoln, 2000).

Although interviews were the primary method of data collection, I also collected and reviewed documents. Document review was used to clarify or substantiate participants' statements (Glaser & Strauss, 1967), and to provide thick description of the case (Esterberg, 2002; Merriam, 2002).This research study followed the Creswell's (2009) six steps during the data analysis process and, although these steps are described in linear order, Creswell described "an interactive practice" to analysis.

Screen Cast of the Reality

GVM Group of School is situated in barren deserted town and has large section of students coming from remote areas and backward sections. (Name of the teachers are not revealed to maintain confidentiality)

Dimensions of Digital Divide in GVM Group of School

Apprehending a shift towards digital education, a TGT, who teaches in GVM Group of School, stated that the participation rate was reliant on internet data plans on the phones of the students. She was told many had connectivity problems and didn't have personal tablets, laptops or even smart mobile phones. The students expressed to her in simple terms that data usage was limited and could be a financial strain. She said that Zoom classes sound lovely in elite urban educational institutions. But realities are different considering the students I teach," she said. (**Accessibility divide**)

Another teacher said "I have to convince parents a lot to share a device for the online class". Even many of the teachers with digital literacy tried to smooth the process by recording videos and sharing the link

to the students. But even it doesn't work as students who live in districts with limited internet connectivity found it tough to access. She said "Having 4G devices and getting are two different things". (**Accessibility and generational divide**)

Many of the teacher stated that some of the students are well-versed with new technologies but applying it in context of education is a big deal for them, especially for the students of primary sections. Taking selfie and posting photographs are easier to them. Students need to know how to use the e-learning technologies and without proper training, it is impossible to connect and include each student. (**Behavioral divide**)

 "I was thinking of Skype, Google Classroom, Zoom, Web-Ex, etc to connect with the students in a better way. But then it is a crack of dawn upon me that it was not going to serve all and sundry. A lot of students also worry about spending money on data plans, and heavy files take time to download in limited connectivity plans," said a teacher. (**Accessibility divide**)

Many of the teachers pointed out the fact that everyday 1.5 GB data is accessible and students prefer more to spend time and data on games, videos and online chatting. Even the device is in sharing mode, so parents too need it for infotainment. The importance of e-learning is yet not endowed in the mind of parents and students. (**Behavioral divide**)

A teacher of secondary class states "It's not just connectivity that's an issue but many of them need assistance and won't be able to use technology on their own," (**Behavioral divide**)

And, it's not just students who face problems. There are teachers as well who need guidance and assistance. Many teachers admitted that it is hard for them to give up their age old chalk-board pedagogy. A teacher of senior secondary said "I am at an age where encompassing new technologies in teaching is impossible. I found it hard to engage students for 40 minutes through ICT teaching" (**Behavioral divide and generational divide**) Many of the teachers reported that they are unaware of how to conduct online classes.

Few teachers feel scared about how they would "look on video, and would the parents of the students be around? Will there be monitoring? There is trepidation that ease of a classroom cannot be replicated in this mode". (**Behavioral divide and generational divide**)

Teachers shared their experience by stating that online classes burden them with more and more work such as sending homework, worksheets and their evaluation kills more time apart from taking classes. Entire day they are busy in satisfying the queries over phone and Whatsapp. The leisure time they spend on social media is curtailed and they feel intrusion of private time by students.

One of the teacher specified that she has only a basic handset and she has to borrow the smart phone from her children which makes her uneasy. (**Accessibility, behavioral and generational divide**)

Even though if the problem of accessibility is solved by some measures are we, teachers and students, are ready to bridge the behavioral and generational gap within a short span of time – the question asked by many teachers.

A Long Way to Go

The nationwide COVID-19 lockdown has forced schools and universities to close and send their students home which, in turn, has impacted over 91% of the world's student population. The closure has placed first-time challenges on governments, institutions, teachers, parents and care givers around the world.

India is continuing to handle this disruption by deploying different modes of learning through a mix of technologies. On a national scale, teachers and school administrators are encouraged to continue the communication with learners by delivering virtual live lessons.

E-education, a result of the digital world has brought a lot to the learning table at all levels of education, beginning from preschool up to higher level institutions. The move to remote learning has been enabled

by several online tech stacks such as Google Classroom, Blackboard, Zoom and Microsoft Teams, all of which play an important role in this transformation.

This study shows that GVM Group of School have always considered educational apps or e-learning as a supplementary tool and may have had difficulty in mainstreaming it, mostly due to not having fully understood its efficacy. However, the current situation has given us a fillip to accelerate the adoption of technology and experiment with online learning and measure its success by exploring its causes of crash.

As the digital learning acceleration continues during the lockdown period, it also throws light on the digital divide in India. Students from remote districts and those belonging to poor communities lack the infrastructure and the means to obtain the benefits of online learning.

The sudden, forced immersion of learners and educators into virtual learning during this period of Covid-19 has proved that the education industry is disrupted. Education is going to be digital in the anticipated future and with the right infrastructure and policies in place, we would be better prepared to handle it by bridging **accessibility, behavioral and generational** gap.

What Can Bridge the Gap?

While meteoric economic and digital rise of China has garnered global attention, other behemoth of Asia – India – has been undergoing a digital transformation that will prove no less intense. The current digital "**tale of the tape**" in India shows over one billion active mobile connections, plus large swaddles of users trading up to smart phones, resulting in a projected 530 million smart phones in India in 2018.

But amidst this rapid digital growth, it's useful to consider the flipside: the sizeable, ongoing digital divide, and the implications of that divide closing over time. In 2014, the Indian government launched the Digital India initiative, which aimed to boost the country's substantial digital infrastructure, and shift government services online. Broadband would reach 250,000 villages; Wi-Fi would reach 250,000 schools; and a push would be made towards both universal phone connectivity and universal digital literacy. As of last October, the investments involved totaled a cool cost US$68 billion.

The story says that "It's a lot", but still not enough. By 2016, internet penetration was estimated at 29% (with possibly fewer than 2% of households having a fixed internet connection). Look deeper and you can see the India's digital divide is not just headed on accessibility; here the generational and behavioral gap comes into the picture.

Indian government is trying hard and fast to bridge the '**accessibility gap',** but it is time to think about generational and behavioral gap. Before implementing any scheme, it is necessary to train the teachers as well as students to use the ICTs, not only for entertainment but for infotainment as well.

First step, we can start with educating the teachers/trainers about the methods of using the technology. Proper counseling is needed so that teacher thinks ICTs as their friend. With ICTs the definition of teacher will remain constant only the role will change from teacher to mentor.

Secondly, we have to counsel parents about the benefits of ICT usage in the education and how they can protect their ward from the misusing of ICTs and online threats.

Thirdly, we have to develop a habit of using ICTs for education in the students. We have to train them about the usability of ICT for education within the minimum resources available.

It is not only the duty of government but to make the digital divide narrow, we have to work at grass root level. Micro perspective is required to work on the ground.

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