



TACKLING DIGITAL DIVIDE IN EDUCATION: ANALYTICAL EXPOSITION OF VIRTUAL LEARNING METHODS ADOPTED DURING COVID-19

Swati Dash

Phd Scholar (uu) Hod, Political Science, Christ College, Cuttack

ABSTRACT

In the wake of COVID 19 pandemic, it is important to understand the disruption caused in the society and education is one of the major areas of concern. It is a pathetic state that "more than 157 crore students across 191 countries are affected badly and in India more than 32 crores students are affected due to the closure of educational institutions due to COVID 19 pandemic", (UNESCO report, 2020). Moreover, students belonging to the unprivileged sections of society are at a greater loss. The challenges posed by the present situation encourages educational institutions to adopt technology-mediated online classes. This study focuses on digital education and digital divide with case studies in India. This study provides a platform in understanding and tackling digital divide existing as a barrier among those not privileged to make use of the opportunity. The study concludes that technology is allowing digital based learning to proliferate during the COVID 19 lockdown but still far away from the majority of unprivileged people.

KEYWORDS : Digital Divide, School, Education, COVID 19

INTRODUCTION:

Education is a fundamental human right and every child has the right to access full time education of satisfaction and equitable quality education. Educational system has been reforming in various aspects every now and then. The emergence of technologies also has changed the mode of imparting education in 21st century. The purpose of imparting education is evolved around three main components: knowledge, learning and innovation. System of imparting education is not as same as the ancient days. Educational structure and system varied from period to period. The unprecedented situation of uncertainty caused by the COVID-19 pandemic in 2020 forced the Indian education system to move to digital learning and teaching to fill the gap created by suspending classroom teaching across the country. Technological development and the Internet have changed the lives of people immensely and have also brought a huge change in various fields (Nadikattu, 2020). The majority of countries worldwide temporarily closed educational institutions to contain the spread of the COVID-19. According to UNESCO (2020), 191 countries have implemented nationwide or localized school closures, resulting in over 91% of enrolled students, or 1.5 billion people, not being able to go to school as of April 20, 2020 (Lamrabat, 2020). UNESCO has supported countries in their efforts to mitigate the immediate impact of school closures, particularly for more vulnerable and disadvantaged communities, and to facilitate the continuity of education for all through remote learning (UNESCO, 2020). The decision of the countries to switch to an online mode of education in light of the outbreak of COVID-19 was needed to contain the spread of the pandemic. Although the Indian government has attempted to control the damage by introducing online teaching through the virtual classroom, uploading and sharing e-study materials, and through virtual interaction, all such tools and techniques have limitations. This damage control mechanism will certainly have long-term consequences on the quality, accessibility, and deliverability of educational content. The effects of the global pandemic on the education system may vary from country to country, depending mainly on infrastructure and quality of content. The outbreak of COVID-19 has affected all segments of students, but it is particularly damaging to students of the vulnerable groups of the society.

Research Problem:

The people of the vulnerable groups in India are disadvantaged in comparison to others mainly on account of limited access to basic needs or services. The vulnerable groups susceptible to mainly social and economic discrimination include women, Scheduled Castes, Scheduled Tribes, children, aged, disabled, poor migrants, people living with HIV/AIDS, and sexual minorities (MES, 2011). As per

census of India 2011, the Scheduled Tribes (ST) and Scheduled Caste (SC) account for 8.2% and 16.2% of the total population of the country respectively (Census India, n.d.). The term OBC, which stands for Other Backward Class, is collectively used by the Government of India to categorize the educationally or socially underprivileged castes living across the country. It is one of the official classifications of the population alongside General Class, Scheduled Castes, and Scheduled Tribes (SCs and STs).

There are reports of students of a large section of the country facing difficulties coping with the present online system of delivery of education based on the digital divide. The closure of 1.5 million schools due to the pandemic and lockdowns in 2020 has impacted 247 million children enrolled in elementary and secondary schools in India (UNICEF, 2021). The interruptions in the teaching and learning process have adversely affected mainly the students without smartphones and computers, those with poor Internet speed or lack of stable Internet connection, electricity failures, etc. The early evidence and news reports also indicate that the impact of COVID-19 is most severe among the students from vulnerable groups due to their inability to continue with studies due to meagre economic conditions. Moreover, re-contextualizing the teaching and learning process to an e-learning mode has several limitations for students with less access to technology.

The problem for the students with meagre sources of family income is more severe and such students require additional attention and support. The online method of delivering content is a big barrier for such students and their families. It has restricted both the cognitive as well as non-cognitive development of these students. The online delivery of education may turn out to be harmful if the pandemic situation continues for a long time for the students living in poverty. The situation will adversely affect students from indigent and other marginalized groups in particular. Moreover, health and psychological issues such as mental stress, eye strain, headache, backache, neck ache, spondylitis, sleeplessness, irritation, aloofness, lack of physical peer interaction, etc. emerging from the sudden introduction of online education can cause the students to experience many difficulties. Any stress and inadequate resources to alleviate these potential harms may lead the individual to experience psychological distress (Lazarus & Folkman, 1984). As an offshoot of digital and Internet technology, e-learning or online learning has developed the potential to make some notable changes in accessing educational curriculum outside the traditional classroom and previously existing technology over the last two decades. However, the widespread technological innovations and infrastructural growth divided the world into the physical and digital world since the dawn of the new millennium.

Besides the availability of the infrastructure, a detailed lesson plan, presentation, and good study materials need to be prepared for effective online learning. The lack of online teaching skills, no training for preparing lesson plans, poor or no hands-on training of software, unavailability of infrastructure, etc. among the educators of developing and underdeveloped countries stand as a major challenge. The trend of online learning has been benefiting the learners from developed countries with sound technological infrastructure more than the developing and poor countries, resulting in a huge gap between education rich and education poor countries. Over the years, India has introduced several public policies in different sectors to acquaint and encourage citizens to accept digital technology for a wide range of benefits. Of late, digital activity is gaining acceptance across different sectors including education, especially in private educational institutes, coaching centers, and distance learning universities in pre-COVID-19 India.

In a country as diverse as India, along with overcoming the infrastructure barrier, there needs to be a focus on overcoming the barriers of language and content (Saini, 2018). The migration to online learning has been looked at as a good solution for the future by experts while overcoming the infrastructural barriers in gradual progression to maintain quality and accessibility to meet the learning needs of the growing population of the country.

There may be numerous pros and cons of online education with respect to the students of different classes, castes, genders, and economic conditions. Despite all odds, the government and stakeholders of educational institutions have been working hard to strengthen the knowledge of the individual, larger community, and society for any normal and future crisis situations. This paper concentrates on the socio-demographic impact of the introduction of online learning process in higher education on students of different classes, castes, genders, urban, and rural areas in higher education.

Digital Divide in the Current State

Currently education is imparted in a faster mood through online platforms/technology (Vara Lakshmi, 2016:63). At this present unprecedented time, it served as a convenient and useful mode to access for both educators as well as learners. Undeniably, digitalisation has brought the most significant transformation in the society. On the other side, digital divide is also a major area of concerns. Majority of those who belong to the underprivileged group are the ones who are unable to access internet due to poor network connections, electricity failure in remote places, lack of quality laptops /smart phones /computer, cannot afford to buy or repair the system at home, unable to understand the online classes, fear of facing technology-based learning, teachers lacking digital literacy skills etc. This highlights the need of the hour in bridging the digital divide. The New education policy 2020 has emphasized the use of technology in imparting quality education, language barrier between teachers and students can help to bridge the digital divide situation in India, innovation of digital libraries, promoting language learning and ensure access to education given specific attention to differently-abled children.

The Changing Landscape of Education:

Novel Coronavirus causing COVID-19 has brought the mankind to an unprecedented situation with a lockdown. Lockdown was ensured focusing on stern case isolation, social distancing of the entire population, asking public to self-quarantine at home, complete closing of educational institutions, malls, IT sectors, shops so that all stay at home to avoid getting contracted or spreading COVID 19 pandemic. In India the productive age group are the students. Students at schools are in the verge of encountering educational challenges affecting their physical, psychological and

emotional wellbeing. In this perspective, this study is focused to analyse the challenges faced by students when they are unable to cope with the learning technologies. The Educational system in India ensures universal education. COVID 19 brought an educational transformation among the educational fraternity. The pandemic has opened gates to digital technologies such as blended learning, flipped classrooms, use of app, on the other side it was not made accessible to all. Both educators and learners had to meet different kinds of digital challenges but had to move on with the digital learning. During this pandemic, the transition has been quite smooth for privileged students, the underprivileged ones are in a pitfall, majorly because of a lack of access to Internet services and electronic devices to view online content, leading to poor and unequal quality of educational services. These unequal levels of access give rise to a digital divide among the students in accessing online education. Therefore, it becomes important to address the issues associated with online education (Kaur, Sampreet and Jain, Ayushi (19 June 2020, The Hindu).

Rationale behind the Study:

The study is important to understand the effect of COVID 19 and the influence of digital education among students. This study focuses to unravel the digital divide and following criteria included access to Internet facility, electricity failures, and lack of possessions of laptops /smart phones /computer, both teachers and students lacking digital literacy skills.

Review of Literature:

Fast research growth and technology have made distance education easy (McBrien et al., 2009). "Most of the terms (online learning, open learning, web-based learning, computer-mediated learning, blended learning, m-learning, for ex.) have in common the ability to use a computer connected to a network, that offers the possibility to learn from anywhere, anytime, in any rhythm, with any means" (Cojocariu et al., 2014). Not only the teachers but also the students are facing challenges due to a deficiency in proper learning attitudes, lack of suitable materials for learning, more involvement in classroom learning, lack of self-discipline, and the inadequate learning environment at some of their homes during self-isolation (Brazendale et al., 2017). Using a qualitative content analysis approach, the study conducted by Sun and Chen (2016) reviewed 47 published studies and research regarding online teaching and learning since 2008. Their study primarily focuses on how theories, practices, and assessments apply to an online learning environment. Some prominent factors required for effective online instruction included well-designed course content, motivating interaction between the instructor and learners, well-prepared and fully supported instructors, creation of a sense of online learning community, and rapid advancement of technology Sun and Chen (2016).

In their systematic analysis, Navarro and Shoemaker (2000) observed that the learning outcomes of students having online classes were as good as or better than traditional classroom learning, irrespective of the background characteristics of the students. The student learners were highly satisfied with online learning. Lederman (2020) had the opinion that the COVID-19 crisis compelled both teachers and students to embrace the digital academic experience of the online teaching-learning process. Bao (2020) was perhaps one among the early researchers during the pandemic who described how universities have been moving from classroom-based education to online education, owing to the exponential number of COVID-19 cases. The teachers have been delivering course content through various online platforms, including online educational platforms, videoconferencing software, and social media (Aguilera-

Hermida, 2020). The online educational platforms like Google Classroom and Blackboard allow teachers to share notes and multimedia resources to continue the regular studies of students. Students can submit their assignments via educational platforms and teachers can track the progress of students.

Videoconferencing tools such as Google Meet, Zoom, and Microsoft Teams have been playing important roles in delivering online lectures and organizing discussion sessions. In fact, these platforms typically support slideshows and have several useful features. A number of universities and institutions of higher education have been disseminating course material through their official websites (Chatterjee & Chakraborty, 2020). Several countries were equipped with significant infrastructure for online education before the pandemic hit the world (Mishra et al., 2020). Despite this, not all universities were prepared to shift to complete online education. There are some empirical studies that suggest that students have a better learning experience in a physical classroom than through online education (Bojović et al., 2020). Students miss the assistance they obtain from their peers in classrooms and laboratories and access to a library (Aguilera-Hermida, 2020). However, students believe that online education facilitated the continuation of their studies during the pandemic (Mishra et al., 2020). The population of OBC consisted of 52% of the country's population according to the B P Mandal Commission report (TNS, 2021) of 1980, and it was determined to be 41% in 2006 (TNN, 2007) by the National Sample Survey Organisation. A constitutional provision of 27% reservation (PIB, 2014) was made in public sector employment and higher education to uplift the OBC.

The review of literature suggests that online learning has both positive and negative aspects in terms of delivery of content, current environment, and availability of infrastructure. The trend of learning via online mode is not new for the students belonging to privileged classes in India. There are a section of people opting for online learning via various platforms like edX and Coursera for better learning and international exposure. The present crisis of the pandemic forced some students to not be able to carry out their studies in the online mode due to several to social, economic, and infrastructure related issues. These issues include no or poor Internet facilities, no mobile phone, laptop or computer, no conducive environment for learning, etc. The sample for the current study mainly represents only those higher education students who were forced to go to an online mode of learning.

The researchers have not found any studies on the effectiveness of online learning among the students of higher education of varied demographics during the COVID-19 pandemic. The current study may be helpful to understand the effectiveness of online learning especially among the vulnerable groups of the society during the pandemic. Horton (2011) defines "e-learning as a set of instructions delivered via all electronic media such as the internet, intranets, and extranets". A study by TagreedKattoua et al (2016) mentioned that many students want to learn online and in turn get degrees from worldwide colleges and universities, but still cannot go anywhere as they live in isolated areas without proper communication systems (cited in Tarhini et al., 2014; Darawsheh et al., 2016). Consequently, many researchers encourage learning courses under the e-learning system as it saves time and energy of those students staying at any far off distant regions from the universities or colleges they have enrolled (Hubackova and Golkova, 2014; Alenezi et al., 2015). Indeed, e-learning adoption is increasing in most universities and institutions of higher learning all around the world. E-learning which is also known as web-based learning, is defined as the delivery of education in a flexible and easy way through the use of internet to support individual learning

or organizational performance goals (Clark and Mayer, 2011, Maqableh et al., 2015). In a study by Vara Lakshmi (2016:63) mentioned that there is an increase in the student engagement as it combines various instructional styles (creativity, fun and entertainment on cards via the wonderful Apps, podcasts, videos, interactive software, e books and online interactive electronic boards). It is also mentioned that "With this technological inclusion in the school teaching the students feel studying as enjoyable, easy, competent and above all interesting". In a study by Ludeman et al (2009) mentioned that training for the teachers can improve student learning in educational programming for the instructors to facilitate the goals aligned to the learning goals of higher education institutions (cited in Toquero 2020)

Research Questions and Hypotheses

The current study investigates the effect of the sudden shift of the entire learning environment from physical to online mode. The research questions formulated for the study are as follows.

RQ1: How or what were the opinions of the students regarding online mode of learning?

RQ2: How has online learning affected the students of different groups, particularly disadvantaged members of society, including OBC, SC, ST, rural, and female students?

RQ3: Will the online mode of learning will reduce the discrimination among the different socio-economic groups of the society?

The following hypotheses have been framed and will be tested from the data collected.

H1: Different sections of the society were differently impacted due to the sudden shift to an online mode of learning.

H2: There were sections of the society who lacked sufficient infrastructure for online learning.

H3: Online learning is considered less effective and the interaction level is also less.

Research Methodology

There is the need during the ongoing pandemic to study and understand the efficacy of online education when students of various disciplines of India are entirely dependent on learning online. An explorative research design technique has been chosen for this study, and the analysis in this paper will also look into the following aspects of online learning.

1. Frequency of participation in learning via online classes, the kind of devices used, mode of connection, and the platform used for learning online.
2. Suitability of the additional e-material available for the online learning process among learners.
3. Effectiveness of online learning among students in higher education. (Satisfaction, understanding the subject, classroom adjustment, teacher-pupil interactions, peer interaction/sharing).
4. Constraints faced during online learning (gender, economic status, social status, place of residence, and health).
5. Problems faced by e-learners in the process of learning such as conceptual, theoretical, and practical clarity of the content, technical problems, and the physical environment.
6. Effectiveness of online learning in the present situation of the pandemic and future implications.
7. Need and preference of learners for better learning and understanding of the content and realistic approach to the subjects.

A Google Form containing relevant questions was developed

to understand respondents' experiences and perception of online classes during the pandemic. The link to the questionnaire was circulated online via various Facebook and WhatsApp groups of students of higher education, aged 18-30 years across India. The link was kept active for 15 days from June 1, 2020 to June 15, 2020 to collect responses from the e-learners of the target group. The responses of 289 e-learners were recorded during the period. All the questions were close ended. The collected data was recorded on a nominal or ordinal scale. Therefore, the data received is categorical data. Pertinent tools to analyse categorical data were used, which include frequency analysis, contingency tables, and chi-square test for testing the associations of the categorical data. Using cross-tabulation, we could get grouped frequencies to find whether there is a pattern of association between two or more variables.

Analysis of Research Findings:

Out of 289 responses, 171 (59.16%) were male and 118 (41.83%) were female. In terms of caste, the majority of the responses were received from the General Category ($n=192$, 66.43%) and Other Backward Class (OBC) ($n=67$, 23.18%); only 15 responses were received from members of a Scheduled Caste (SC) and Scheduled Tribe (ST) each. A total of 211 (73.01%) students responded that they participate most of the time in online learning, whereas 69 (23.87%) said that they participate some of the time. The number of students who seldom or never attended online classes was very low (8 students and 1 student, respectively). This clearly reflects that students did not face much difficulty starting to learn online. The majority of students ($n=245$, 84.77%) were using smart phones for online learning, whereas the uses of laptops, tablets, and desktops were limited to only 38, 4, and 2 students (13.15%, 1.38%, and <1%) respectively. More than three-quarters of the students (76.12%) used mobile Internet to participate in online learning, which indicates that using wi-fi connectivity is less popular or not available. The number of students using Zoom as a platform for learning was the highest ($n=153$, 52.94%); 60 (20.76%) used WhatsApp, 33 (11.42%) used Google Classroom, 21 (7.27%) used Google Meet, and 22 (7.61%) used other platforms of class room meetings. When it comes to receiving study material, most of the learners preferred WhatsApp ($n=252$, 87.20%) and only 35 (12.11%) preferred other online platforms.

E-learning Material

A total of 122 (42.21%) strongly agreed and 124 (42.91%) agreed with the statement that hands on experience in a physical classroom may not work in an online mode. A total of 19 e-learners (6.57%) could not decide. Another 18 (6.23%) and 6 (2.08%) respondents disagreed or strongly disagreed, respectively, with the statement that practical exposure with a teacher in a physical classroom interaction may not work online. The responses reflect that the majority of the students felt that they get less practical exposure in the online mode of learning.

Issues and Constraints

On the question about whether the online schedule of classes caused any problem to their family members' daily routine or not, the majority of students reported that it has created a little problem ($n=108$, 37.37%) or it was never a problem ($n=94$, 32.53%). However, when the responses of the same questions were cross tabulated with gender and caste and a chi-square test was applied, it was found that responses were independent of caste ($\chi^2(12, N=289) = 9.6776, p = .1389$), but related to gender ($\chi^2(4, N=289) = 13.531, p = .009$). These test results suggests that female students had to adjust their household work for online classes. In addition, while this does not directly indicate infrastructural issues, it may be an indication that female students may not own their own device for attending online classes, which may be attributed to less

infrastructure. Therefore, these results may support H2, which stated certain sections of society have insufficient infrastructure for online learning.

Attitudinal Change for Online Learning

The number of respondents who feel that India is not ready for online classes was found to be highest ($n=112$, 38.75%) in the survey. An equal number ($n=65$, 22.49%) of participants responded somewhat or yes, whereas 47 (16.26%) of respondents were not sure. The responses of the participants indicate that the present situation for online learning is not encouraging when considering India's readiness for online learning in similar situations in the future.

Comparison with Traditional Learning Methods

On the question of whether the students, who have been forced to attend online classes due to the pandemic, had attended classroom classes before the outbreak of COVID-19, the majority of the students, which includes very frequently (17.99%) and frequently (46.37%), had attended classes regularly, 17.65% attended occasionally, and 13.49% rarely attended classroom classes before the outbreak of COVID-19, whereas a small percentage (4.50%) never attended classes held in regular classrooms (see Table 2). The majority of the students (64.36%), which includes very frequently (17.99%) and frequently (46.37%), attended online classes regularly.

The Way Ahead: Replacing Classroom Teaching

More than half of the respondents (53.29%) had the opinion that online teaching cannot replace classroom teaching, whereas 22.49% believed that online teaching can replace traditional classroom teaching; 9.00% of the respondents were not sure, and only 15.22% believed that online teaching can replace classroom teaching. The limitations of online learning may hamper the majority of the respondents' ability to understand contents and develop skills related to the subjects. More than 70% (71.28%) of the respondents believed (yes or somewhat) that online learning has affected the art of teaching and zeal for learning (see Table 3). A total of 28.75% (19.38% no and 9.37% not sure) have different views. More than three-quarters of total respondents, who either agreed or strongly agreed, believe the future of learning would be blended, that is, a combination of classroom and online learning. Only 2.42% disagree and 6.23% were not sure about it.

OBSERVATIONS AND CONCLUSION

The findings of the study suggest that there is a serious need to invest a sizeable amount of money in the development of infrastructure and to frame national policy to overcome challenges faced during the stop-gap arrangement of the teaching-learning process and continue it as an additional mode of teaching and learning even after the pandemic ends. With the current experience of online education, advancement in technologies, proliferation of education, and ample opportunities of learning from experts, the modes and ease of learning have been significantly changing over a period of time. Hence, there is a need to develop new theories that deal with effectiveness, opportunities, and necessity for online learning.

The following observations are derived from this study.

- Different sections of the society were differently impacted due to sudden shift on online mode of learning.
- There were sections of the society who did not have sufficient infrastructure for online learning.
- Discrimination among different classes may not be there as it takes place in physical classes, but the online mode of education will widen the gap among different sections of the society.
- Teaching satisfaction level with the online mode is less than in-person education mode and even less for suburban and rural students.

- Constraints of online education are associated with gender and caste, indicating that online education creates more division in an already divided society.

The findings of the study may not be suitable to derive a universally acceptable conclusion, as it was conducted with a small group of people. The results may vary due to different social and economic standings of different groups of students of higher education, who have been continuing their online education during the pandemic crisis. However, the results of the study may give a direction to future researchers who wish to conduct similar studies with a larger sample and derive any model, concept, or theory based on the findings.

REFERENCES:

1. Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to COVID-19. *International Journal of Educational Research*
2. Bao, W. (2020). COVID 19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*,
3. BBC. (2019, June 19). *What is India's caste system?* <https://www.bbc.com/news>
4. Bojović, Ž., Bojović, P. D., Vujošević, D., & Šuh, J. (2020). Education in times of crisis: Rapid transition to distance learning. *Computer Applications in Engineering Education*,
5. Brazendale, K., Beets, M. W., Weaver, R. G., Pate, R. R., Turner-McGrievy, G. M., Kaczynski, A. T., Chandler, J. L., Bohnert, A., & von Hippel, P. T. (2017). Understanding differences between summer vs. school obesogenic behaviors of children:
6. Census India. (n.d.). *Scheduled castes and scheduled tribes*. <https://censusindia.gov.in/>
7. Chatterjee, I., & Chakraborty, P. (2020). Use of information communication technology by Medical Educators AMID COVID-19 pandemic and beyond
8. Cojocariu, V.-M., Lazar, I., Nedeff, V., & Lazar, G. (2014). SWOT analysis of e-learning educational services from the perspective of their beneficiaries.
9. Lamrabat, A. (2020). Protecting and mobilizing youth in COVID-19 responses | United Nations for Youth. *United Nations Youth*. <https://www.un.org/development/>
10. Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.
11. Lederman, D. (2020). *Will shift to remote teaching be boon or bane for inline learning? Inside Higher Education*. <https://www.insidehighered.com>
12. McBrien, J. L., Cheng, R., & Jones, P. (2009). Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. *The International Review of Research in Open and Distributed Learning*,
13. MES. (2011). *Executive summary of the report of the working group on S&T for the vulnerable sections of society*.
14. Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research*
15. Nadikattu, R. R. (2020). Information technologies: Rebooting the world activities during COVID-19. *SSRN Electronic Journal*
16. Navarro, P., & Shoemaker, J. (2000). Performance and perceptions of distance learners in cyberspace. *American Journal of Distance Education*,
17. PIB. (2014, August 14). *Status of Reservation of OBC in Various States*. <https://pib.gov.in>
18. Saini, R. (2018). Mapping digital learning <https://www.hindustantimes.com-india/>
19. Sun, A., & Chen, X. (2016). Online education and its effective practice: A research review. *Journal of Information Technology Education*
20. TNN. (2007). OBCs form 41% of population: Survey. *India News - Times of India*. <https://timesofindia.indiatimes.com>
21. TNS. (2021, April 8). *Why no govt wants OBC count in census*.
22. UNESCO. (2020, June 15). *Education: From disruption to recovery*.
23. UNICEF. (2021, March 10). *COVID-19*:
24. Bao, Wei. (2020, 7 April). <https://onlinelibrary.wiley.com/doi/full/10.1002/hbe.2.191>
25. Chauhan, Shreya. (2020, 18 July). <https://www.indiatimes.com/trending/social->
26. Kannan, Sindhu. (2020, 21 September). timesofindia.indiatimes.com/city/chennai/
27. Kaur, Sampreet and Jain, Ayushi. (2020, 19 June). How to bridge the digital divide in education. *The Hindu Business Line*
28. Koshy, M. Sneha. (2020, 2 June). NDTV. <https://www.ndtv.com/india-news>
29. Misra, Smriti and Mishra, Lal Nand. (2020, 13 June). Digital divide in India's education. *The Statesman*,
30. Nath, Akshya. (2020, 3 September). Tamil Nadu: Two student suicides raise concerns over online mclasses. *India Today*,
31. Pandey, Vidhu. (2020, 24 June). India's Education System Feels a Digital Divide
32. Roy, Suparna. (2020, 25 May). Education in lockdown: Poor internet connectivity
33. Sharma, Kritika. (2020, 16 April). In India, over 32 crore students hit by Covid-19
34. Sundaram, Ram. (2020, 29 April). Chennai: Online classes out of reach
35. Tandon, Tulika. (2020, 10 August). Online classes: village students climb hills
36. Toquero, C. M. (2020). Challenges and Opportunities for Higher Education
37. *Pedagogical Research*, 5(4), em0063. <https://doi.org/10.29333/pr/7947>
38. Yadav, Avanti. (2020, 24 August). Tamil Nadu tribal students climb a hill to access the internet to access the internet for online classes/ Vara Lakshmi. V. (2016).
39. Digital Education In India. *International Journal of Innovative Research in Information Security (IJIRIS)*, 9(3), 62-66.