

A Study on Issues and Challenges Faced by Tribal Students in Digital Education

Dr. Roshan Tulshiram Gajbe

Assistant Professor

Tirpude College of Social Work (Autonomous),

Nagpur, Maharashtra, India

Email: roshan.gajbe25@gmail.com

Abstract:

Digital education has the potential to revolutionize the entire education sector of the country and transform India into a knowledge economy. The National Education Policy 2020 recognizes the importance of leveraging the advantages of technology while acknowledging its potential risks and dangers. In the meantime, the existing digital platforms and on-going ICT- based educational initiatives must be optimized and expanded to meet the current and future challenges in providing quality education to all. Education is the most essential part for the personal growth and development of a student to contribute to the development of the society. However, the digital divide in India has impacted those in rural areas, those with low incomes, and disadvantaged groups like the STs. Due to this lower economic status tribe unable to afford smart phone, laptop, TV and other digital gadgets which is need for digital education. And this economic divide makes pushes them into the digital divide. Digital divide arises due to unequal distribution of wealth and income among the communities. The ill affordability of digital gadgets to economically weak sections especially Schedule Tribes. The physical barriers create a hindrance for the tribal children. In view of the above, this study examines the issues and challenges faced by tribal students in digital education. In the present study data was collected from 360 students who are studying in Vth to Xth standard. Data collection was carried out by using a structured questionnaire and by following survey method. On the basis of the study results it is evident that most of the high schools of tribal area of Ramtek block of Vidarbha have smart classroom and they provide digital learning materials (videos, e-books, interactive modules) to the students also cover whole curriculum of various subjects through digital education. While they face challenges such as lack of devices/hardware, poor internet connectivity, frequent power outages, lack of training for teachers, digital content not in local language, maintenance/repairs delayed, unable to use devices properly and high cost of data/devices.

Key Words: Digital Education, Issues and Challenges, Tribal Students.

1. Introduction:

Digital education can be defined as the educational process that uses digital technologies, devices and content for teaching and learning. Digital education benefits all educational stakeholders such as teachers, students, parents, and educational institutions by providing an interactive learning environment. The purpose of this study was to understand the effectiveness of digital education on students' academic performance and to analyze the acceptance of digital education products among teachers.

The creation of digital infrastructure, digital service delivery, and digital literacy are the three

main pillars of the "Digital India" initiatives. The idea of digital learning is not new and has been existed in various forms for many years, but after the covid pandemic interrupted face-to-face learning, its importance increased significantly. Online education has become a necessary component of our life after the COVID-19 pandemic. With the use of online learning and teaching elements, institutions have made steps to digitally transform not just their processes but also their educational offerings. E-learning has been for a while, but NEP 2020 makes it a requirement for educational platforms. Education systems in schools and higher education institutions have changed as a result of the advent of new technology-assisted learning tools like tablets, MOOCs, smartboards, and virtual laboratories.

Online education is a particular priority of the NEP 2020.

The main advantage of digital education is that teachers can create interactive content and share it with students. Content includes videos, animations, simulations, and other multimedia resources to help students understand complex concepts and ideas. Additionally, ICT tools enable teachers to monitor student progress and provide them with personalized feedback and support. As a result, the traditional learning environment is evolving towards smart or digital classrooms.

With the increasing availability of digital devices and internet connection, students can access multimedia content from anywhere and at any time. This makes education more inclusive and equitable, ensuring that no student is left behind due to geographical, economic, or social barriers. The Government of India (GoI) is also committed to make education accessible to all students, regardless of where they live or their level of knowledge. The government is promoting digital education in government schools across rural and remote areas of the country through various initiatives.

There is no doubt that the Digital India Initiative has been success in its first five years. However, it is imperative that an accelerated focus is placed on certain core components such as enhancing digital literacy and accessibility to truly realise the potential of India's digital economy. The government is always arguing that the digitalization and new digital innovations are reaching at each and every corner of the nation and made a transformation in their lives. But, there is an apprehension that whether the bottom level and marginalized communities are having access to these digital innovations. Among marginalized communities, Scheduled Tribes (STs) are geographically, socially isolated and economically marginalized communities. In this context, it is a serious question as to whether these digital initiatives actually reach the STs and do the means of digital innovations are familiar to the communities.

2. Importance of the Study

Digital education has the potential to revolutionize the entire education sector of the country and transform India into a knowledge economy. The need of the hour is to stick to the basics and stay abreast with constantly evolving

digital education technology and better internet infrastructure clubbed with accessible and affordable gadgets will keep India on the right track to achieve universal education. Education sector in India has seen a series of rapid expansion in last couple of years which helped to transform the country into a knowledge haven. The study clearly points that development of education infrastructure is required for the development of digital education across the country. This will lead to considerable increase in infrastructure investment in the education sector. Democratic governance, English speaking tech-educated talent and a strong legal and intellectual property protection framework are required for the development of digital education in Indian society. Government of India has also taken major Initiatives for the development of digital education in India like opening of IIT's and IIM's in new locations as well as allocating educational grants for research scholars in most government institutions.

The digital divide in India has impacted those in rural areas, those with low incomes, and disadvantaged groups like the STs. The STs in India have faced grim consequences of the digital divide, including limited access to education and health. In the context of the pandemic, it has had disastrous consequences as access to vaccines, healthcare, and formal education hinged on access to ICTs. As discussed above, the reasons pertain to demand and supply-side challenges, including infrastructure and literacy. Limited broadband infrastructure, low-income levels, and low digital literacy have limited the prospects of digital inclusion of STs. If the government wants to achieve its proclaimed 'Digital India' initiative, the digital exclusion of STs needs to receive meaningful attention. The state has an important role to play in the bridging of this divide. The government has attempted to tackle the issue through initiatives like Bharatnet, aiming to increase broadband penetration in India. However, the extent to which laws and policies have improved or worsened the divide needs to be determined.

3. Review of Literature:

Yesmin and Khan (2021) depicts the current panorama of virtual learning of the tribal students in Bangladesh with the constrictions and possible solutions. The study aimed to deal with the major issues about tribal students' online education by bringing out the key restraints of their distance

learning and the possible solutions. The results suggested that the tribal students have not agreeably received adequate facilities such as technological support, university funding, departmental encouragements, or monetary benefits from the quota system in the current pandemic (COVID-19) time to attend virtual learning sessions though they expect arrangements and future steps for academic learning. All institutions also could not provide them adequate opportunities to attend online classes. In conclusion, the study proposed some imperative measures for example, inclusion of flipped classroom, introducing blended learning henceforth, revising quota facilities, adequate electricity support and internet connection, to help the tribal students as they should not get deprived.

Nayak and Alam (2022) explores how the pandemic, along with digital divide, deteriorated the educational system among the socially deprived groups (i.e. tribals also known as indigenous or *Adivasis*) and place them in a disadvantageous position. The paper reflects on how the Covid-19 pandemic re-configured the pre-existing issues of educational inequalities and how the digital dived have been manifested in a way that has particularly affected the young tribal girls. Based on the information collected from the interview, the study emphasizes on re-thinking the digital learning ecosystem and provide policy recommendations to counteract the worsening digital divide and educational inequalities among socially deprived groups.

Sadiq (2022) analyses the impact and scope of digitalization in tribal education in India. Digitalized education has its respective pros and cons, but the question of accessibility and affordability remain the most important when we talk about tribal areas which are still not completely connected by internet. Another difficulty is the lack of technical knowledge among tribal people in rural area where parents, students, other people are not aware of the use of technology. Even teachers are not techno-friendly which also makes the use of digitalized education a problem. There is a need to link the tribal people to mainstream and digitalized education could be a medium. But due to lack of resources and infrastructure, digitalized education could prove to be futile and only a formality. There is a need to establish stable internet connection, electrification

and provide basic technical assistance to people in tribal areas.

Thankalayam et al., (2024) determined the challenges faced by tribal students in the Idukki District of Kerala State in online education and to understand the social and technological challenges they face in the learning process. An in-depth interview method was adopted for the study. This qualitative study explored the perspectives of teachers who teach tribal students.

Xalxo et al., (2025) investigates whether the online education ecosystem is conducive to facilitating the teaching-learning process and identifies any gaps that require attention. The study found that the online education ecosystem is surrounded by challenges: challenges of student engagement, technical issues, lack of parental involvement due to illiteracy, parents struggle to balance their roles, and the concept of the physical study room. It also presents the challenges related to the increased workload that the teachers must adapt to, the challenges they feel about learning new technologies and balancing teaching methods, and assessments that require fairness and connection.

4. Objectives of the Study:

- To examine the issues and challenges faced by the tribal students in digital education.
- To measure the level of satisfaction among tribal students regarding digital education.

5. Research Methodology:

The nature of study was analytical and descriptive. The study was conducted in the high school in Ramtek Block in Vidarbha region in the state of Maharashtra. The universe consists all the students who are studying in Vth to Xth standard at all taluka's of Ramtek district in the Vidarbha region of Maharashtra State. The analytical sample design with quota sampling method was applied to draw the required sample from the universe in probable sampling. The sample were 360 students who are studying in Vth to Xth standard. In the present study, data collection was carried out by using a structured questionnaire (research instrument) and by following survey method. In this study, secondary data was collected from the general publications, scientific journals, publications of various Statutory Bodies, research institutes, etc. and other internet sources.

Statistical analysis of data was done with the help of various statistical tests. The descriptive statistics, such as frequency, percentage, etc. was determined. All statistical analysis of the data was done by using Statistical Package for Social Sciences (SPSS) 18.0 Software. The data was interpreted based on the statistical analysis.

6. Result and Discussion:

Table 1: Issues and challenges faced by the tribal students in the school

Issues and Challenges	Yes		No		Total	
	Frequency	%	Frequency	%	Frequency	%
Lack of devices/hardware	299	83.1	61	16.9	360	100.0
Poor internet connectivity	304	84.4	56	15.6	360	100.0
Frequent power outages	316	87.8	44	12.2	360	100.0
Lack of training for teachers	184	51.1	176	48.9	360	100.0
Digital content Frequency in local language	360	100.0	0	0.0	360	100.0
Maintenance/repairs delayed	288	80.0	72	20.0	360	100.0
Students' inability to use devices properly	246	68.3	114	31.7	360	100.0
High cost to students/ families for data/devices	309	85.8	51	14.2	360	100.0

Above **Table 1** presents information pertaining to the issues and challenges faced by the high school students of tribal area of Ramtek block of Vidarbha.

- **Lack of devices/hardware:** 83.1% respondents reported that there is lack of devices/hardware while 16.9% respondents do not feel there is lack of devices/hardware.
- **Poor Internet Connectivity:** 84.4% respondents reported that there is poor internet

connectivity while 15.6% respondents do not face this challenge.

- **Frequent power outages:** 87.8% respondents reported that there are frequent power outages while 12.2% respondents do not face this challenge.
- **Lack of training for teachers:** 51.1% respondents reported that there is lack of training for teachers while 48.9% respondents do not face this challenge.
- **Digital content not in local language:** 100.0% respondents reported that digital content is not in local language.
- **Maintenance/repairs delayed:** 80.0% respondents reported that maintenance/ repairs are delayed while 20.0% respondents do not face this challenge.
- **Students' inability to use devices properly:** 68.3% respondents reported that students are unable to use devices properly while 31.7% respondents do not face this challenge.
- **High cost to students/ families for data/devices:** 85.8% respondents reported that students/families have to bear high cost of data/devices while 14.2% respondents do not face this challenge.

Table 2: Assessment of tribal students' satisfaction with digital education

Sl. No.	Satisfaction Level	Frequency	Percent
1	Highly satisfied	25	6.9
2	Somewhat satisfied	161	44.7
3	Neutral	93	25.8
4	Dissatisfied	55	15.3
5	Highly dissatisfied	26	7.2
	Total	360	100.0

Above **Table 2** presents response of the high school students of tribal area of Ramtek block of Vidarbha with respect to satisfaction with the digital education facilities provided in the school. 6.9% respondents are highly satisfied while 44.7% respondents are somewhat satisfied with the digital education facilities provided in the school. In addition to this 15.3% respondents are dissatisfied and 7.2% respondents are highly dissatisfied with the

digital education facilities. Further 25.8% respondents are neither satisfied nor dissatisfied with the digital education facilities provided by the school.

7. Conclusion:

In view of the study results it is evident that most of the high school students of tribal area of Ramtek block of Vidarbha face challenges such as lack of devices/hardware, poor internet connectivity, frequent power outages, lack of training for teachers, digital content not in local language, maintenance/repairs delayed, unable to use devices properly and high cost of data/devices. It is also found that most of the high school students are somewhat satisfied with the digital education facilities provided by the school. It is suggested that the government and educational authorities should prioritize the development of reliable internet connectivity, electricity supply, and digital infrastructure in tribal regions. Students in tribal areas often belong to economically weaker sections and cannot afford smartphones, tablets, or laptops. Government agencies and NGOs should provide subsidized or free digital devices to students. Special digital literacy programs should be conducted to familiarize tribal students with basic computer skills, online learning platforms, and safe internet usage. Schools in tribal areas should adopt a blended learning model, combining traditional classroom teaching with digital learning methods.

8. Acknowledgement:

I am thankful to Indian Council of Social Science and Research, New Delhi, for providing financial assistance for the research project entitled "Digital Education: Opportunities and Challenges Faced by Students in Tribal Area". The support enabled the completion of field investigations and data analysis presented in this paper. I gratefully acknowledge Deputy Director, Incharge, RP Division, ICSSR, Ministry of Education New Delhi and his team for their unconditional support.

9. Reference:

1. Agarwal, T and Panda, P. K. (2018). Pattern of Digital Divide and Convergence in Access to ICT Facilities among the Indian States, *Journal of Infrastructure Development*, 10(1-2), pp. 37-51.
2. Bathran, R and Ralph, H. J. (2016). ICT usage among Tribals in Tamil Nadu, *The Journal of Media Studies*, 7(1-2).

3. Dalal, R. S. (2023). Digitalization of Education under NEP, 2020: Prospects and Challenges, *International Journal of Humanities Social Science and Management*, 3(4), pp. 498-504.
4. E Pathshala. (n.d.). Nic. In. Retrieved April 2, 2023, from <https://epathshala.nic.in/>
5. Haleem, A., Javaid, M., Qadri, M. A and Suman, R. (2022). Understanding the role of digital technologies in education: A review, *Sustainable Operations and Computers* ,3, pp.275-285.
6. <https://education.vikaspedia.in/viewcontent/education/education-best-practices/remote-learning-initiatives-in-india/remote-learning-initiatives-in-maharashtra?lgn=en>
7. India Report- Digital Education, July 2021, Department of School Education and Literacy, Ministry of Education, Government of India, New Delhi
8. India Report Digital Education, Remote Learning Initiatives Across India, Department of School Education & Literacy Ministry of Human Resource Development Government of India, June 2020, p. 109.
9. Malik, S and Akhtar, N. (2022). Digital Divide and the Scheduled Tribes in India: Extent, Consequences, and Challenges, Social and Political Research Foundation, June 2022, SPRF INDIA.
10. MHRD (2018). All India Survey on Higher Education-2017-18, Ministry of Human Resource Development, Government of India, New Delhi
11. Ministry of Education. (2022, July 25). n. Diksha Platform.
12. Nayak, K. V., & Alam, S. (2022). The digital divide, gender and education: challenges for tribal youth in rural Jharkhand during Covid-19, *Decision*, 49(2), 223-237.
13. Patel, J. M. (2019). Web Based Tools of Technology In Future Teaching Learning Strategies, *International Education & Research Journal*, 3(2).
14. Pizarro, M. C. R., Caballes, J. R. B and Vianzon, M. B. A. (2024). Digital literacy of elementary teachers and its relation to performing their various school roles amidst COVID-19 pandemic, *World Education Connect Multidisciplinary e-Publication*, 4(8), pp.1-12.
15. Pratham Education Foundation & ASER Centre. (2020). Annual status of education report (Rural) 2020. ASER Center.
16. Qureshi, S and Trumbly-Lamsam, T. (2008). Transcending the Digital Divide: A Framing

- Analysis of Information and Communication Technologies News in Native American Tribal Newspapers, Proceedings of the 41st Hawaii International Conference on System Sciences – 2008.
17. Ramakrishnappa, V. (2022). Exclusion of Scheduled Tribes in Access to Digital Services in India: Bottlenecks and the Way Forward, East African Scholars J Econ Bus Management, 5(9), pp.251-255.
 18. Sadiq, S. S. (2022). The Future of Tribal Education in the Era of Digitalization, Issue 3 Indian JL & Legal Rsch., 4(1).
 19. Sahu, K. K. (2014) Challenging Issues of Tribal Education in India, IOSR Journal of Economics and Finance, 3(2), pp. 48-52.
 20. Thankalayam, S., Kamath, P., Merlin, P and Augustine, J. (2024). Development through ICT: A study on teachers' perspectives on challenges in online education for tribal students amid COVID-19, Multidisciplinary Science Journal, 7(1), p. 2025025.
 21. Xalxo, P. V., Kindo, J., & Kachhap, P. (2025). Online Education Ecosystem—Exploring the Challenges and Opportunities, European Journal of Education, 60(2), e70085.
 22. Yesmin, Q. F and Khan, M. E. I. (2021). Virtual Learning of the Tribal Students in Bangladesh: Constrictions and Propositions, International Journal of Evaluation and Research in Education, 10(3), 1038-1046.

