

Digital Divide among Manipur University Students: A Case Study on Access, Usage and Inequality in the Digital ERA

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Abstract

The digital divide presents a major challenge to equitable access to higher education, especially in regions with limited technological in regions with limited infrastructure. This case study investigates the extent and impact of the digital divide among students at Manipur University in Northeast India. The survey covered 300 students from the two schools i.e. School of Social Sciences and the School of Education. A structured questionnaire was distributed to the students including the rural and urban students. Data is analyzed with the help of the percentage method; the study assesses disparities in digital access, internet connectivity, device ownership, digital skills, and academic participation. The results reveal significant inequalities, particularly among students from rural backgrounds and economically weaker sections, exacerbated by frequent internet shutdowns and infrastructural gaps. The paper concludes with policy recommendations to promote equitable digital learning. Both institutional and policy interventions are needed as to conduct regular workshops on basic and advanced digital skills (e.g. using LMS, digital research tools, cyber security) and promote asynchronous learning options allowing flexible participation.

Keywords

digital divide, students, access, inequality.

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Introduction:

In the 21st Century, digital connectivity has become a fundamental requirement for access to quality education, particularly in higher education institutions. Digital technologies are reshaping higher education across the world, enabling new forms of teaching, learning and collaboration. From online classes to digital libraries and virtual research platforms, universities now depend heavily on technology. Yet, access to these digital opportunities is far from uniform. The gap between those who can effectively use technology and those who can not-a phenomenon known as the digital divide- has become one of the most pressing educational challenges.

In India, the push forward digital learning intensified during the COVID-19 pandemic, when physical classes were suspended and universities rapidly transitioned to online platforms. For many institutions, including Manipur University, this shift revealed both the potential and the perils of digital education. It further accelerated the shift to online and blended learning models, exposing deep-rooted inequalities in access to digital tools and internet connectivity, often referred to as the digital divide.

While much of the discourse around digital education has focused on metropolitan areas, students in remote and conflict-affected regions like Manipur, a northeastern state in India, face unique challenges. Frequent internet shutdowns, limited broadband infrastructure, power outages, and socio-economic constraints contribute to a growing digital exclusion. At the center of this scenario is Manipur University, the state's premier higher education institution, whose students come from diverse social, economic and geographic backgrounds.

The term digital divide was introduced by Larry Irving, Jr., former US Assistant Secretary of Commerce for Telecommunication and Information, in the mid-1990s to focus attention on the gap in access to information technologies. It is traditionally referred to as the gap between those who have access to digital technologies (computers, internet) and those who do not. However, some contemporary scholars recognize that digital inequality is multi-dimensional. It involves not only access but also usage, skills and outcomes. According to Van Dijk's (2020) framework, the digital divide consists of a) access divide-physical availability of devices and internet connectivity. b) Usage divide-differences in frequency, purpose, and quality of digital engagement. c) Skills divide-variation in the ability to use digital tools effectively and critically d) outcome divide-differences in the benefits derived from digital participation.

Objectives:

- i) To study the access of digital devices and internet connectivity among Manipur University students.

- ii) To evaluate the patterns of digital usage for academic and non-academic purposes.
- iii) To identify the problems of digital inequality among students.

Review of Literature

Bansode and Patil (2014) examined additional factors contributing to the digital divide in India, pointing to disparities in education, income level and geographic access. Similarly, Anand and Nagpal (2017) studied the challenges faced by the Digital India initiative, which aims to bridge the divide by providing digital access to all citizens. They found that the program's success is hindered by infrastructural issues, digital illiteracy, and limited access in rural areas.

Barot Umeshbhai Barot (2020) discusses the digital divide in higher education, challenges and opportunities. The results show that the higher education remains a substantial barrier to equitable access and success for many students, particularly those from low-income or rural backgrounds.

Banker, Vipul P. and Vaja, Bharti L. (2020) analyze the significant issue of the digital divide in higher education particularly in India, where disparities in access to technology hinder students' academic performance. It emphasizes the critical role of academic libraries in bridging the gap to improve the resources, skill development and awareness programs. It also found that a comprehensive overview of the challenges posed by digital inequality and underscores the need for the targeted interventions from educational institutions and library professionals to reduce these disparities.

Anwaar Ahmad Gulzar, Ziarab Mehmood and Ijaz Ahmad (2024) highlight the impact of the digital divide on learning outcomes of students in higher education institutions. The study found that the detrimental effects of the digital divide on students' educational experiences. To bridge the gap and foster equitable learning environments is insight for policymakers and educators.

Kumari Soujanya Sai B., Lavanya P. and Padman Bika P. (2024) discuss bridging the digital divide-addressing inequality and access disparities. It highlights the digital divide in India perpetuates inequalities and hinders socio-economic progress, affecting access to essential services like education, employability, healthcare and governance. It also expresses the multifaceted nature of digital inequality, driven by socio-economic status, digital literacy, infrastructure deficits, demographic factors and systemic barriers.

Plan and Procedure: The study adopted a descriptive research method using both qualitative and quantitative methods. The survey covered 300 students

from the two schools i.e. School of Social Sciences and the School of Education. A structured questionnaire was distributed to the students including the rural and urban students. Data is analyzed with the help of percentages and graphical presentation.

Result and Discussions:

The data were analyzed according to the objective-wise as follows: -

Table No.1 Access to the digital divide among Manipur University Students

Sl. No	Type of Device Owned	No. of Students	%	Remarks
1	Smartphone only	195	65	Most students rely on smartphones for all academic tasks
2	Laptop/Desktop	75	25	Ownership is concentrated among urban and higher-income students
3	Shared/Borrowed Device	15	5	Common among rural and low-income families
4	Tablet	15	5	Mainly used by students in professional courses
5	No Personal Device	Nil	Nil	Depend entirely on the university or public access points
Total		300	100	

From the above table no.1 out of 300 students 195 (65%) of the students owned smart phones but only 75(25%) had access to personal laptops or desktops. 15 (5%) of students relied on shared or borrowed devices, usually from family members or friends as well as 15(5%) of students using tablets for professional purposes like Management studies and Vocational and Entrepreneurship training course students. The study found that all the students were using smartphones and no students were dependent entirely on the university or public access points.

Table No.2 Internet Connectivity and Accessibility

Sl. No	Type of Internet Connection	No. of Students	%	Notes
1	Mobile Data (4G/5G)	120	40%	Most common; frequent signal drops and limited data
2	Home Broadband/Wi-Fi	90	30%	Concentrated in the urban Imphal area
3	Campus Wi-Fi	60	20%	Intermittent coverage; not available in all hostels
4	Public Wi-Fi/Shared Access	15	5%	Found in libraries or cafes
5	No Regular Internet Access	15	5%	Students rely on offline notes or peer sharing
Total		300	100	

The above table no.2 indicates that the internet connectivity and accessibility of the students that among the 300 students 120 (40%) were using mobile data which is 4G or 5G. It also found that 90 students i.e. 30% were had broadband facility at their home and the students are mostly situated in urban areas and 60(20%) of the students were using campus Wi-Fi. While 15 (5%) of the students were using public Wi-Fi or shared access whereas 15(5%) of the students were no using regular internet for academic purposes. The students prefer notes and peer group discussions.

Table No.3 Purpose of Digital Usage at Different Times

Sl. No	Purpose of Digital Use	Daily Use%	Weekly Use%	Rarely/Never%	Remarks
1	Attending Online Classes	45(15%)	15(5%)	12(4%)	Some students miss sessions due to poor connectivity
2	Downloading Study Materials	30(10%)	12(4%)	9(3%)	Usage spikes before examinations
3	Research/Online Journals	21(7%)	27(9%)	21(7%)	Limited by subscription barriers
4	Communication with Faculty	30(10%)	18(6%)	15(5%)	WhatsApp and email are commonly used
5	Entertainment/social media	36(12%)	6(2%)	3(1%)	Nearly universal non-academic usage
Total		162	78	60	

The above table no.3 shows the purpose of digital usage in different times as categories in five purposes as attending online Out of 300 students 45(15%) students used daily while 15(5%) students used weekly and 12(4%) students used rarely as some of the students miss sessions or class due to poor connectivity. About downloading study materials 30(10%) students use daily while 12(4%) students use weekly and 9(3%) students use rarely as some of the students use only during examination time. The study also indicates that research online/journals was used by 21(7%) students daily while 27(9%) students used it weekly and 21(7%) students used it rarely. About the communication with faculty 30 (10%) students were connected daily as 18(6%) students connected weekly and 15(5%) students connected rarely with the teachers by WhatsApp or email. About the social media or entertainment that 36(12%) students used daily while 6(2%) students used it in a week and only 3(1%) students were not using social media.

Table No.4 Self-Reported Digital Skill Levels

Sl. No	Skill Category	High Skill	Moderate Skill	Low Skill	Comments
1	Basic Computer Operations	30(10%)	15(5%)	9(3%)	Most can handle basic tasks like typing and browsing
2	Online Research and Reference Tools	27(9%)	30(10%)	18(6%)	Many are unaware of citation or database tools
3	Learning Management Systems (LMS)	24(8%)	27((9%)	21(7%)	Limited training provided by departments
4	Cyber Security Awareness	15(5%)	24(8%)	18(6%)	Students are often unaware of data privacy issues
5	Multimedia Content Creation	9(3%)	18(6%)	15(5%)	Skills are concentrated among digital media students
Total 300		105	114	81	

From the above table no.4 shows that self-reported digital skill levels of different students collected data from the two different schools in different skills which were categorized into three parts i.e. high skill, moderate skill and low skill. Out of 300 students 30 (10%) of the students have high skill followed by 15(5%) were moderate skill and 9 (3%) with low skill in basic computer operations that most can handle basic tasks like typing and browsing. It also indicates that 27(9%) have high while 30(10%) and 18(6%) have low skill were found in online research and reference tools used by students but many of the students are unaware of citation or database tools. About the learning management system, the students found that out of 300 students 24(8%) were in high skill, followed by 27(9%) in moderate skill and 21(7%) in low skill as the study found that most of the Departments are not trained to teach the students. About the cyber security awareness 15(5%) in high skill, 24(8%) in moderate skill and 18(6%) in low skill were found as most of the students are unaware of data privacy issues. It also indicates that the skills for multimedia content creation were found that 9(3%) were found in high skill followed by 18(6%) in moderate skill and 15(5%) in low skill as the students were concentrated in digital media.

Table No.5 Economic and Geographic Disparities

Sl. No	Student Category	Laptop Owners (%)	Reliable Internet
1	Urban Students	72 (24%)	69(23%)
2	Rural (valley areas)	39 (13%)	36(12%)
3	Male Students	54(18%)	51(17%)
4	Female Students	48 (16%)	42(14%)
5	Low-Income Households	34(12%)	30(10%)
6	Middle/High-Income Households	51(17%)	72(24%)
Total		300	300

The above table no.5 shows the details of economic and geographic disparities which categorize the students in six different strata that the 72(24%) of the students those live in urban areas have their own laptops and access 69(23%) students the internet while the students in rural areas 39(13%) owned their laptop were 36(12%) students access internet. It indicates that 54(18%) of the male students have their own laptop using 51(17%) students' internets while 48(16%) female students have their own laptop and 42(14%) were access the internet. It also found that 34(12%) of the students were from low-income households and 30(10%) students access internet while 51(17%) of the students in middle-income households and 72(24%) students were access internet from the study.

Table No.6 Academic Consequences of Digital Inequality

Sl. No	Reported Academic Challenges	No. of Students	%	Description
1	Missed Online Classes due to Poor Connectivity	63	21%	Frequent signal loss during lectures
2	Incomplete Assignment Submission	57	19%	Caused by data shortage or device unavailability
3	Difficulty Accessing E-E-Library Resources	66	22%	Low bandwidth and subscription restrictions
4	Increased Stress/Anxiety during Online Exams	69	23%	Connectivity and time-limit issues
5	Feeling of Exclusion from Peer Discussions	45	15%	Poor access reduces collaborative learning
Total		300	100	

Table no.6 indicates that academic consequences of digital inequality that out of 300 students 69 (23%) of the students experienced increased stress or anxiety during online exams due to network connectivity and time limit issues followed by 66 (22%) students who experienced difficulty accessing e-library resources as there is low bandwidth and subscription restrictions. It found that 63(21%) of the students were missed online classes due to poor connectivity and frequent signal loss during lectures. While 57(19%) were not incomplete assignment submissions due to the internet being unavailable by data shortage or device unavailability. Only 45 (15%) of the students were found that they depend on peer group discussion and collaborative learning.

Conclusions:

The digital divide among Manipur University students reflects the broader socio-economic and infrastructural inequalities of the region. While digital transformation has opened new educational opportunities, it has also created new forms of exclusion. Students with stable internet access, personal devices, and digital literacy enjoy significant academic advantages while those from rural or economically disadvantaged backgrounds struggle to keep pace. This inequality threatens to undermine the democratizing promise of digital education. Bridging this divide requires a holistic approach that combines infrastructural development, financial support, capacity building, and inclusive pedagogy. The university must view digital inclusion not as a technological issue but as a question of educational justice. Ensuring that every student-regardless of geography gender or income- can participate fully in the digital learning ecosystem is essential for achieving true academic equity in the digital era.

Recommendations:

To ensure equitable digital learning both institutional and policy interventions are needed as: -

- i) It needs to conduct regular workshops on basic and advanced digital skills (e.g. using LMS, digital research tools, cyber security).
- ii) Promote asynchronous learning options allowing flexible participation.
- iii) Encourage faculty to design low-bandwidth-compatible learning materials (PDFs, audio lectures) for students with poor connectivity.
- iv) Provide solar-powered backup systems to mitigate power outages.

By working and helping together, it can bridge the digital divide inequality can be minimize from the university campus.

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