

Impact of Digital E-Learning Implementation on the Growth of Higher Education in Gangarampur Block, Dakshin Dinajpur District, West Bengal

Chaiti Saha

Political Science department, Dakshin Dinajpur University, India

Email: Chaitisaha298@gmail.com

Abstract

The implementation of e-learning in rural India remains uneven, creating a digital divide in higher education. This study examines the challenges and prospects of digital learning in the Gangarampur Block of Dakshin Dinajpur district, West Bengal. A mixed-methods approach was employed, combining secondary data analysis with preliminary field observations from 30 students and 5 teachers to assess infrastructure, internet access, and teacher preparedness. The findings reveal that while students show enthusiasm for digital learning, significant barriers—including unstable internet connectivity, insufficient teacher training, and limited awareness of formal platforms—impede effective adoption. The reliance on informal platforms like WhatsApp and YouTube highlights gaps in the formal e-learning infrastructure. The study concludes that without targeted interventions such as strengthened internet infrastructure, structured teacher training, and awareness campaigns, the potential of digital education in this rural region remains underutilized. The novelty of this research lies in its micro-level focus on the Gangarampur Block, an under-researched area, providing specific insights into the local barriers to e-learning.

Keywords

Gangarampur, E-learning, Higher education, Digital divide, Rural India

Introduction

E-learning, defined as the process of acquiring knowledge through digital platforms and electronic media, has revolutionized global education systems. It enables learners to access resources far beyond traditional classrooms, fostering efficient skill acquisition and engagement with diverse academic sources (Laurillard, 2004). Globally, this mode of learning has emerged as a transformative force in higher education, effectively bridging geographical barriers and introducing unprecedented flexibility in pedagogical practices. The potential of e-learning to democratize education is widely acknowledged, yet its implementation and effectiveness are deeply influenced by local contexts and infrastructural realities.

In India, the significance of e-learning was thrust into the spotlight during the COVID-19 pandemic, which caused a massive disruption to conventional classroom teaching. States like West Bengal witnessed a sharp, necessitated rise in the adoption of online learning platforms (Islam, 2021). Recognizing this shift, the Government of West Bengal introduced several initiatives to strengthen

Submission: 30 September 2025; **Acceptance:** 21 November 2025; **Available online:** November 2025



Copyright: © 2025. All the authors listed in this paper. The distribution, reproduction, and any other usage of the content of this paper is permitted, with credit given to all the author(s) and copyright owner(s) in accordance to common academic practice. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license, as stated in the website: <https://creativecommons.org/licenses/by/4.0/>

digital education, such as the Bangla Shiksha Portal, YouTube Channel, the School ICT and Smart Classroom Project, and the Student Credit Card Scheme, all aimed at promoting digital resource accessibility. Scholarly work underscores the promise of these efforts; for instance, Das, Banerjee, and Basu (2011) argue that e-learning can significantly enhance the Gross Enrollment Ratio (GER) in higher education by offering cost-effective and flexible learning opportunities. Similarly, Bhakto (2021) highlighted how e-learning provided a crucial, environmentally friendly alternative during the lockdowns, allowing students to learn at their own pace.

Research into learner perceptions further clarifies this landscape. Studies on university students in West Bengal have found overall positive attitudes towards e-learning, influenced by factors such as gender, residence, and academic stream (Kar et al., 2014). This is complemented by research on school students in the Dakshin Dinajpur district, which revealed that rural-urban locality and subject stream shape acceptance of online education, suggesting a need for more engaging platforms and peer interaction (Sarkar & Barton, 2022). However, the theoretical promise of e-learning is often tempered by significant ground-level barriers. As noted by Sinha et al. (2024) in their study of North and South 24 Parganas, and echoed by Das et al. (2011), challenges such as inadequate infrastructure, unreliable internet connectivity, and the pervasive digital divide critically obstruct effective implementation, particularly in rural areas.

Despite these valuable state-wide and district-level insights, a critical research gap persists. Micro-level studies focusing specifically on rural blocks remain scarce. The Gangarampur Block in Dakshin Dinajpur district exemplifies a region where unique infrastructural and socio-economic challenges—including limited digital infrastructure, poor internet connectivity, and financial constraints—create a critical digital divide, alienating rural learners from the benefits of digital education. A focused inquiry into this block is therefore essential to understand the nuanced impact of e-learning on higher education growth in such under-researched, marginalized areas.

To address this gap, this study aims to examine the impact of digital e-learning implementation on the growth of higher education in Gangarampur Block. The primary objective is to understand the local dynamics of e-learning adoption, identify existing problems, and propose pathways to leverage digital education for reducing the rural-urban disparity. The study is guided by two hypotheses, H1: The development of digital e-learning in Gangarampur Block has a significant positive impact on students' engagement and performance in higher education, and H2: Students in Gangarampur Block face significantly greater challenges in accessing and using e-learning resources compared to students in urban areas.

By investigating these aspects, this research seeks to contribute targeted insights that can inform policy and intervention strategies, ensuring that the transformative potential of e-learning reaches the most underserved educational landscapes.

Methodology

This research on the impact of digital e-learning in Gangarampur Block was conducted using a mixed-methods approach, primarily reliant on secondary data analysis supplemented with limited primary observations.

The secondary data were collected from scholarly articles, government documents, education department portals, and local news sources, emphasizing documentary analysis. Preliminary field observations were gathered from a sample of 30 high school students and 5 teachers selected via a

simple random sampling method. The study focused on assessing infrastructure availability, internet access, teacher preparedness, and platform usage to understand the local e-learning ecosystem.

Results and Discussion

The Role and Reality of E-Learning in Higher Education

E-learning has emerged as a significant tool in higher education, providing flexible and accessible learning opportunities that allow students to learn beyond classroom boundaries (Laurillard, 2004). In theory, e-learning is often described as having no geographical or social barriers, but the reality in rural regions like Gangarampur reveals a more complex picture. While students show enthusiasm for digital learning and the integration of ICT in the B.Ed. college has enhanced the teaching-learning process, infrastructural and socio-economic challenges continue to restrict its universal effectiveness. This partial success supports the hypothesis (H1) that e-learning development can have a positive impact, though its benefits remain limited in scope.

Platform Usage and the Formal-Informal Divide

In West Bengal, several formal platforms such as Bangla Siksha, Geneo e-Siksha, SWAYAM, and DIKSHA are available for digital learning, alongside widely used tools like YouTube, WhatsApp, Google Meet, and Zoom (Bhakto, 2021). However, in the Gangarampur Block, evidence indicates that formal government platforms are rarely used. Instead, students depend mainly on YouTube and WhatsApp for their educational needs, a pattern consistent with broader trends in rural India (Digital education in rural India, 2011). This preference for informal platforms suggests that access to government-sponsored digital initiatives is either limited or not effectively communicated to learners, creating a significant gap in the adoption of structured educational resources.

Benefits Versus Ground Realities

For rural students in Gangarampur, e-learning offers several potential benefits identified by Das et al. (2011): access to educational materials otherwise unavailable due to limited local institutions, reduced costs related to travel and institutional expenses, improved digital literacy through platform usage, and broadened exposure to national and international resources. However, these theoretical advantages must be critically examined against the region's actual conditions. The lack of devices, unreliable internet connectivity, and inadequate digital infrastructure prevent many learners from experiencing the equality of opportunity that e-learning promises in theory, echoing challenges identified by Sinha et al. (2024) in similar rural contexts.

Infrastructure Availability and Utilization

According to available data (Government of West Bengal, n.d.), the block has numerous educational institutions, including 133 primary schools, 18 middle schools, 10 high schools, one general degree college, one polytechnic college, one B.Ed. college, and several private schools. However, only the B.Ed. college has proper ICT facilities. While some institutions have projectors and computer labs, regular usage is limited to a small number of students. This highlights a significant gap between infrastructure availability and effective utilization, undermining the claim that e-learning automatically removes geographical and social barriers.

Implementation Challenges

The study reveals multiple interconnected challenges that hinder e-learning adoption in Gangarampur. Inadequate infrastructure, including poor internet connectivity, irregular electricity, and limited access to digital devices, forms the primary barrier (Sinha et al., 2024). The lack of teacher training compounds this issue, with no training centers in Gangarampur and the only district center located in

Balurghat, leading to limited teacher interest in adopting e-learning methods. Financial constraints prevent consistent student participation, while language and content barriers make English and Hindi content difficult for rural students to understand. Additionally, low awareness of government initiatives means most students rely solely on informal platforms rather than structured schemes like SWAYAM or DIKSHA, reflecting findings by Islam (2021) regarding awareness gaps in rural educational communities.

Analytical Integration

These findings suggest that while e-learning holds promise for democratizing education, its effectiveness in Gangarampur remains uneven. The theoretical benefits of equal opportunity and low-cost access are undermined by structural inequalities, supporting similar observations made by Banerjee et al. (2021) in their study of rural education. Infrastructure shortages prevent regular student engagement, inadequate teacher training creates disinterest in new methods, and financial and linguistic barriers further widen the educational gap. Thus, e-learning in Gangarampur currently serves as a partial and uneven supplement to traditional education rather than a comprehensive solution. The challenges identified strongly support the second hypothesis (H2) that students in Gangarampur Block face significantly greater obstacles compared to urban students, consistent with the urban-rural digital divide noted by Kar et al. (2014) and Sarkar and Barton (2022) in their studies of West Bengal students.

Conclusion

This study examined the impact of digital e-learning implementation on higher education growth in Gangarampur Block. The findings reveal that while students have basic access to mobile phones and internet facilities, and frequently use platforms like WhatsApp and YouTube for learning, the usage of formal e-learning remains limited. Government initiatives like Bangla Siksha and Diksha are underutilized due to lack of awareness, insufficient teacher training, financial constraints, and language barriers.

The results provide mixed support for the study's hypotheses. The positive impact on engagement and performance (H1) is evident but confined to better-resourced institutions like the B.Ed. college. Meanwhile, the significant challenges faced by students in Gangarampur (H2) are clearly demonstrated, confirming a substantial digital divide between rural and urban educational access.

Based on these findings, several recommendations emerge. The government should strengthen internet connectivity in the block, design structured teacher training programs, and launch awareness campaigns about formal e-learning platforms. Financial support mechanisms should be introduced to help economically weaker students access digital devices and data services.

This study has limitations in its reliance on secondary data and narrow geographical focus, which affects the generalizability of the findings. Future research should employ primary data collection and expand to comparative studies across multiple blocks or districts to provide more comprehensive insights.

In conclusion, e-learning can become a valuable tool for improving higher education in Gangarampur Block, but this requires coordinated efforts involving robust infrastructure development, systematic teacher training, and sustained policy initiatives that address the specific challenges of rural educational contexts.

Acknowledgements

The author would like to thank the Vice Chancellor of Dakshin Dinajpur University, Dr. Pranab Ghosh, for the opportunity to present this paper. Gratitude is also extended to the university staff and to the teachers of the Political Science Department for their academic guidance.

There is no grant or funding bodies to be acknowledged for preparing this paper.

References

- Banerjee, A. V., Banerji, R., Duflo, E., Glennerster, R., & Khemani, S. (2021). Improving school governance and learning outcomes in rural India: A field experiment. *Journal of Public Economics*, 203, 104526 <https://doi.org/10.1016/j.labeco.2024.102615>
- Bhakto, A. (2021). School education with e-learning of West Bengal in lockdown. *GIS Science Journal*, 8(2). <https://www.researchgate.net/publication/391450590>
- Das, A., Banerjee, D. K., & Basu, K. (2011). Implementation of e-learning in West Bengal to enhance the present GER in higher education. *International Journal of Innovation, Management and Technology*, 2(3), 233–238. <https://doi.org/10.7763/IJIMT.2011.V2.141>
- Digital education in rural India: WhatsApp and YouTube lead the way. (2011, August 9). The Economic Times. <https://economictimes.indiatimes.com/tech/technology/digital-education-in-rural-india-whatsapp-and-youtube-lead-the-way/articleshow/85171286.cms>
- Government of West Bengal. (n.d.). Official website of Dakshin Dinajpur. Retrieved [Date you accessed it], from <https://ddinajpur.nic.in/>
- Islam, S. (2021). E-learning in secondary government-aided schools during Covid-19 pandemic in West Bengal. *International Journal of Research Culture Society*, 5(12), 1–7. <https://ijrcs.org/wp-content/uploads/IJRCS202112003.pdf>
- Kar, D., Saheb, B., & Mondal, B. C. (2014). Attitude of university students towards e-learning in West Bengal. *American Journal of Educational Research*, 2(8), 669–673. <https://doi.org/10.12691/education-2-8-16>
- Laurillard, D. (2004). E-learning in higher education. *Journal of Educational Technology & Society*, 7(1), 81–91. https://www.researchgate.net/publication/292811957_E-learning_in_higher_education
- Sarkar, S., & Barton, P. (2022). Attitude of higher secondary school students towards online education in the district of Dakshin Dinajpur, West Bengal. **The Online Journal of Distance Education and e-Learning*, 10*(3). <https://www.researchgate.net/publication/363366093>
- Sinha, S., Deb, M. K., Jiswal, K., Deb, P., & Dey, B. (2024). Effectiveness of e-learning among students of 11th and 12th standard in schools of North and South 24 Parganas districts of West Bengal. *International Journal of Frontline Multidisciplinary Research*, 6(6), 45–53. <https://doi.org/10.36948/ijfmr.2024.v06i06.34135>