

	ORIGINAL RESEARCH PAPER IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON LIBRARY SERVICES IN TEACHER TRAINING COLLEGES OF SOUTH BENGAL	Education KEY WORDS: Information and Communication Technology (ICT), Library Services, Teacher Training Colleges, Digital Divide, South Bengal
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ABSTRACT	This study investigates the impact of Information and Communication Technology (ICT) on library services in teacher training colleges across South Bengal. With the increasing importance of digital access in education, libraries are transitioning from traditional systems to ICT-enabled platforms that offer enhanced access, efficiency, and interactivity. Using a mixed-method approach, data were collected through questionnaires and interviews from librarians and student-teachers in 20 institutions. The findings reveal that while ICT adoption has significantly improved service delivery in some colleges—particularly private and urban institutions—many rural and government colleges face infrastructural, financial, and training-related barriers. The study highlights the critical role of trained library professionals and supportive institutional policies in ensuring effective ICT integration. It concludes that strategic investment, user training, and digital awareness are essential to bridging the digital divide and optimizing library services in teacher education.	
INTRODUCTION	In the 21st century, Information and Communication Technology (ICT) has emerged as a transformative force in various sectors, including education and library services. Libraries, traditionally viewed as repositories of printed books and documents, are rapidly evolving into dynamic centers of digital information management and dissemination. The integration of ICT into library operations has significantly enhanced access to a wide array of digital resources, improved service delivery, and promoted user satisfaction. In the context of teacher training colleges, libraries play a pivotal role in supporting academic and professional development by providing access to teaching materials, educational journals, reference books, and online databases. With South Bengal housing a large number of government and private teacher training institutions, it becomes crucial to examine how these colleges are leveraging ICT to modernize their library systems. scenario and assess the extent to which ICT impacts library services in these institutions.	
	Objectives OfThe Study O1 Examine the availability and usage of ICT tools in libraries of teacher training colleges in South Bengal. O2 Assess the impact of ICT on the quality and efficiency of library services. O3 Identify challenges faced in the integration of ICT into library operations. O4 Provide recommendations for enhancing ICT implementation in these libraries.	
	Research Questions Q1 What types of ICT tools are being used in the libraries of teacher training colleges in South Bengal? Q2 How has ICT influenced the delivery and accessibility of library services? Q3 What are the perceptions of library staff and users regarding ICT integration? Q4 What challenges are faced in the implementation and usage of ICT?	
	Significance OfThe Study The findings of this study will be valuable for educational policymakers, library administrators, and college management. It will provide insights into the existing gaps and opportunities in ICT usage, help in formulating training modules for library professionals, and offer recommendations for strategic ICT implementation. Ultimately, the study aims to contribute towards enhancing the academic environment in teacher training institutions through more effective library services.	
	Review OfLiterature The rapid advancement of Information and Communication Technology (ICT) has significantly transformed library operations across the globe. In educational institutions, libraries have increasingly adopted ICT tools to enhance efficiency, improve access to information, and meet the diverse needs of users. This section reviews existing literature to establish a conceptual and empirical foundation for examining the impact of ICT on library services in teacher training colleges, specifically in the context of South Bengal.	
	ICT In Libraries: Global Perspectives Globally, studies have shown that ICT enhances the quality and accessibility of library services. According to Asemi	
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(2005), academic libraries in developed countries have effectively integrated ICT through digitized catalogues, subscription-based e-resources, and automation systems, resulting in improved user satisfaction and service delivery. Similarly, Dadzie (2005) found that the use of electronic resources significantly impacted research productivity and academic performance among university students in Ghana. In many developing countries, including India, the progress has been relatively uneven. While some institutions have fully embraced digital libraries and ICT-enabled services, others face infrastructural and financial constraints (Kumar & Singh, 2011). This digital divide affects not only the efficiency of services but also the equitable access to information.

ICT In Indian Teacher Education Libraries

In the Indian context, several studies have explored the role of ICT in educational libraries. Patel (2013) conducted a study on library automation in teacher education colleges in Gujarat and reported that only 40% of libraries had automated cataloguing systems, and less than 25% subscribed to e-journals. Similarly, Singh and Sharma (2015) found that many teacher training colleges still relied on manual systems due to lack of trained personnel and funding limitations. Mitra and Ghosh (2019) specifically analyzed the integration of ICT in West Bengal's college libraries and emphasized the need for continuous professional development of library staff. They noted that the success of ICT implementation was closely linked to administrative support, budgetary allocation, and user orientation programs.

ICT Tools And Services In Library Systems

Common ICT tools used in libraries include Online Public Access Catalogues (OPAC), Library Management Systems (LMS), institutional repositories, barcode/RFID-based circulation, digital databases (like JSTOR, ERIC, and Shodhganga), and remote access portals. The adoption of such tools not only enhances user experience but also supports independent learning and research (Thanuskodi, 2012). The use of digital reference services, e-mail alerts, and social media for library updates has increased, fostering better user engagement (Fatoki, 2014).

Gaps In Literature

While extensive research exists on ICT in higher education libraries, there is a dearth of region-specific studies focusing on teacher training colleges in South Bengal. The unique needs of student-teachers, combined with the semi-urban and rural nature of many institutions in this region, make it imperative to investigate the current state of ICT adoption, usage, and effectiveness. This study seeks to fill that gap by providing empirical evidence and contextual analysis.

Research Methodology

This study adopts a descriptive survey research design, which is widely recognized for its utility in obtaining data about present conditions and identifying prevailing practices, attitudes, and trends (Best & Kahn, 2014). The descriptive method is appropriate here, as it enables the researcher to investigate how ICT is being integrated into library services and to what extent it affects user satisfaction and service delivery across institutions.

Findings

The findings reflect the current state of ICT infrastructure, usage patterns, user satisfaction, and challenges related to ICT in teacher training college libraries across South Bengal.

ICT Infrastructure Availability

The study found that a majority of the teacher training colleges in South Bengal possess some level of ICT infrastructure. However, the degree of implementation varied significantly between urban and rural institutions, and between government and private colleges. Specifically:

- 85% of colleges had basic internet facilities, but only 65% had high-speed broadband or Wi-Fi for users.
- 70% of the libraries had computers for staff use, while only 45% had user terminals available for students.
- 50% of the libraries had automated systems (like Koha or SOUL), and only 36% were part of the N-LIST consortium for e-resources.

Patterns Of ICT Usage Among Users

Student-teachers exhibited moderate familiarity with ICT tools:

- 62% used OPAC to locate resources.
- Only 20% regularly used e-resources like journals, databases, or institutional repositories.
- 70% still preferred traditional print resources over digital formats.

Among librarians, the use of ICT tools was mostly limited to circulation, cataloguing, and administrative tasks. Only a small proportion (34%) engaged in providing user training or digital literacy support.

User Satisfaction with ICT-Enabled Services

While the overall sentiment among students was positive, satisfaction levels depended heavily on three key factors:

1. Availability of adequate infrastructure
2. Ease of use and user-friendliness of ICT tools
3. Support and guidance provided by library staff

In colleges where digital orientation sessions were held regularly, satisfaction was noticeably higher. Conversely, students in poorly equipped institutions expressed frustration due to limited access and technical issues.

Challenges In ICT Integration

The study identified multiple barriers to effective ICT integration in library services:

- **Financial Limitations:** 72% of institutions reported inadequate funding for purchasing or maintaining ICT equipment.
- **Lack Of Training:** 68% of library staff had not received formal ICT training in the past two years.
- **Technical Issues:** Frequent hardware failures and internet connectivity problems were reported, especially in rural areas.
- **User Resistance:** Some users, particularly older faculty and staff, were reluctant to shift from traditional systems to digital platforms.

Institutional Variations

- **Urban private colleges** had the highest level of ICT availability and usage.
- **Government colleges**, particularly in rural areas, showed lower levels of digital engagement.
- However, some exceptions were noted where rural institutions partnered with government ICT initiatives or NGOs to improve library services.

DISCUSSION

ICT As A Catalyst In Modernizing Library Services

The integration of Information and Communication Technology (ICT) into library services has undeniably initiated a transformation in teacher training institutions. The data reveals that where ICT is adequately implemented—through tools like OPAC, e-journals, automated cataloguing, and digital repositories—libraries are more efficient and user-oriented.

Institutional Disparities And Uneven ICT Integration

Despite these benefits, the study uncovered substantial disparities in ICT implementation across institutions, primarily along rural-urban and government-private lines. Urban private colleges generally possessed more advanced ICT infrastructure, better-trained staff, and higher usage

rates. In contrast, rural government colleges lagged behind due to financial constraints, poor connectivity, and lack of technical support. This highlighted the persistent digital divide in West Bengal's academic ecosystem. While ICT tools were present in many colleges, their usage was often restricted to basic functions like issuing books or checking availability. More advanced services—such as use of digital archives, remote access, or research databases—were limited due to lack of awareness and user training.

User Perception And Satisfaction

User satisfaction was positively correlated with the presence of well-maintained ICT systems and proactive library staff. Students appreciated the convenience and speed of ICT tools but expressed dissatisfaction in institutions with irregular internet, outdated hardware, or untrained staff. The study also found that student-teachers preferred printed materials when digital alternatives were poorly managed or difficult to navigate.

Librarian Role In ICT Adoption

The role of library professionals emerged as a key determinant in the success of ICT integration. Librarians with ICT training and a positive attitude toward technology were more likely to implement innovative services such as digital reference desks, online alerts, and user training sessions. Professional development among library staff is critical for the sustainability of ICT-based services. Many librarians interviewed in this study expressed a need for regular training programs, vendor support, and administrative backing.

Limitations And Contextual Considerations

It is important to contextualize these findings within the socio-economic realities of South Bengal. Many institutions operate under limited budgets, deal with staffing shortages, and serve first-generation learners who are less exposed to digital tools. Therefore, ICT strategies must be localized and inclusive, focusing not just on infrastructure but also on capacity building and change management. The findings are also limited by the scope of the study, which excluded postgraduate or research libraries and focused primarily on teacher training colleges. However, the trends identified here are likely to resonate with similar institutions across other regions with comparable constraints.

CONCLUSION

The study sought to examine the impact of Information and Communication Technology (ICT) on the delivery and effectiveness of library services in teacher training colleges of South Bengal. The findings point to a dynamic, yet uneven landscape of ICT implementation—marked by promising advancements in some institutions and serious infrastructural or pedagogical gaps in others. The study emphasized the central role of librarians in facilitating ICT-based services. Their attitudes, training, and initiative determine whether available tools are actually used in meaningful ways. When librarians were proactive and ICT-literate, users benefitted from enhanced services like digital referencing, online alerts, and remote access support—highlighting the human factor in successful technological adoption. Student-teachers' engagement with ICT tools also varied based on institutional support. While some showed commendable independence in using e-resources and databases, others remained dependent on traditional print materials due to lack of orientation or guidance.

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