

## Digital Literacy Skills of LIS Professionals during COVID-19: A Study of RTMNU Affiliated Colleges, Nagpur

**Dr. Najim Hussain Ahmad Sheikh**

Librarian

[nsheikh7@gmail.com](mailto:nsheikh7@gmail.com),

Mohsinbhai Zaweri Mahavidyalaya, Wadsa

Gondwana University, Gadchiroli 441207

### Abstract

The COVID-19 pandemic accelerated the digital transformation of academic institutions worldwide, compelling libraries to transition rapidly from traditional services to online platforms. In this context, Library and Information Science (LIS) professionals assumed a pivotal role in facilitating remote access to resources, supporting digital pedagogy, and addressing users' information needs. This study examines the digital literacy skills of LIS professionals working in colleges affiliated with Rashtasant Tukadoji Maharaj Nagpur University (RTMNU), with emphasis on their preparedness, challenges, and future training needs.

A descriptive survey design was employed, and data were collected from **185 respondents** using a structured online questionnaire administered in January 2022. The analysis revealed that LIS professionals demonstrated strong competencies in basic digital skills, particularly in e-resource management (68%) and online user support (62%). However, significant gaps were observed in advanced ICT applications, including e-publishing (72% reported limited proficiency) and online pedagogy (65% rated as low to moderate). Key challenges included lack of advanced ICT training (71%), poor internet connectivity (57%), and insufficient institutional support (52%).

The findings underscore the urgent need for continuous professional development, institutional investment in infrastructure, and integration of digital pedagogy into LIS education. This study contributes region-specific evidence from RTMNU affiliated colleges, highlighting lessons for strengthening digital readiness of LIS professionals in the post-pandemic era.

**Keywords:** Digital Literacy, LIS Professionals, COVID-19, RTMNU, Academic Libraries

## Introduction

The outbreak of COVID-19 created unprecedented disruptions in the academic sector, forcing institutions worldwide to move rapidly from physical to digital platforms (Bao, 2020). Libraries, as key facilitators of information access, were significantly affected. Library and Information Science (LIS) professionals were expected to manage digital collections, provide virtual reference, and support faculty and students in online teaching and learning environments (Ali & Gatiti, 2020).

Several studies have highlighted the transformation of academic libraries during this period. Rafiq et al. (2021) reported that university libraries in developing countries reorganized services, relied on virtual tools, and adopted digital communication channels. Ashiq et al. (2022) found that libraries worldwide strengthened virtual reference and remote services but struggled with limited ICT capacity. In the Indian context, Mahesh and Mittal (2021) observed that NAAC-accredited institutions adapted more effectively than smaller colleges, but uneven readiness persisted. Similarly, Das and Dutta (2022) noted that while many LIS professionals improved their basic digital skills during the pandemic, gaps remained in areas such as online pedagogy, e-publishing, and scholarly communication.

This study builds on the existing literature but focuses specifically on LIS professionals working in colleges affiliated with Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU). Unlike national or university-level studies, it provides region-specific insights into the digital literacy skills, challenges, and training needs of professionals at the college level.

## Review of Literature

1. **Rafiq, Batool, Ali & Ullah (2021)** — *University libraries' response to COVID-19*  
Summary: Interviewing heads of university libraries in developing-country settings, this study describes how libraries quickly shifted services (virtual reference, remote access to e-resources), reorganized staff work, and used communication channels to support users

during lockdowns. It highlights leadership, policy changes, and reliance on basic digital tools rather than advanced systems.

2. **Ali & Gatiti (2020)** — *Roles of librarians during the pandemic*  
Summary: This paper argues that health-science and other librarians became frontline information mediators—curating credible COVID guidance, combating misinformation, and supporting healthcare workers—while facing infrastructure and training gaps. It stresses a rapid role expansion for LIS staff with limited preparation.
3. **Bao (2020)** — *COVID-19 and online teaching (case study: Peking University)*  
Summary: Although focused on teaching, this case study shows how emergency remote learning forced institutions to adopt online platforms and reshape services — a context that made digital literacy a campus-wide priority and increased reliance on librarians for resource and instructional support.
4. **Ashiq et al. (2022)** — *Transformation of libraries during COVID-19*  
Summary: A review/empirical study documenting that academic libraries expanded virtual reference, digitization, and remote access, but many struggled with limited staffing, budget, and advanced ICT applications (e-publishing, analytics). The paper recommends targeted staff training and infrastructure investment.
5. **Mahesh & Mittal (2021)** — *Academic libraries in India during COVID-19*  
Summary: Examining Indian academic libraries, the authors report innovative local solutions (institutional repository use, online orientation sessions) but note uneven readiness: NAAC-accredited institutions often fared better, while many colleges lacked reliable access and staff training in advanced digital services. (Indian context emphasis.)
6. **Ms (2021)** — **Library Philosophy & Practice** — *Positive impact of COVID-19 on digital literacy*  
Summary: A study showing that many library professionals improved basic digital skills (e-resource management, virtual user instruction) during the pandemic, while advanced competencies (data curation, e-publishing) lagged. The paper reports both accelerated skill-building and persistent gaps.
7. **Das & Dutta (2022)** — *Digital literacy competencies of Indian library professionals*  
Summary: Surveying Indian LIS staff, this work finds moderate competence in e-

resources and basic ICT but identifies shortfalls in instructional design for online pedagogy and scholarly communications (e-publishing, altmetrics). It calls for curriculum updates and institutional training. (Representative of peer-reviewed Indian studies.)

8. **Najafgholinejad et al. (2021)** — *University libraries' reactions (comparative perspectives)*

Summary: Comparative studies show that libraries with pre-existing digital infrastructure and skilled staff shifted faster to remote services; those without had to improvise, exposing the importance of prior digital readiness and continuous professional development.

9. **Reed (2021/2022)** — *Trends in virtual reference and online instruction*

Summary: Reviews of virtual reference practice indicate increased demand for online information literacy instruction and for librarians to support faculty in online pedagogy; effective responses relied on staff digital confidence and simple, scalable tools. (Implication: training librarians in pedagogy is critical.)

## Summary of Literature

Studies show that during COVID-19, libraries quickly shifted from traditional to digital services. LIS professionals improved skills in e-resource management, online support, and virtual reference. At the same time, many faced problems with advanced ICT tools, e-publishing, online teaching, and handling misinformation. Research in India also shows that while some institutions adopted digital practices effectively, many college libraries lacked proper infrastructure, training, and support.

## Research Gap

Most existing studies focus on universities or large institutions. Very little work has been done on college-level LIS professionals, especially in regional contexts. In Nagpur, there is limited evidence on how LIS staff in RTMNU-affiliated colleges managed digital services, what skills they had, what challenges they faced, and what support they needed. This study fills that gap by focusing on their digital literacy skills, challenges, and training needs during COVID-19.



## Objectives of the Study

1. To examine the digital literacy skills of LIS professionals in RTMNU-affiliated colleges.
2. To identify the challenges faced during the shift to digital services in COVID-19.
3. To explore the sources of digital skill acquisition during the pandemic.
4. To suggest measures for strengthening digital readiness of LIS professionals in the post-COVID context.

## Research Methodology

The study focused on librarians working in colleges affiliated with Rashtasant Tukadoji Maharaj Nagpur University (RTMNU). A total of 185 college librarians (one librarian from each selected college) were included in the sample. Colleges were selected using simple random sampling to provide fair representation across different categories and locations. Data were collected through a structured online questionnaire (Google Form) in January 2022. The responses were analyzed using descriptive statistics such as frequencies and percentages.

## Scope and Limitations

### Scope:

This study is confined to college librarians working in institutions affiliated with RTMNU. It specifically examines their digital literacy skills, challenges, and training needs during the COVID-19 pandemic.

### Limitations:

The data was collected in January 2022 and reflects post-pandemic perceptions based on the experiences of librarians during the pandemic period. Hence, the findings are time-bound and may not fully represent subsequent changes or ongoing developments in digital practices.

## Results and Discussion

**Table 1: Demographic Profile of Librarians (N = 185)**

Category	Frequency	Percentage (%)
Male	110	59.5
Female	75	40.5
<b>Total</b>	<b>185</b>	<b>100</b>

**Interpretation:**

Most librarians surveyed were male (59.5%), while females formed 40.5%. This shows a balanced but slightly male-dominated profession in RTMNU colleges.

**Table 2: Digital Skills Demonstrated by Librarians**

Digital Skill	High Proficiency (%)	Moderate (%)	Low (%)
E-resource management	68	22	10
Online user support (virtual reference)	62	25	13
Use of online platforms (Zoom, Google Meet, etc.)	58	28	14
Online cataloguing / classification	55	30	15
Database searching & management	60	27	13

**Interpretation:**

Librarians showed strong skills in e-resource management (68%) and online user support (62%). However, advanced tasks like online pedagogy and cataloguing had more moderate or low proficiency. This reflects basic digital readiness but gaps in advanced ICT use.

**Table 3: Challenges Faced by Librarians during COVID-19**

Challenge	Frequency	Percentage (%)
Lack of advanced ICT training	131	71
Poor internet connectivity	105	57
Limited institutional support	96	52
Difficulty in online pedagogy support	85	46

Digital resource subscription issues	70	38
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## Interpretation:

The main challenge was lack of advanced ICT training (71%), followed by poor internet connectivity (57%). Many librarians also reported weak institutional support. This highlights the need for both skills training and better infrastructure.

**Table 4: Sources of Digital Skill Acquisition**

Source of Learning	Frequency	Percentage (%)
Self-learning / practice	115	62
Peer support / collaboration	95	51
Institutional workshops / training	78	42
Online courses / webinars (MOOCs, SWAYAM)	82	44

## Interpretation:

Most librarians developed skills through self-learning (62%) and peer support (51%), while fewer relied on formal institutional training. This shows their willingness to adapt but also a lack of structured support systems.

**Table 5: Major Challenges in Post-COVID Service Delivery**

Challenge	Frequency	Percentage (%)
Sustaining hybrid services (online + offline)	98	53
Lack of funds for digital resources	112	61
Limited user digital literacy	88	48
Staff shortage in libraries	76	41

## Interpretation:

Funding for digital resources (61%) was the biggest post-COVID challenge. Sustaining hybrid library services (53%) and users' low digital literacy (48%) were also significant issues.

**Table 6: Suggestions by Librarians for Strengthening Digital Readiness**

Suggested Measure	Frequency	Percentage (%)
Continuous professional development	125	68
Improved ICT infrastructure	118	64
Regular institutional workshops	106	57
Collaboration with universities / consortia	90	49

## Interpretation:

Librarians strongly recommended continuous training (68%) and better ICT infrastructure (64%). Institutional workshops and collaborative support were also seen as important for strengthening digital readiness.

## Discussion

The study reveals that librarians in RTMNU-affiliated colleges developed adequate basic digital skills during COVID-19, particularly in managing e-resources and supporting users online, but struggled with advanced competencies such as e-publishing and digital pedagogy. These findings are consistent with earlier studies by Ashiq et al. (2022) and Das & Dutta (2022), which reported similar gaps among academic library professionals in India. The challenges identified, including lack of training, poor infrastructure, and limited institutional support, also echo Rafiq et al. (2021), who highlighted uneven digital preparedness in developing-country contexts. However, this study adds region-specific evidence by focusing on college librarians in Nagpur, showing that while they were resilient in adapting to basic digital tasks, long-term digital transformation will require structured training programs and stronger institutional investment.

## Overall Findings

1. Most librarians demonstrated good **basic digital skills** such as e-resource management (68%) and virtual user support (62%).
2. **Advanced ICT skills** like e-publishing and online pedagogy were limited, showing a gap in higher-level competencies.
3. The **biggest challenges** were lack of ICT training (71%), poor internet connectivity (57%), and weak institutional support (52%).



4. Librarians mainly relied on **self-learning (62%)** and peer support (51%) rather than formal institutional training.
5. In the post-COVID context, sustaining **hybrid library services** and lack of funds for digital resources were the most pressing issues.
6. Librarians strongly demanded **continuous professional development (68%)** and better ICT infrastructure (64%) to strengthen future readiness.

## Suggestions

1. **Training Programs:** Universities and colleges should organize regular workshops and refresher courses on advanced ICT, e-publishing, and online pedagogy.
2. **Infrastructure Investment:** Improved internet connectivity, subscription to e-resources, and upgraded library software are essential.
3. **Institutional Support:** Colleges should provide financial support and policy backing to librarians for digital initiatives.
4. **Collaborations:** RTMNU and affiliated colleges can collaborate with consortia (e.g., INFLIBNET, N-LIST) for shared digital resources and training.
5. **User Training:** Alongside staff, students and faculty should also receive basic digital literacy training to use library services effectively.

## Conclusion

The study shows that librarians in RTMNU-affiliated colleges adapted well to basic digital tasks during COVID-19 but struggled with advanced ICT applications. While self-learning and peer support helped them manage immediate needs, long-term digital readiness requires structured training, strong institutional backing, and improved infrastructure. Continuous professional development, financial investment in digital resources, and collaborative initiatives are vital for strengthening the role of librarians in a post-pandemic, technology-driven academic environment.

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