

# The Necessity of Information and Communication Technology Knowledge for Librarians in the Modern Digital Age.

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**Abstract**—In the rapidly evolving digital landscape, libraries and information centers have transformed significantly from being mere custodians of books to dynamic digital knowledge hubs. This transformation has underscored the crucial need for librarians to possess robust Information and Communication Technology (ICT) knowledge. ICT literacy empowers librarians to manage digital resources, provide remote access to information, and support e-learning and virtual reference services. Furthermore, the integration of ICT into library services enhances operational efficiency, enables user-centered services, and aligns libraries with global information trends. This paper explores the importance of ICT competence for librarians, identifies the essential ICT skills required in contemporary settings, and examines the challenges and opportunities posed by the digital age. It also highlights key findings from relevant literature and provides strategic recommendations for incorporating ICT training into library science education and continuous professional development programs, ensuring that librarians remain effective facilitators of information in the digital age.

**Index Terms**—ICT, librarians, digital libraries, information technology, library science, digital age

## 1. INTRODUCTION

The digital revolution has radically changed how information is created, stored, accessed, and disseminated. Libraries, traditionally seen as repositories of printed material, have now become dynamic knowledge centers offering digital resources, e-services, and online learning support. As custodians of information, librarians must adapt to these changes by acquiring ICT skills to remain relevant and effective in their roles.

In the 21st century, the demands on library professionals have expanded dramatically. The proliferation of digital content, increased expectations for online accessibility, and the rise of virtual user engagement have shifted the core responsibilities of librarians. They are now expected not only to manage physical collections but also to curate and facilitate access to vast digital resources. ICT competence enables librarians to implement digital archiving systems, manage e-resources, develop institutional repositories, and provide digital literacy training to users. Therefore, developing ICT proficiency is fundamental to the transformation and sustainability of libraries in the digital era.

## 2. LITERATURE REVIEW

Several studies have highlighted the growing necessity of ICT knowledge among librarians. Tella, Akande, and Bamidele (2014) emphasized that the digital environment has made ICT skills a prerequisite for recruitment and performance in academic libraries. Their study identified specific competencies such as database management, web technologies, and digital reference services as critical. Aina (2010) discussed how the integration of ICT into library operations has revolutionized service delivery, particularly in developing countries. The study noted that librarians with ICT skills could leverage online tools to bridge information gaps and extend library services beyond physical boundaries. Similarly, Islam and Islam (2007) argued that the rapid evolution of digital technologies necessitates continuous ICT training for library staff. They pointed out that without adequate knowledge of ICT,

librarians risk becoming obsolete in an increasingly digital information landscape.

In another study, Dadzie (2007) examined the ICT competencies among Ghanaian librarians and concluded that while there is awareness of the importance of ICT, practical skills remain inadequate due to poor infrastructure and limited training opportunities.

### 3. ROLE OF ICT IN MODERN LIBRARIES

ICT plays a pivotal role in transforming traditional libraries into modern, user-centric knowledge hubs. The deployment of ICT tools has allowed libraries to expand their services beyond physical walls, providing seamless access to digital resources and enhancing the user experience. Modern libraries utilize ICT to create and maintain Online Public Access Catalogs (OPAC), enabling users to search, reserve, and renew materials remotely. Additionally, electronic resource management systems streamline the acquisition, cataloging, and circulation of e-books, journals, and databases.

Digital lending platforms and institutional repositories have become integral, allowing for the dissemination of research outputs, theses, and dissertations to a global audience. Libraries now provide virtual reference services through chatbots, email, and video conferencing, ensuring that users receive timely assistance regardless of location. Moreover, ICT facilitates the implementation of advanced library automation systems, which help manage workflows, inventory control, and user data more efficiently.

Beyond service delivery, ICT enhances collaboration among libraries through integrated networks and consortia, enabling resource sharing and joint subscriptions. Data analytics tools are increasingly being used to understand user behavior, optimize services, and make evidence-based decisions. Furthermore, the incorporation of digital preservation technologies ensures the long-term access and security of digital collections. In essence, ICT empowers libraries to be more responsive, agile, and innovative in meeting the evolving needs of their communities.

### 4. ESSENTIAL ICT SKILLS FOR LIBRARIANS

Librarians today are expected to have a range of ICT competencies, including:

- Proficiency in using integrated library systems (ILS)
- Database searching and management
- Knowledge of digital cataloging standards (e.g., MARC21, Dublin Core)
- Web design and content management
- Familiarity with e-resource management tools
- Social media and digital communication tools
- Data curation and digital preservation

### 5. CHALLENGES IN ACQUIRING ICT SKILLS

Despite the growing importance of ICT, many librarians face challenges such as:

- Limited access to training and resources
- Inadequate infrastructure and technological support
- Resistance to change and lack of motivation
- Gaps in library science curricula

### 6. OPPORTUNITIES AND BENEFITS

Acquiring ICT knowledge offers numerous benefits:

- Enhanced Service Delivery: ICT tools streamline library operations, improving efficiency and user satisfaction.
- Access to Global Resources: ICT skills enable librarians to connect users with worldwide digital databases and repositories.
- Professional Growth: Proficiency in ICT increases employability and opens avenues for career advancement.
- Support for Digital Literacy: Librarians with ICT expertise can teach users to effectively navigate digital resources.
- Innovation and Adaptability: ICT-literate librarians are better equipped to adopt emerging technologies and innovate services.
- Remote Service Capability: Knowledge of ICT allows librarians to provide services such as virtual reference and e-lending beyond the physical library space.

- **Effective Information Management:** ICT enhances cataloging, classification, and retrieval systems, ensuring better resource organization.
- **Collaboration and Networking:** ICT tools facilitate partnerships with other libraries, promoting resource sharing and professional collaboration.

## 7. ICT KNOWLEDGE FOR LIBRARIANS

ICT knowledge is vital for modern librarians to effectively manage digital resources and provide services in an increasingly online world. With ICT skills, librarians can navigate and utilize digital databases, design user-friendly websites, and support remote learning through online platforms. It also enables them to offer efficient digital reference services and facilitate access to e-books, online journals, and institutional repositories.

Having ICT competence empowers librarians to automate library operations, including cataloging, circulation, and user management. They can also analyze usage statistics and user behavior to improve service delivery. Furthermore, ICT-literate librarians are better equipped to support digital literacy initiatives within their institutions and communities.

This knowledge not only enhances their professional capabilities but also boosts their confidence and career prospects. As technology continues to evolve, the ability to adapt and adopt new tools is crucial. Therefore, ICT training should be an integral part of library science education and continuous professional development; ensuring librarians remain proactive, resourceful, and aligned with global digital trends.

## 8. IMPACT OF ICT ON LIBRARIANS

The impact of ICT on librarians has been transformative, reshaping their roles, responsibilities, and professional identity. With the integration of digital tools and platforms, librarians have transitioned from traditional gatekeepers of books to dynamic facilitators of digital information. ICT has empowered librarians to become proficient in managing electronic resources, delivering online services, and navigating digital platforms, making them indispensable in today's knowledge economy. ICT has also enhanced the efficiency and productivity of librarians by automating routine tasks

such as cataloging, circulation, and inventory management. This shift has enabled them to focus more on user engagement, research support, and digital literacy training. Moreover, ICT has expanded the reach of librarians beyond the physical library, allowing them to support remote users through virtual reference services and online databases.

Additionally, ICT has fostered professional growth by encouraging continuous learning and upskilling. Librarians are now required to stay updated with emerging technologies, trends, and tools, leading to a more adaptive and innovative workforce. However, the shift also poses challenges, such as the need for constant training and the pressure to keep pace with rapid technological change. Despite these challenges, the overall impact of ICT on librarians is largely positive, enhancing their relevance, visibility, and value in the digital age.

## 9. RECOMMENDATIONS

To bridge the ICT skill gap among librarians, the following measures are recommended:

- Integrating ICT modules into library science education
- Regular ICT training and workshops for in-service librarians
- Investment in ICT infrastructure within libraries
- Encouragement of a culture of continuous learning and innovation

## 10. CONCLUSION

In the digital age, ICT knowledge is no longer optional but a necessity for librarians. As the role of libraries continues to evolve, so too must the skill set of librarians. Embracing ICT not only enhances their effectiveness but also ensures that libraries remain vital components of the information society.

By acquiring ICT competencies, librarians can play a more proactive role in facilitating access to global knowledge, supporting digital scholarship, and meeting the dynamic needs of 21st-century users. ICT-literate librarians are better equipped to handle the technological transformations that are shaping education, research, and information dissemination. As stewards of digital information, their role is critical in promoting information equity, preserving

cultural heritage digitally, and enabling lifelong learning through inclusive digital services.

Therefore, it is imperative that institutions, policymakers, and library educators prioritize ICT training and resource development. Only through sustained commitment and strategic planning can we ensure that librarians are empowered to navigate the digital frontier confidently and competently.

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