



Beyond the Books: Cultivating Creativity and Innovation in Central University Libraries with Special Reference to North East Region

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Abstract

Libraries are becoming more than just places to store books in an age where technology is constantly evolving. Libraries of today are dynamic places that support community involvement, creativity, and innovation. Libraries play a more important role than ever in fostering creativity as information services become more digital and user-centric. This paper investigates how contemporary libraries might go beyond traditional information services by incorporating innovative techniques and resources. By examining case studies and exploring emerging trends, we highlighted how libraries may provide a wide range of services that not only meet information demands but also promote creative exploration and multidisciplinary collaboration.

Keywords: Creativity, Innovation, Central Universities, North East India, Emerging Technologies, Cloud Computing

1. Introduction

The role of the modern library is rapidly evolving—from a repository of books to a dynamic hub for creativity, learning, and innovation, adapting to the changing needs of its community (Williams, 2021). Libraries of today are equipped with the latest emerging technologies that are being designed for them. We can take examples of www integration, AI and machine learning, augmented reality and virtual reality. However, these are practically available in very few libraries and the rest are at the developing stage. Libraries are moving beyond their traditional role as book repositories to become dynamic hubs of innovation, creativity, and community engagement in the digital age. As technology reshapes information access, libraries have a chance to adopt new ways that stimulate innovation in both their services and settings. Cultivating creativity in libraries entails more than simply providing access to resources; it involves the construction of environments that inspire imagination, facilitate learning, and encourage collaboration. Libraries are reshaping themselves as hubs for creativity, with maker spaces, digital media labs, creative programming, and interactive learning technologies all available.

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B. Rautaray et al. (eds.), *Proceedings of the International Conference on Marching Beyond the Libraries (ICMBL): Leadership, Creativity, and Innovation (ICMBL 2024)*, Advances in Economics, Business and Management Research 326,

https://doi.org/10.2991/978-94-6463-712-0_17

2. Objectives

- To explore the role of libraries in fostering creativity and innovation
- To examine modern technologies and tools that support creative learning in libraries
- To analyze the impact of creative programming and services on library users
- To explore the integration of creative learning into educational support services

3. Methodology

The study mainly relies upon primary data that has been gathered through websites of the universities. Moreover, a small amount of secondary data from previous literature has been borrowed for double authentication of the contents. The data have been collected through survey and observation from the library websites of the nine central universities of North East India. A case study has been done on the libraries and a checklist has been prepared for collecting data from the websites.

4. Literature Review

Shukla and Tripathi (2010) made a comparative study of 20 central universities and 19 institutes of national importance, including Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs) academic libraries from India using a method to measure Overall Website Performance Calculation (OWPC) and Criteria-wise Website Performance.

Jantz (2012) conducted an interview of the university librarians of six institutions on innovation in academic libraries which revealed a commitment to innovation and a concern for how to encourage risk-taking behaviour.

Akwang (2016) in his paper examines creativity and innovation in management of academic libraries where he found a lack of innovative technologies that could not provide quality information resources and services to users. He recommended educational constituencies and library managers to embrace creativity and innovation as tools for organizational effectiveness.

Garcia (2018) suggests that modern libraries are increasingly being redesigned as community hubs that promote social interaction, creativity, and collaboration. Maker spaces, media labs, and coworking facilities have replaced ordinary quiet reading rooms, indicating a shift in user expectations and the role of libraries in the community.

Thompson (2021) highlights how user-centered design in library websites and digital catalogs, which includes features like voice-activated search and changeable font sizes, has made it easier for users to navigate and access information. The integration of mobile apps has further boosted accessibility by allowing users to manage their accounts, renew books, and search catalogs from their smartphones.

Davis (2022) noted that cloud-based library management systems reduce the need for physical storage and enable libraries to offer more expansive digital collections without the limitations of physical space.

According to Patel and Gupta (2022), libraries have evolved beyond their traditional role of providing access to information to become hubs for creative exploration and lifelong learning. This movement is consistent with broader cultural trends in which individuals seek opportunities to participate in experiential learning and innovation. As these programs gain popularity, libraries continue to expand into centers for technology, creativity, and education.

5. Why Library Innovation?

In recent years, librarians have debated the importance of innovation in libraries and the potential for implementing novel products and services. At the 2007 American Library Association (ALA) Conference panel "The Ultimate Debate: Do Libraries Innovate?", participants debated whether libraries are truly innovative. They also discussed obstacles to library innovation, such as limited resources and a culture that discourages experimentation (Pace, Janes, Schneider, & Abram, 2007). Library innovation involves rethinking and transforming existing library services to meet the evolving needs of the modern world. Libraries are adopting innovative techniques to be relevant, interesting, and accessible to different communities as technology develops and user expectations change. Libraries innovate in a variety of ways, such as through technology integration, space reconfiguration, and the development of new programs and services. The adoption of emerging technologies like AI-driven chatbots and RFID systems has transformed library operations, making them more efficient and improving the accessibility of resources for a wide range of users (Smith & Johnson, 2020). Below mentioned are some the emerging innovative technologies that a library can implement:

5.1. RFID Integration

Modern libraries have embraced Radio Frequency Identification (RFID) as a game-changing technology to enhance operational efficiency, streamline processes, and improve user experience. By integrating RFID into library systems, libraries can automate many manual tasks, leading to better management of resources and more time for staff to engage in user-centric services.

- **Inventory Management** - RFID tags attached to books and other materials allow for easy tracking and management of inventory. RFID doesn't need direct line-of-sight scanning and can scan many products at once, unlike standard barcode systems. This expedites processes such as inventory counts, missing item searches, and late or missing material identification.
- **Self Checkout and Return Facility** - RFID technology enables self-service kiosks for both checkout and returns. Users can check out multiple items at once by simply placing them on the RFID-enabled station, making the process faster and more convenient. Likewise, when a customer drops off an item at a return station, the system may be updated immediately, cutting down queues and raising customer satisfaction.
- **Security and Theft Protection** - RFID tags have the ability to serve as security tools. The system turns off a security feature when an item is checked out. RFID-enabled gates at the library's exits have the ability to sound an alert if someone tries to depart with a piece of material that hasn't been properly checked out. RFID is more efficient than more traditional systems like electromagnetic (EM) strips because of its dual use of inventory tracking and security.

5.2. Cloud Computing

Cloud computing is rapidly becoming an integral part of library services, enabling libraries to operate more efficiently and offer enhanced services to users. Libraries can store, manage, and distribute digital content in a more flexible and scalable way by utilizing cloud technologies.

- **Flexible Access to Resources** - Cloud computing allows users to access databases, multimedia, eBooks, journals, and other library materials from anywhere at any time. Through online portals and mobile apps, users can access library's digital collections, which provide a more flexible and user-friendly experience than physical locations with limited hours.
- **Collaboration and Remote Services** - Cloud-based tools enable libraries to collaborate with other institutions, researchers, and users more effectively. The cloud enables connections across geographic borders for shared digital repositories, cooperative research projects, and remote reference services, among other uses. Additionally, cloud-hosted webinars, online study rooms, and remote study groups are available to patrons.
- **Data Security and Backups** - Strong security features, such as encryption, access controls, and automated backups, are frequently included with cloud services. These features can safeguard sensitive user data and ensure the long-term preservation of digital collections. Libraries, which manage both personal data and valuable intellectual content, should pay particular attention to this.
- **Scalability and Innovation** - The cloud provides practically limitless computing power and storage, allowing libraries to adopt new technologies and grow their digital collections without worrying about physical limitations. Libraries can easily scale up as their needs grow, integrating services like AI-driven research tools, big data analytics, or even hosting interactive virtual exhibits—all powered by the cloud.

5.3. Social Media Applications

Social media has evolved into a valuable tool for libraries, allowing them to interact with users, market services, and develop community ties in ways that extend beyond the physical library space. Libraries may provide dynamic, interactive experiences to their users by utilizing platforms such as Facebook, Twitter, Instagram, YouTube, and LinkedIn.

- **Promoting library services and events** - Social media is an excellent platform for libraries to announce new services, upcoming events, workshops, or book club meetings. It keeps the community updated with news about programs, special collections, and seasonal activities. For example, Facebook Events or Instagram Stories are used to promote upcoming author talks, literacy programs, etc.
- **Engaging with the community** - Social media allows libraries to interact in real time and directly with their users. By means of polls, direct messages, and comment sections, libraries are able to gather feedback, respond to inquiries, and even solicit suggestions for new initiatives. This two-way communication helps libraries stay

connected to the needs of their communities, ensuring services are relevant and responsive.

- Showcasing Collections and Resources - Libraries can utilize social media to highlight unique aspects of their collections, such as rare books, digital archives, or new arrivals. Instagram and Pinterest, for example, are great for visually exhibiting these collections, whilst platforms such as YouTube can be utilized to make virtual tours, tutorials, or "how-to" videos for library materials. These digital glances into the library can pique interest and attract additional visitors, both in person and online.

5.4. Remote Access

As libraries innovate, they must also prioritize digital inclusion, ensuring that new technologies and resources are accessible to all patrons, particularly those in underserved communities (Davis, 2022). Remote access has become an essential aspect of modern libraries, allowing users to access materials, services, and support from anywhere and at any time. With the growing trend of digital and online learning, remote access guarantees that libraries may continue to serve their communities beyond their physical doors.

- Access to Digital Resources - One of the key advantages of remote access is that users can access a diverse range of digital resources, including eBooks, academic journals, databases, audiobooks, and multimedia content. Patrons can access the library's collection remotely via library websites or specific online platforms, eliminating the need for an in-person visit. This is very useful for students, researchers, and remote learners.
- Library Management Systems and Online Catalogs - Remote access to library management systems (LMS) enables users to search the catalog, place holds on materials, and renew borrowed items online. Integrated systems offer a smooth experience, allowing patrons to manage their library accounts, check due dates, and request resources from any device with internet connection.
- Online Learning and Research Tools - Many libraries provide remote access to research tools and educational platforms, including databases such as JSTOR, PubMed, and ProQuest, as well as language-learning software. Libraries also provide access to remote learning opportunities, such as virtual workshops, webinars, and self-paced courses, enhancing lifelong learning and academic support from any location.
- Remote Book Borrowing and Curbside Pickup - In addition to digital resources, some libraries offer remote borrowing services, allowing users to order physical materials online and schedule curbside collection. This service enables contactless borrowing, allowing patrons to obtain physical books, DVDs, and other materials without entering the library.
- Mobile Library Apps - Remote access is further strengthened by library mobile apps, which allow users with convenient access to their accounts, catalogs, and resources on their cellphones. These apps frequently incorporate features like mobile checkouts, digital library cards, and push notifications for due dates or upcoming events.

5.5. Quick Response (QR) Scan Option

QR (Quick Response) codes have become a popular tool in libraries, offering users an easy and contactless way to access information and services. By simply scanning a QR code with a smartphone or tablet, library patrons can instantly connect to various resources, saving time and enhancing their overall experience.

- **Library Tours and Interactive Maps** - Libraries may place QR codes throughout the building that direct users to specific portions of their online catalog. For example, a QR code in the history section may lead viewers to eBooks, databases, or other history-related resources. This allows users to easily view relevant digital resources without having to search the catalog.
- **Contactless Checkout** - QR codes facilitate contactless book checkout. Users scan the QR code on a book's label or kiosk to navigate to the checkout page, where they can log in and borrow the item. This lowers the need for personal interaction with library staff, making borrowing more efficient.
- **Other Features** - QR codes can also facilitate contactless checkouts, Wi-Fi access, and study room reservations, as well as provide connections to video lessons, research tools, or instructive content. QR codes can be used to enhance special collections and exhibits by linking to multimedia content such as audio guides and background information. Furthermore, QR codes enable customers to download library apps and interact with services remotely, resulting in a more connected and flexible library experience.

5.6. Virtual Reference Tools

Virtual reference systems have become critical for libraries to provide real-time aid and support to patrons, regardless of their location. Patrons can use these tools to communicate with librarians online and get research assistance, technical support, and library services remotely. Through email, live chat, video conference, or even social media, users can receive the help they need, no matter where they are.

- **Live Chat Services** - Live chat capabilities enable users to communicate with librarians in real time via a chat window on the library's website or app. Librarians can quickly answer queries, direct users through catalog searches, and provide research assistance via platforms such as LibChat (from Springshare) and Tawk.to. This is especially handy for users who require immediate assistance without visiting the library in person.
- **Email Reference Services** - Email is still a popular virtual reference tool for non-urgent inquiries. Patrons can submit detailed questions for information, and librarians will answer within a specific timeframe. Email reference is useful for complex queries that require detailed responses or research.
- **SMS/Text Messaging Services** - Some libraries employ SMS or text messaging services to provide rapid answers on the go. Services like Mosio and Text-a-Librarian allow patrons to send short, precise requests via text message and receive prompt responses. This tool is great for simple, time-sensitive inquiries, such as checking library hours or renewing materials.

- Video Conferencing and Virtual Consultations - Libraries provide virtual reference consultations using video conferencing technologies such as Zoom, Microsoft Teams, and Google Meet. These tools provide more individualized interactions, allowing clients to discuss their research needs and receive guided assistance in using library resources. Video consultations can replicate in-person reference interviews, making them an effective tool for academic or detailed research support.
- Chatbots and AI-Assisted Reference - Some libraries have begun to incorporate AI-powered chatbots, such as those based on platforms like Springshare's LibChat or IBM Watson, to give 24x7 virtual reference assistance. These chatbots can answer routine questions, direct users to resources, and even assist with catalog searches. While chatbots are not a replacement for human librarians, they do provide round-the-clock service, boosting access to information outside of typical library hours.
- Online Knowledge Bases and FAQs - Many libraries construct virtual reference portals that include a knowledge base or frequently asked questions (FAQ) component. These self-service technologies, enabled by platforms such as LibAnswers and ZenDesk, allow users to discover answers to common questions without requiring direct involvement. This allows users to troubleshoot issues and get information quickly and independently.

5.7. Special Features for Visually Impaired People

Libraries can implement various features to make their services and resources more accessible and inclusive for visually impaired people. Libraries may make their spaces more welcoming and user-friendly by including assistive technologies, specialized resources, and supportive services.

- Screen Readers and Magnification Software - Libraries can provide computers with screen readers such as JAWS (Job Access With Speech) and NVDA (NonVisual Desktop Access), which convert text into speech or braille output. Screen magnification software, such as ZoomText or MAGic, enlarges text and images on the screen, making it easier for visually challenged people to explore digital content.
- Audiobooks and Text-to-Speech (TTS) Tools - Audiobooks are an essential resource for visually impaired individuals. Libraries can provide a diverse range of audiobooks in many genres and formats, available via platforms such as OverDrive, Libby, and Audible. Also, text-to-speech tools can be implemented to convert written content into audio, enabling users to listen to digital documents or web pages.
- Tactile Signage and Wayfinding - Libraries should incorporate tactile signage in Braille and big print throughout the building to help visually impaired users in navigating the space independently. Audible wayfinding technologies, such as audio beacons or apps like BlindSquare, can also provide spoken instructions and information about the library's structure and services.
- Braille Embossers and Printers - Libraries can provide Braille embossers and printers for visually challenged patrons to produce physical Braille publications from digital

files. This allows users to print personal or research items in Braille, making them more accessible.

- 3D Printed Tactile Books - Some libraries are using 3D printing to make tactile books, which allow visually challenged readers to feel raised graphics in response to the text. This can improve the reading experience, particularly for children and others who enjoy tactile learning.

6. Data Analysis

6.1. General Information

The below mentioned table depicts the general information about the libraries of the universities collected from the nine central universities of North East India and has been arranged in chronological order as per their year of establishment.

Table 1: General information about the libraries

Sl. No.	Name of University	Year of Establishment	URL of Library Website	Location of Library
1	North Eastern Hill University (NEHU)	1973	https://www.nehu.ac.in/library/	JV6W+HXG, NEHU Mawlai Umshing Mawkyroh, North Eastern Hill University, Shillong, Meghalaya 793022
2	Manipur University	1980	http://mulibrary.manipuruniv.ac.in/	QW3H+6QR, Imphal, Torban, Manipur 795003
3	Rajiv Gandhi Central University	1984	https://rgu.ac.in/library/	5Q29+R29, Doimukh H.Q., 791112
4	Tripura University	1987	https://tripurauniv.ac.in	Q768+8M2, Suryamani Nagar, Bikramnagar, Tripura 799022
5	Assam University	1989	http://www.aus.ac.in/library/	MPMX+GQ5, Silcoorie Grant, Assam 788011
6	Nagaland University	1989	https://library.nagalanduniversity.ac.in/	NA
7	Tezpur University	1994	https://www.tezu.ernet.in/Library/	Tezpur University, Napaam, Tezpur, Parmai Gaudi Gaon, Assam 784028
4	Mizoram University	2001	https://lib.mzu.edu.in/	MZU Central Library PMM7+RCQ, Aizawl, Mizoram 796004
9	Sikkim University	2006	https://library.cus.ac.in/	8H6Q+MJ2, National Highway, 31A, Tadong, Gangtok, Sikkim 737102

6.2. ILMS software used in the libraries

All the universities use KOHA or SOUL software for their library automation.

Table 2: ILMS used in the libraries

Sl. No.	Name of University	Name of ILMS
1	Tezpur University	KOHA
2	Assam University	KOHA
3	Manipur University	KOHA
4	Mizoram University	KOHA
5	Tripura University	KOHA
6	Nagaland University	SOUL
7	Rajiv Gandhi Central University	KOHA
8	North Eastern Hill University	KOHA
9	Sikkim University	KOHA

6.3. Emerging technologies implemented in the libraries

Here is the implementation of latest emerging technologies in the library services for more efficient reference to the users. We have selected the common emerging technologies which are being found in libraries today.

Table 3: Emerging technologies in the libraries

Sl. No.	Name of University	RFID Integration	Cloud Computing	Virtual Reference Tool	Remote Access facility	Social Media Applications	QR Code	Mobile App
1	Tezpur University	✓	✓	✓	✓	✓	✓	✗
2	Assam University	✓	✓	✓	✓	✓	✓	✓
3	Manipur University	✓	✓	✓	✓	✓	✗	✗
4	Mizoram University	✓	✓	✓	✓	✓	✗	✓
5	Nagaland University	✓	✓	✓	✓	✓	✗	✗
6	Tripura University	✓	✓	✓	✓	✓	✗	✓
7	Rajiv Gandhi Central University	✓	✓	✓	✓	✓	✗	✗
8	North Eastern Hill University	✓	✓	✓	✓	✓	✗	✗

9	Sikkim University	✓	✓	✓	✓	✓	×	×
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6.4 Social media applications

This table shows the social media platforms available on their websites. It has been seen that some libraries use their university pages for social media while some of them have additional social media pages exclusively for the libraries themselves.

Table 4: Social media applications

Sl. No.	Name of University	Facebook	Twitter	Instagram	You Tube	LinkedIn	Google+
1	Tezpur University	✓	✓	✓	×	×	×
2	Assam University	✓	✓	✓	✓	✓	✓
3	Manipur University	✓	✓	×	✓	✓	×
4	Mizoram University	✓	✓	×	✓	×	×
5	Nagaland University	✓	✓	✓	✓	×	×
6	Tripura University	✓	✓	✓	✓	✓	×
7	Rajiv Gandhi Central University	✓	✓	×	✓	✓	×
8	North-Eastern Hill University	✓	×	✓	×	×	×
9	Sikkim University	✓	×	×	×	×	×

6.5. Virtual reference services in the libraries

Here is the clear picture of libraries offering virtual reference services like web OPAC, online book reservation, ask librarians, but chatbots is still not used by any of the university libraries since it is a new and evolving concept.

Table 5: Virtual reference services in the libraries

Sl. No.	Name of University	Web OPAC	Single Window Search	Online Book Reservation	Chatbots	Live Chats	Virtual Labs	Ask a Librarian
1	Tezpur University	✓	×	✓	×	×	×	✓
2	Assam	✓	✓	✓	×	×	×	✓

	University							
3	Manipur University	✓	✓	×	×	✓	✓	×
4	Mizoram University	✓	×	×	×	NF	✓	✓
5	Nagaland University	×	×	×	×	×	×	✓
6	Tripura University	✓	×	×	×	×	×	×
7	Rajiv Gandhi Central University	✓	✓	×	×	×	×	×
8	North Eastern Hill University	✓	✓	×	×	✓	×	×
9	Sikkim University	✓	×	✓	×	×	×	✓

6.5. Application of Internet of Things (IoT) in libraries

IoT has revolutionized the way of living by connecting objects to the internet, thus making life simpler than ever. A library can also implement IoT in its field by making the books RFID-integrated, geo-tagged, and even employing AI in its system.

Table6: Application of Internet of Things (IoT)

Sl No.	Name of University	RFID	AI	Geo-Tagging
1	Tezpur University	✓	×	×
2	Assam University	✓	×	×
3	Manipur University	✓	×	×
4	Mizoram University	✓	×	×
5	Tripura University	✓	×	×
6	Nagaland University	✓	×	×
7	Rajiv Gandhi Central University	✓	×	×
8	North-Eastern Hill University	✓	×	×
9	Sikkim University	✓	×	×

6.7. Special features for visually impaired persons

Libraries must provide specific services to persons with special needs, especially those who are visually impaired. None should be deprived of using the library resources, therefore some tools are used in the libraries to help them out.

Table 7: Features for visually impaired people

Sl. No.	Name of University	Braille Collection	Screen Reader	Audio-book/Audiovisual Materials	3D-printed Tactile Books	Text-to-speech Tool
1	Tezpur University	✓	✓	✓	×	×
2	Assam University	✓	✓	✓	×	×
3	Manipur University	✓	×	✓	×	×
4	Mizoram University	✓	×	✓	×	✓
5	Tripura University	×	✓	✓	×	×
6	Nagaland University	✓	✓	×	×	×
7	Rajiv Gandhi Central University	✓	✓	×	×	×
8	North Eastern Hill University	×	×	✓	×	✓
9	Sikkim University	✓	✓	✓	×	×

7. Findings

Table 2 indicates that all surveyed universities utilize the KOHA Integrated Library Management System (ILMS) for library management, with the exception of Nagaland University, which employs SOUL.

Table 3 highlights that each university library is equipped with an RFID system to support self-service borrowing and returning, enhance theft prevention, and aid in locating misplaced books. All libraries also utilize cloud computing, primarily with DSpace as their institutional repository, and offer remote access to users. Additionally, virtual reference tools and social media accounts (either university-wide or library-specific) are present across the board. However, differences arise in QR code and mobile app features: only Assam University and Tezpur University provide QR codes for direct access to library resources, while mobile apps are available at Assam University, Mizoram University, and Tripura University.

Table 4 reveals that Facebook is the most common social media application with all the libraries having their facebook pages either dedicated or shared with their university's page. While applications like Twitter, Instagram and You Tube are also present in most of the libraries but the use of LinkedIn and Google+ is least among them.

Table 5 reveals Web OPAC as the most common virtual reference service among these libraries with only one library left behind. Services like Single Window Search and Ask A Librarian are moderately used among the libraries while other services such as Online Book Reservation, Live Chats and Virtual Labs are underutilized. It is to be noted that the Chatbots are not present at any one of the libraries.

Table 6 shows that implementation of IoT or AI has not yet been achieved in the selected university libraries. However, RFID, which comes under IoT, is available in all the libraries but AI and Geo-Tagging feature is missing in all of them.

Table 7 showcases the unique features provided by university libraries to accommodate visually impaired patrons. While most libraries offer a Braille collection, Tripura University and NEHU are exceptions. Screen readers, a vital tool for accessibility, are widely available but conspicuously absent at Manipur University, Mizoram University, and NEHU. Audiobooks and audiovisual resources enrich the services of nearly all libraries, though they are not provided by Nagaland University and Rajiv Gandhi Central University. One notable gap across all libraries is the absence of 3D-printed tactile books. Furthermore, the availability of text-to-speech tools is limited, found exclusively in the libraries of Mizoram University and NEHU.

8. Conclusion

The outcomes of this survey provide a clear picture of the current situation of digital library resources and services of the central universities of North East India. The analysis reveals that, while there is a strong commitment to modern library management systems, as seen by the widespread use of KOHA ILMS and RFID technology for efficient operations, there are areas that require significant improvement to match global standards and user expectations.

The utilization of cloud-based systems such as DSpace, as well as the provision of remote access, demonstrate a shift toward more accessible and user-friendly digital platform. However, disparities in the implementation of innovative features such as QR code integration and mobile apps indicate uneven progress among these universities. Social media involvement is well-established, demonstrating attempts to maintain active communication channels, however platforms like Twitter and Instagram exhibit varying utilization.

The review of virtual reference services reveals a generally good trend, with popular tools such as Web OPAC and the "Ask A Librarian" service being used. However, the limited availability of live chat support and burgeoning virtual laboratories highlights potential areas for more investment to improve real-time assistance and interactive learning experiences.

The lack of IoT and AI integration, despite the presence of RFID systems, implies that these libraries have yet to completely embrace sophisticated technologies capable of transforming user interaction and resource management. Similarly, the gap of specialized services for visually impaired users, such as 3D-printed tactile books and restricted access to text-to-speech technologies, highlights the need for more inclusion efforts.

In conclusion, while these universities have laid a strong foundation for digital resource offering, there is still plenty of room for growth. Expanding new services, promoting accessibility, and adopting emerging technology such as AI will be critical for these libraries to transcend traditional borders and meet the changing requirements of various user populations. Such developments would not only increase academic support, but will also establish these institutions as leaders in library innovation and inclusivity.

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