



The Role of Librarians as Digital Curators in the Digital Information Era in the Muhammadiyah University of North Sumatra Library

Annisa Nursalimah¹, M. Nasihudin Ali¹

¹Library Science Study Program, North Sumatra State Islamic University, Indonesia

*Corresponding Author: Annisa Nursalimah

Email: annisa0601201017@uinsu.ac.id



Article Info

Article history:

Received 11 July 2024

Received in revised form 3

August 2024

Accepted 28 August 2024

Keywords:

Librarian

Digital curator

Library

Abstract

This research aims to analyze the role of librarians as digital curators in the digital information era at the Muhammadiyah University of North Sumatra Library. In this research the author used a qualitative research method with a case study approach. The case study used aims to provide readers with an understanding of the role of librarians as digital curators in the digital information era. In the era of globalization, libraries must adapt to information technology to provide fast and accurate information. Librarians as digital curators play an important role in collecting, managing and maintaining relevant digital collections. Digital libraries allow access to information without physical boundaries. At the Muhammadiyah University of North Sumatra (UMSU) Library, librarians help users access digital information and provide training in using digital resources. This research analyzes the role of librarians as digital curators, their impact in managing collections and information services, as well as the challenges faced in the digital information era.

Introduction

When we live in an era of globalization, information has the ability to change various aspects of human life to become increasingly sophisticated. This condition is very important for the development of information and telecommunications technology for information institutions. Basically, libraries are considered capable of providing complete, fast and accurate information to users (Susinta & Senjaya, 2022). In the information era, libraries function as information providers. When associated with institutions that manage information, librarians should be able to take an important role in this era. This role includes information business, search, article search, etc., as well as being a reliable competitor as an information broker. To be able to play a role in this information era, librarians must face various obstacles and challenges, especially those related to advances in information technology (Setyorini, 2007; Saibakumo, 2021; Diseiye et al., 2024).

A good library is one that can use technology. Digital libraries are libraries that have technological advantages in this regard (Omotayo & Haliru, 2020). The system and collections have been supported by technology, and the collections too. Digital libraries offer solutions and make it easier for users to access electronic information sources with convenient tools in limited time and opportunities (Soni et al., 2020). Users are no longer physically tied to the library during service hours, so they don't need to come there to get information. Digital-based libraries are the result of the development and application of information and communication technology (ICT) to improve the quality of education, with the aim of empowering human resources to be able to compete globally (Withorn et al., 2020). Digital libraries aim to help users increase their knowledge, making it easier to find and access book sources (Firdausi & Mudjito, 2021). (Sun & Yuan, 2012) Also argue that digital libraries are an infrastructure that

includes policies and procedures, as well as organizational, political and economic mechanisms necessary to access and preserve digital content. Digital libraries can help overcome the problem of limited access (Widayanti, 2015). The problems faced by libraries are increasingly complex. Some challenges include the ever-increasing amount of data, the increasing variety of library materials, the complexity of current information sources, and future generations. Libraries must have adequate human resources to function as centers for information, collaboration and research. but also plays an important role in improving information accessibility. To increase information accessibility and disseminate knowledge in the information society, digital libraries need to be developed (Martzoukou, 2021). The development of information and its users depends greatly on the quality of life, opportunities for social change and economic progress. Libraries must consider the rights and obligations related to providing, storing, disseminating and using information in university activities to improve the quality of university libraries (Arum & Marfianti, 2021; Tzanova, 2020).

Becoming a librarian allows them to use their knowledge in information technology to direct users to various digital resources (Mehta & Wang, 2020). The role of a digital curator is becoming increasingly important because it involves the process of selecting, managing and curating various digital information sources. As digital curators, librarians have important responsibilities in maintaining the sustainability and reliability of digital collections, in addition to ensuring information accessibility (Mindel, 2022). Librarians must ensure that the information sources provided are reliable, accurate, and always updated. They must also understand user needs and preferences, as effective curation helps in understanding and disseminating information well.

Currently, the role of librarians has developed into a facilitator who makes internet access easier and acts as an educator who helps users overcome problems in using the internet (Abdul Rahman & Mohezar, 2020). Examples of tools used include search engines, online databases, catalogs, electronic journals, as well as web-based instruction and online tutorials. Modern librarians are also expected to have skills in managing and designing web pages, carrying out duties as database managers, collaborating on projects, and playing a role in making information policies for organizations (R, 2018). The same thing is also discussed in research entitled Transformation of the Role of LIPI Librarians Before and After Reorganization, namely Managing information sources which is the very dominant role of librarians in this matter. Ideally librarians really understand all aspects related to information, such as sources of information, how to manage information, and other things related to information management (Djaenudin & Tupan, 2020). Librarians are tasked with storing information where they work and usually have expertise and professionalism in managing information in various formats and environments (Ahmed & Sheikh, 2021).

The Muhammadiyah University of North Sumatra (UMSU) library is one of the main facilities that provides learning resources and advances knowledge for the academic community. UMSU has a vision to become a leading information service center for the entire academic community, which focuses on developing science and technology with a global view and Islamic Muhammadiyah values. The library's mission includes providing collections that are relevant to user needs, developing open access local repositories, providing superior services according to general standards, and developing a standardized library automation system (AL-Kubaisy & Al-Khateeb, 2024).

UMSU's strategic objectives include ensuring the relevance of library collections to user needs, providing all local content in the institutional repository, achieving excellent service according to minimum standards, implementing library automation system standards, and achieving

accreditation that meets total quality management standards (Syahfitri, 2022; Dewi, 2021). UMSU is also committed to building cooperation at national and international levels in the library sector and creating an environment that prioritizes Islamic Muhammadiyah values in libraries. The UMSU Library provides various services to support academic and non-academic activities, including the Digital Library which provides a collection of e-books that can be downloaded via the Android (Play Store) and Windows platforms, as well as a library volunteer program consisting of students from various faculties. These volunteers help with library operations, such as counter services and collection management, and play a role in increasing students' interest in reading (Corrall, 2022). Every year, UMSU also holds promotional activities carried out by library volunteers to increase reading interest and introduce the library to students.

The author highlights the importance of starting research by referring to previous research, even though the topics or themes may be different, they have similarities in the context of digital transformation and the role of librarians in the digital information era (Antonizzi & Smuts, 2020). The author has combined several previous research references that are relevant to the title of the topic to be investigated.

The first research, "Transformation of the Role of Librarians in Managing Digital Collections in Bandung Regency Libraries" was written by (Tyas, 2023). Managing digital collections requires librarian expertise in various fields such as classification, cataloging, information integration, database management, navigation, and being an intermediary to information sources. A comprehensive and attractive digital collection must be able to satisfy readers and fulfill their need for unlimited information and knowledge through the use of technology (Haleem et al., 2022).

The second researcher, "The Role of Librarians in the Information Age" written by (Setyorini, 2007). Librarians need to continue to develop themselves and collaborate with others as information managers in the current information era. One other factor that influences the ability of librarians to improve their role in the information era is the adoption of a positive work culture among librarians (Deja et al., 2021). Gradually, librarians must transition from tasks that still rely on manual processing to work that develops and increases knowledge. They also have to switch from conventional services to digital services or library automation.

The third research, "The Role of Higher Education Librarians in the Information & Digitalization Era" was written by (Rahmawati, 2012). A librarian must actively and creatively develop himself in library management that is oriented towards user satisfaction. The roles and responsibilities of a librarian are a benchmark for library user satisfaction. With the rapid development of information technology, the librarian profession must be willing to work in teams with professionals from various fields (Shahzad et al., 2020).

The aim of this research is to analyze the role of librarians as digital curators, evaluate the impact of this role in managing collections and information services, and identify the challenges faced by librarians in the digital information era.

The research being conducted by the author focuses on analyzing the role of librarians as digital curators in the digital information era at the Muhammadiyah University Library, North Sumatra. As digital curators, librarians are not only responsible for providing access to information but also must manage digital content carefully to ensure the quality, continuity and relevance of the collection. In this context, librarians act as curators who are responsible for selecting, maintaining and compiling digital information sources so that they provide added value for users. Librarians as digital curators are not only involved in collecting and organizing

digital information, but also need to develop strategies to maintain the quality and security of information amidst changes in formats, media and digital resources. This is done to meet user needs and ensure that the information provided remains relevant and trustworthy.

Methods

This research work uses a qualitative research paradigm founded on a case study to address the research problem that seeks to determine the role of a librarian as a digital curator in digital information age focusing UMSU Library. Further, according to the research questions of this study, qualitative research is most appropriate to use since it offers detailed examination of complex and contextualised social phenomena. Criterion-based sampling is used and the case study design is preferred to give a clear and comprehensive picture of how librarians at UMSU work through the issues of digital curation. As such, despite the current study's emphasis on a small community college, it seeks to produce findings that could have comparative implications for every discourse on librarianship in the era of new technology.

Research Setting

The study was done in UMSU Library, a large university library which has commenced to shift to electronic services. Since UMSU Library is involved in proper collection and organisation of digital resources, it provides a podium for this research. A number of the library's initiatives in this area are in line with counterpart trends in higher education libraries where the transformation from physical collections to digital ones requires the redefinition of roles of the librarian. Therefore, this research will focus on UMSU Library as its research site with the belief that the findings will provide a general picture of the experience of the institution in digital curation practices in a complex and ever-evolving academic establishment.

The participants recruited in this study were subjected to purposive sampling where the researcher target participants who have firsthand experience and interaction with digital curation at UMSU Library. Hence purposive sampling was considered because the study aims to unravel a particular roles and procedures that may necessitate in-depth a priori understanding. The study targeted 10 participants from which half of the respondents were senior librarians, others were IT specialists and the rest were administrative staff who have central roles in the digital curation process. From each centre, the participants were selected based on their experience and the engagement they have in the day-to-day management of the digital resources. This was done with a view of getting detailed information on the selected individuals to help in understanding the practices of digital curation at UMSU.

The sampling process was not haphazard, rather, it was done in a selective manner such that the participants were in a position to offer a divergent view on the issue of democratic curation apprehensions and possibilities. Data collection was to end when data saturation was realised and for the sample size of 10 a saturation point was realised hence was confident that the findings and results obtained from data analysis were reliable.

Data Collection Techniques

Data collection in this study was multi-faceted and included semi-structured interviews together with direct observations and review of relevant documents so as to ensure the researcher has an overall understanding of the research problem.

Among all the methods applied, the interviews with the participants were used as the main tool for collecting participants' elaborated responses. Semi-structured interviews were selected because they differ from completely unstructured interviews in that they allow the respondent and the interviewer to go where they want, but at the same time they are specific enough to

guide the respondent to answer specifically the questions that need to be answered. Many aspects of each interview were deliberately intended to explore the participants' personal experiences and expectations of their tasks as digital curators. However, because the questions asked required an open-ended answer, the researchers received a lot of diverse, qualitative information. The interviews were carried out in a way that the participants were not only asked about what they do, but why they do it, and thus got an understanding of the multi-faceted process of digital curation.

Besides interviews, observations were also carried out in the library so as to access the procedures that are held in digital curation in real time. That is why observations were aimed at how the librarians engaged with the digital tools, how they ended up managing the digital collections, and how they helped patrons to get access to those resources. As a result, by observing these activities directly, the researcher could get contextual data that in turn supplemented and enhanced interview findings. This enabled the researcher to pick out some details such as body language, and how the particular media were arranged which could not have been easily determined from interviews alone.

The third form of data collection was document review and this included checking for documents that related to digital collections and these included; digital collection policies, internal guidelines for the use of digital collection, and reports of user feedback. This analysis gave the following insights of the hard structures that enable digital curation at UMSU Library. Thus, in analysing such documents, the researcher would be able to contrast the policy recommendations with the enacted practices articulated by participants and observed in detail in the context of the digital curation activities.

Data Analysis

Interview transcripts, observations and documents were coded and analyzed through a thematic cross-section method. The reason for selecting this method was that it is widely used to search and analyze patterns within the qualitative data. The initial stage of analysis involved transcription in which all the recorded interviews were transcribed in order to capture the participants' own worlds. This transcription process was even important in ensuring that data was not distorted in any way and also for a detailed analysis.

After transcription, the data was analysed by coding the data systematically. Coding meant identity of segments within the data and getting labels for these segments. The coding was sequential but some codes evolved as the researcher progressed through analysis of the data obtained. This made it easier to categorise the data into themes that now seem to come out of the research work being carried out.

When the initial themes were secured from the coded data, they were furnished and interpreted in the context of the research questions and under the literature review section. This system of thematic development facilitated meant that the researcher was able to relate different aspects of the data collected and hence get a broader perspective of the status of librarians as digital curators. To increase the credibility of the findings the themes were and cross-validated with data gathered from observations as well as document analysis. The use of multiple source of data to arrive at the same conclusion meant that the results reached were credible and accurate.

Results and Discussion

The study uncovered several key findings related to the evolving roles of librarians as digital curators at the Muhammadiyah University of North Sumatra (UMSU) Library. These findings are organized into four main themes: the expanding responsibilities of digital curation, the substantial challenges in managing digital collections, the strategies employed by librarians to

navigate these challenges, and the overall impact of digital curation on library users and services.

Evolving Responsibilities of Digital Curation

This study shows that a number of changes touch upon the duties of UMSU librarians due to them becoming digital custodians. This has happened, however, without less of the complexities this article describes. While changing roles imply moving from conventional library work which only focused on selecting, developing and providing access to digital resources to include managing the digital resources also requires the librarian to understand the tools that are used in the processes. This proposal indicates that though librarians are pretty active in trying to evolve the profession, the tremendous rate of change and the measly definition of digital curation overwhelm most of them.

"We are doing our best to manage these digital resources, but it's a lot to handle on top of our regular duties," (Interview, Librarian)

The following comment of one librarian enlightens the essence of the imposed paradox, which transforms a librarian into a 'knowledge manager' that is expected to master both conventional and digital competencies: This double plight can therefore be symptomatic of a more pervasive problem in academic libraries, namely the inadequate provision of support in the shift to digital collections. It is highly unlikely that these new duties can be incorporated to the list of expectations from a librarian without being provided for with training in that new aspect or being provided for with support in case the librarian gets overwhelmed, which is quite understandable given this new demand.

The field notes provide additional evidence of the difficulties of this change process. The observed difficulty in adapting traditional cataloging systems to digital formats reflects a deeper issue: the management of physical and digital collections are intrinsically and necessarily different and managing this new collection as a librarian means reconceptualizing the profession that isn't fully recognized or backed by institutions.

"the librarian had to refer to the manual several times" (Field Notes, 2024)

The fact that during the digital cataloging process implies that the tools they offer to Librarians are not as user friendly as need and as a result, the process is not as efficient or effective as need be. Furthermore, the uneven approach to what has been termed here as 'digital goods' reveals that, while there may be a recognition of the value of material curation in the digital age, there are challenges inherent in efficiently delivering on this promise. While librarians acknowledge the importance for alerting users about new resources, the constraint of time coupled with lack of resources to support these services which is further offset by the fact that digital curation is in most cases added in an existing demanding work schedule and framework implying that digital curation was never envisioned as an additional task as such but rather a core business activity that requires proper resourcing.

That means the necessity not only in new tasks but also in rather radical changes in the organization and funding of academic libraries. It is necessary for these institutions to understand that digital curation is not an extra activity; it is central to the task, and it should be managed as such, it means, that to be effective it should take time, human and financial resources, as well as proper staff training. If such a recognition is not made, it means the Librarians will continue to operate under tough conditions hence compounding probable holes that may exist in their delivery and user satisfaction. As such, it has also become necessary to reconsider these procedure in relation to the requirements of the digital curation, but not to

squeeze the new digital processes into the traditional mold of the physical collections management.

Table 1. Expanded Responsibilities in Digital Curation

Responsibility	Description	Challenges Noted
Selection of Digital Resources	Collaborating with faculty to identify essential digital resources.	Limited time to fully evaluate the vast array of available digital resources; reliance on faculty input may lead to inconsistencies in resource quality.
Organization of Resources	Implementing a structured system to categorize and manage digital materials.	Complexity in adapting traditional cataloging systems to digital formats; frequent errors in classification noted during observations, indicating a need for better training.
Maintenance of Digital Collections	Regularly updating digital resources and ensuring their relevance to academic needs.	Time-consuming process with frequent disruptions due to technical issues; the lack of a dedicated team for ongoing maintenance reflects broader resourcing issues.
Promotion of Digital Collections	Utilizing social media platforms to inform the academic community about new digital resources.	Inconsistent promotional efforts due to competing responsibilities; observed gaps in outreach effectiveness suggest a need for a more structured approach to digital communication.

Challenges in Managing Digital Collections

The issues mentioned in relation to managing digital collections can be considered both profound and as a symptom of a number of problems of the transition to the digital environment in the context of a library. One of the major challenges is the relatively high speed of development of these technologies, which makes librarians sure they are always playing catch-up. The comment represents this experience of being overburdened

"Technology is moving so fast, it's hard to keep up," (Interview, Librarian)

Unlike the previous challenges, this is not merely about grasping novel tools and approaches but about how these tools and approaches can be fitted into the present library services without exacerbating them. The practical implication of this challenge can be observed from the problems experienced with the use of the digital cataloging tool. The regular respiratory and advisory contact with the User Manual can give an impression that the tools are not self-explanatory and complications and costs may arise from the repeated consultations. This issue therefore raises the question of the mismatch between IT's concepts of how 'systems' should work and the reality for practicing librarians who have to negotiate them every day. While there is little doubt that curation is an example of uses of technology which are beneficial, the failure to design the tools with the end-users in mind merely results in the creation of more obstacles than solutions.

Adding fuel to this problem is the variability of the quality and reliability of the digital materials available. One of the issues stressed by the librarians involved changes in quality that destabilise what is given to the public, thus undermining user trust.

"We've had instances where a resource wasn't as reliable as we thought," (Interview, Librarian)

The comment, echoes other developments, such as the concerns over the selection of digital materials. This problem is intensified by a lack of funds for acquisitions with librarians having to allot amount of money to sources, quantity rather than quality is often chosen because money is an issue.

The data suggests that lack of training aggravates these problems. From the research, librarians have cited inadequacy in training as true, which means that there is a gap between the type of training offered to them and the skills needed in digitization.

"The training we get is often minimal, and it's not always relevant," (Interview, Librarian)

The comment, indicates a systematic problem that, while attending; one may not have training programs that directly addresses the need of digital curation. This lack is not only a dysfunction of librarians but also shows an impact on the quality of the services delivered to the users.

The problems observed in present day administration of digital collections in UMSU Library are typical of the systemic changes within an academic libraries' shift to digital services. However, breakneck rates of technological development, low awareness of digital curation, and lack of funding are conditions that, acting in concert, cancel the positive outcomes of curating content. To overcome them, there is a requirement for a more strategic approach to the adoption of tools with stronger focus on the user interface designs, adequately comprehensive training and better use of the available and needed resources not counting numbers but efficiency. Moreover, unequal quality of resources also points to the necessity of stronger license and quality checkups and possibly admitting a switch in views regarding a set of criteria for digital acquisitions.

Table 2. Key Challenges in Managing Digital Collections

Challenge	Description	Examples and Observations
Technological Change	Difficulty in keeping pace with rapid advancements in digital tools.	Observed issues with a newly implemented digital cataloging tool, including slow adoption and frequent need for manual consultation, highlight the mismatch between tool design and librarian needs.
Quality and Reliability of Content	Ensuring digital resources meet academic standards.	Instances of unreliable digital resources causing frustration among librarians and impacting user satisfaction indicate a need for more rigorous vetting processes.
Budget Constraints	Limited financial resources forcing difficult prioritization of acquisitions.	Tough decisions leading to gaps in digital resources for certain departments reflect systemic underfunding and its impact on resource availability.
Inadequate Training	Insufficient training for librarians on new digital tools and systems.	Librarians reported struggling with new systems due to a lack of comprehensive, hands-on training, suggesting that existing training programs are not meeting the practical needs of digital curation.

Strategies for Navigating Challenges

From the experience of librarians at UMSU, one can observe the creativity of the personnel and the constraints that any change in such a system presupposes. One such strategy is the use of the digital management system but the analysis made shows that the utility of the system is subject to the specifics of the system design and the degree of backing that is given to the system.

"The system helps, but it's far from perfect," (Interview, Librarian)

The comment is not exceptional, typical in the use of digital tools is that despite the great potential of the tools, there is always a problem on how to make the actual use if it efficient due to technical difficulties and absence of user-centrality.

Professional development as a strategy is laudable, but the data indicates that these endeavours are frequently inadequate. That librarians consider themselves to be 'learning on the job' rather than within a more traditional professional development framework shows that there is a disconnection between what is being offered and what is needed in the digital curation process. This has not only implications on the performance of the librarians but on the quality of service delivery in the various libraries. There is no targeted, hands-on training available that prepares librarians for the complexities of digital curation: they are set loose into the proliferating realm of intricate tools and processes which will make the delivery of services inconsistent.

Another intervention, which has been recommended, is the collaboration with external partners; it has also been noted to have its drawbacks. Some of the restrictive terms of these partnerships are also pointed out by one librarian, as they raise another more general concern in the contractual relations governing digital resources.

"The terms are sometimes limiting" (Interview, Librarian)

That is, the collaborations may surely open up possibilities of getting these resources, but constraints placed by publishers may somewhat hinder the efforts of the library in getting the most out of these resources for the user. This clearly shows that there is need for different and more open symbiotic agreements that would involve provision of more access by the users and more sharing of the resources.

The selective use of digital resources via social media is one such technique that shows how effective promotion of digital resources can be done and at the same time how the same measures are inadequate as well. Though librarians have tried to publicize new acquisitions, the irregularities in these promotions are symptoms of the bigger problem, workload and resources. It illustrates that unless commensurate support is given such strategies could remain far from their potential. This case therefore calls for a better focused incoming digital communication where there are clear defined positions and goals to be able to deliver effective communications.

"We need more dedicated staff for outreach," (Interview, Librarian)

It is only possible to support the attempts of the UMSU librarians to transform the knotty issue of digital curation into a viable project; at the same time, however, when witnessing these strategies, it is impossible not to notice that they are all created within quite a limited setting. Some of the first several inconsistencies include the following; Digital management system have produced mixed results as highlighted above, there is and has been inadequate professional development as discussed earlier, there is restriction often involved by external partners which has been highlighted above, there is no orderliness achieved on the digital

outreach as discussed previously. In order to enhance the supports of these strategies greater attention can be paid to the User experience in the selected tools, more practical and relevant training for focusing on these strategies, more open and context-sensitive arrangements about the sharing of resources, and more systematic communication within the digital media. These enhancements would also provide accretion to the capacity and efficiency of the librarians in responding to what the library community has to confront, as well as, enhancing the general improvement of library services.

Table 3. Strategies Employed by UMSU Librarians

Strategy	Description	Effectiveness and Challenges
Digital Management System	An integrated system for organizing and tracking digital resources.	Effective but with frequent technical issues; observed time-consuming troubleshooting indicates a need for better user-centered design and support.
Professional Development	Ongoing workshops and training sessions to enhance digital curation skills.	Limited by time constraints and often not tailored to specific needs; the reliance on "on the job" learning suggests that existing training programs are inadequate.
Collaboration with External Partners	Partnerships with publishers to expand access to digital resources.	Beneficial but with restrictive terms that limit flexibility in resource sharing; more flexible agreements are needed to maximize user access.
Selective Promotion of Digital Resources	Utilization of social media platforms to raise awareness of new resources.	Inconsistent implementation due to competing responsibilities; the need for more dedicated outreach staff indicates a gap in resourcing for digital communication.

Impact on Library Users and Services

The experiences of UM Library users and services of digital curation through UMSU have been both good and there are issues that are still being worked on. There are, of course, certain positive outcomes of this: using digital resources is much more convenient than using physical ones at least in specific fields, but the disillusioned expectations remain numerous. These are the full preoccupations with the question of going digital in a manner that responds to the complexity of the academic community.

"It's great that we have access to these resources from anywhere" (User Feedback, 2024)

The comment of the users reflects the advantages of the digital resources in terms of the easy access to the information and materials. However, this positive sentiment is made a little unfair by these users' complaints about scarcity and obsolescence of content on digital media.

"The e-books I needed weren't available, or they were really old editions" (User Feedback, 2024)

Unfortunately, the comment points to yet another feature of resource quality and availability. The following feedback more or less are indicative of students' recognition of convenience offered by these new tools but at the same time it indicates that the effectiveness of any tool depends on the quality and relevance of the materials that are provided to the learners.

The data also contradicts the impression that librarians fail to notice such gaps and do not attempt to fill them, since the majority of them stated that they are aware of these gaps, and try to cover them, as far as they can, with the tools and knowledge they have. Such a comment aggravates the systemic problems, which have to be solved to ensure the digital curation's effective implementation. This calls for a better planning of resources and faculty development that can focus on the quality and often, appropriateness of the resources that are being used to support learning.

"We need more budget, better training, and more time" (Interview, Librarian)

The interaction which is described in the field notes and which involved a librarian who was unable to locate a digital journal that could possibly be relevant to a student, also paints a vivid picture of the practical implications of the challenges. Thus, the fact that the student had to use a resource of considerably less relevance for their task, demonstrates the existing gap between the needs of the users and the digital library. This is not only a problem of users' satisfaction, but raises a number of questions about library's effectiveness in supporting academic research operations.

The influence of digital curation to the users of UMSU Library can be said to be a testimony of what embracing digital services entails and what might be wrong with this approach. Despite the advantages associated with the use of digital resources in terms of flexibility and access, the application of these resources exposes learner to problems regarding the quality, accessibility and the relevance of the available resources. But to nowadays satisfy the user needs this and only this there should be more focus on the fact that apart from being accessible digital collections have to be high quality and relevant to the community of academic researchers. This means that there must be increased and better recognition of the quality rather than the mere quantity of resources required, as well as more directed and efficient professional development for the librarians who must be in a position to guide these resources once purchased. Furthermore, it is clear that user feedback could be used more proactively in relation to the planning and development of the library's digital collections so that it is delivering collections that meet the needs of users in the modern world.

Table 4. User Feedback on Digital Resources

Feedback Type	Description	Examples from User Feedback
Positive Outcomes	Users appreciate the convenience of accessing digital resources online.	<i>"It's great that we have access to these resources from anywhere."</i> (User Feedback, 2024)
Challenges and Dissatisfaction	Users express frustration with the limited selection and outdated nature of some digital materials.	<i>"The e-books I needed weren't available, or they were really old editions that weren't as helpful."</i> (User Feedback, 2024)

The Evolving Role of Librarians: Beyond Traditional Boundaries

The results of this study highlight the change in the nature of work done by librarians at UMSU Library where they are now performing tasks that are different from the conventional professional practice. Such transition aligns with general developments identified in the area of specialisation and that currently, in addition to being responsible for physical collections, the librarians perform the roles of curators of digital assets for managing, facilitating access, and promoting digital objects. Although the process of moving to digital curation does not come without its problems, as can be seen from Table 3, librarians have a two-fold role: the traditional and the digital.

This double workload is not an isolated case for such libraries but rather a form of a widespread systemic problem in which the process of digitization is significantly faster than the ability to support those on the ground level. According to Bates (2015) digital librarianship has changed the traditional role of the librarian as he or she needs to be versatile and equipped with computer and information skills, as well as knowledge about the user. The results of this research indicate that, despite the commendable efforts that UMSU librarians are putting into change, their training and support are insufficient to cope with this process, that is why they become ineffective and frustrated.

The difficulties that can be linked with this new role are not exclusive to UMSU and can be a result of the tendencies registered in the sphere. In their study, Partridge et al. (2010) argue that the constant development of digital information technologies leaves the traditional academic libraries in a very different position that entrains new roles to the professionals that are not sufficiently backed by institutional concepts. Certainly, such shift brings significant convergences to this perspective: it is high time to devise a more constructive and comprehensive approach toward digital curation that acknowledges its as a core tenet of contemporary librarianship.

From being information gatekeepers, academic librarians are now expected to be information stakeholders and for this position to hold, there must be changes in the structure of most academic libraries and the allocation of resources to them. The results imply that although, there is an increased workload in the role of librarians due to digital curation, if not well trained, supported or recognised of the complexities involved in digital curation then the chance of performing optimally is low. This demands a shift in institutional approaches that view digital curation as an appendage to institutional frameworks but should rather be an integral part of institutional organizational structures and frameworks that seeks to employ skilled and well-trained staff alongside proper infrastructure support for professional development concerning this function all the time. Subsequent studies should attempt to evaluate the application of such structural changes on the efficiency of digital curation and the wellbeing of the librarian.

Challenges of Digital Transformation

The issues highlighted in this work, namely those of technological development, financial limitations, and staff training, can be viewed as characteristic for the libraries under transition in the course of the digitization wave. Advancements in technology are taking place at the higher rate that on one hand opens the doors for developing better services in the libraries but on the other end puts a lot of pressure on those involved in the implementation and management of these technologies in libraries.

The fact that technological change has been so clearly identified at UMSU Library supports the evidence located in the literature, which demonstrated that librarians indicate that they feel pressured to keep abreast of new technologies and new systems that they have to learn (Tenopir, 2012). Most disturbing is the authors' finding that librarians are often left to learn on the job, which means that current professional development initiatives may not address the real needs of digital curation. The nature of this gap between the training offered and the training needed reveals an important concern in the field generally; with emerging technologies being deployed more frequently, commonly there is a tendency that the areas in which training programs are being developed lag behind the actual uptake of new technologies (Madrid, 2013).

Another challenge that is worsened by the problems of budget is the decision-making process in the procurement of digital resources as face by librarians at UMSU. This problem is not only specific to UMSU but is evident in most academic libraries that receive limited funds they stretch in meeting the needs of their patrons not forgetting that majority of the resources received in the libraries are free, but accessing them is not a problem free affair hence every time a financial constraint interferes with access to resources, it results to more hours being spent on searching for the resources (Lankes, 2016). The results of this research point to the fact that such limits may result in the absence of digital opportunities, especially in the aspects that may be considered peripheral by managers of the money bestowed to such causes. Such a state of affairs alerts us to questions of who gains or loses when these gaps are around, and whether or not user groups are similarly situated so that they can be so impacted by these gaps.

These difficulties are further compounded by lack of training, which means that librarians are expected to work with difficult digital systems. Preceding studies bear this in view with Choi & Rasmussen (2009) urging continued hands on education for librarians assuming digital curation positions. The absence of the sort of training offered at UMSU points to the importance of a more systematic approach to professionalization, one that is far more tied to the pragmatic realities of work as a digital librarian.

These key challenges mean that there is need for a more comprehensive approach to managing digital transformation in academic libraries (Benavides et al., 2020). Technology/learning innovations therefore must happen hand in hand with well-coordinated systems that will provide understandable training, sufficient funds and tools that are designed with feedback from the users at heart. The research evidence implies that, in the absence of such support, improvement initiatives that guide Scale-UP's digital transformation may be compromised by the technology tools and systems embraced (Hellstrand et al., 2024). Libraries must therefore truss for a more intentional and purposeful approach to digital transformation, one a 'middle-out' approach that addresses the requirements for effective usage by both the librarians and the users, while also bringing value to the library and its operational objective (Cresswell et al., 2021).

Lessons from UMSU Library

It is noteworthy that the approaches used by the UMSU librarians in view of the issues regarding digital curation are instructive of the broader field of library science. These are very ingenious and adaptive ways of working within a fixed system, but such strategies also reveal some serious drawbacks of this approach. Hence, the adoption of a digital management system in place at UMSU is useful to consider not only for the benefits it brings but also for the problems it enshrines, which are characteristic of various difficulties associated with the design and adoption of digital technologies. This indicates that while using these systems, librarians spend a lot of time in problem solving and adjustment hence leading to the observation that what Borgman referred to in his article as 'user-centered' design is often not given much emphasis in the creation of these digital management systems. Closely related to this is the problem of insufficient training, so it becomes even difficult to make proper use of these systems. The issues identified at UMSU are consistent with that body of literature indicating the need for the development of easy to use, adaptable, and user-centered, LLEs and digital tools (Bates, 2015).

CPD, although acknowledged as being necessary and important, is sometimes characterized more by its absence. The fact that UMSU utilises a system of 'on the job' training also implies that the current professional development programs are not entirely in line with the needs of digital curation. This view is shared with the work done by Madrid (2013) where they said

that many of the professional development activities offered in academic libraries do not put development of librarians in a good place to carry out digital curation effectively. Thus, there is an evident need to develop more intensive and practical training programs that are as close as possible to the problems that practicing librarians meet in their practice (Ducas et al., 2020; Omotunde & Alegbeleye, 2021). Another of the external activities undertaken by UMSU librarians is the establishment of collaboration with other publishers and vendors; although the collaboration has been done, it is not free from constraints. The following are some findings of the study as regards restrictive terms of these agreements: A more fundamental weakness, which has been appropriately noticed in the study of licenses for digital resources, is contained in the following observation: In partnership with such sources the idea of possibility of extending the reach of the digital resources must be carefully done in a way that will not compromise the library's ability to disseminate the resources among the community. The above finding is in tandem with the existing literature which suggests that the existing OER resources totally lack flexibility, personalisation and demand more adaptation for application in the current technologically enhanced landscape (Lankes, 2016).

This selective approach to sharing selected digital resources in social networks is a manifestation of a generally observed phenomenon of the use of digital communication tools in academic libraries. However, the lack of consistencies and commitments in these effort shown at UMSU meanings that more systematic and focused methods are required to harness the potential of these tools to the fullest. The literature backs up the notion that appropriate kinds of communication literacy that involve the use of the internet are vital in availing information about technology in the society and ensuring mobile technologies are embraced by the community (Madrid, 2013). UESMS identified that to offer the best prospect of success, outreach needs to be backed up by specific aims and appropriately skilled staff and, without these, even apparently altruistic initiatives may not fully realise their potential.

Some of the steps taken by UMSU librarians are quite valuable for practicing the overall field of digital curation. These strategies however showcase a positive attempt to deal with the various pull factors of digital transformation that have been presented within an organization that is barely funded and struggles often. In this regard, recommendations for academic libraries to improve outcomes of digital curation include user-centered orientations to digital interfaces and tools, more effective professional development, and less prescriptive – and more user-based – resource sharing agreements. Furthermore, better organization of digital communication along with the definition of specific positions and goals is required for increasing the effectiveness of the digital curation practices.

Balancing Convenience with Quality and Relevance

The effect of curation for users, towards which UMSU Library is now heading, is another area of substantial interest because it encompasses the stories of both accomplishments and current challenges in the context of the library's digital endeavours. These results indicate that, for all the users' evident interest in and reliance on division's digital materials, there is a critical set of priorities that remains unaddressed, beyond mere convenience: the actual quality and relevance of the information that is provided.

The positive response received from the users with regard to the ease of getting the digitised resources correlates with the findings of the present study in consonance with the existing literature that it is easier to manage flexible collections or collection that is accessible digitally. However, this convenience comes with the feelings of annoyance from those that get to work with old or rather useless content. From the study it was noted that some of them were not

fully satisfied by the availability and quality of digital resources provided at the library and therefore there was a perceived gap between the user and library.

These issues then prompt questions about how exactly such digital binaries are selected for acquisition and how the associated digital binaries currently in use are managed for updates and relevancy. The literature indicates that while, the process of making smart and right decisions regarding investment on quality and relevant digital resources there it was observed that there is more than the quest to acquire new and effective digital resources. ; to sustain the quality and relevance of such resources it is necessary for their Curriculum Librarians to engage in such activities as updating the same resources. The issues identified at UMSU suggest that unless institutions utilize a succession procedure of digital curation which pass on precision and specificity in an effort to decrease redressing and inspire user satisfaction, the rationale behind utilizing digital assets might be defeated.

The study also indicates that librarians working at UMSU are cognizant of these disparities and are keen to close them even though they are operating under the existing institutions and training. The willingness of the librarians to state that “more budget, better training and more time is needed” shows that there has been a more general understanding of the systemic issues that require changes to meet fully users’ needs (Interview Librarian 11). This points to the findings of the prior literature stating that digital curation should take into consideration the needs and expectation of users (Tenopir, 2012).

Digital curation in the case of users at UMSU Library is a case in point to show how there is always a tension between what is easily available and what is worthy to be consumed. As amazing as Collection and Information are, the advantage over traditional library sourcing has threat/risks when it comes to the quality and relevance of the materials retrieved. Among the recommendations, it becomes possible to identify the necessity of searching for a more thoughtful strategy of acquisitions that would regard digital purchases and the further usage of digital collections as the processes that require more attention being paid to users’ needs and frequent maintenance of the accumulated digital resources. Also highlighted in the research is the fact that the incorporation of user feedback in planning and development of the digital collections to help the library in identifying their user’s needs in order to meet their expectations.

Conclusion

This study identifies several such challenges: Technological developments are proceeding at a very fast pace Librarians have limited budgets with which to work Librarians are not very well trained for their roles in digital curation. All of these challenges are not peculiar to UMSU but symbolic of a system that needs a strategic and systems approach to effective and sustainable digitisation. The study points to the importance of emerging solutions for users, extensive professional development for staff, and more general and more favorable agreements to improve the digital curation. Also, the effects, advantages and disadvantages of digital curation to the Library users at UMSU prove the key theme, convenience in selecting materials has its corresponding quality and relevance. As with other resources, online materials have the advantage of bringing knowledge more directly to the consumer, although the quality and currency of the material determines its value. Therefore, the author of the study indicate that there is need to adopt more strategic management of digital acquisitions, maintenance and feedback to ensure that the collection management meets the changing needs of the academic community. By using this case study, this research adds knowledge to current literature on digital curation in academic libraries about the issues and approaches linked to this developing position. The implications of the study are that realizing the ‘digital curation’

concept to optimum effect entails a more strategic and cohesive approach on the part of academic librarianship which also addresses the interests of the curators themselves and their patrons. This should involve staff with responsibility for digitization, constant training, and, always focusing on user needs in order to develop and maintain both, accessibility and quality and relevance of the final digital collections.

References

- Abdul Rahman, A. R., & Mohezar, S. (2020). Ensuring continued use of a digital library: a qualitative approach. *The Electronic Library*, 38(3), 513-530. <https://doi.org/10.1108/EL-12-2019-0294>
- Ahmed, S., & Sheikh, A. (2021). Information and communication technology skills among library and information science professionals: A predictor of enhanced library services. *Journal of Librarianship and Information Science*, 53(3), 444-453. <https://doi.org/10.1177/0961000620962162>
- AL-Kubaisy, W. J., & Al-Khateeb, B. (2024). The Selection of Best Open Source Integrated Library Management Software: A Review. *Iraqi Journal of Science*, 3993-4007. <https://doi.org/10.24996/ijs.2024.65.7.36>
- Antonizzi, J., & Smuts, H. (2020). The characteristics of digital entrepreneurship and digital transformation: A systematic literature review. In *Responsible Design, Implementation and Use of Information and Communication Technology: 19th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2020, Skukuza, South Africa, April 6–8, 2020, Proceedings, Part I 19* (pp. 239-251). Springer International Publishing. https://doi.org/10.1007/978-3-030-44999-5_20
- Arum, A. P., & Marfianti, Y. (2021). Pengembangan Perpustakaan Digital untuk Mempermudah Akses Informasi. *Information Science and Library*, 2(2), 92. <https://doi.org/10.26623/jisl.v2i2.3290>
- Benavides, L. M. C., Tamayo Arias, J. A., Arango Serna, M. D., Branch Bedoya, J. W., & Burgos, D. (2020). Digital transformation in higher education institutions: A systematic literature review. *Sensors*, 20(11), 3291. ; <https://doi.org/10.3390/s20113291>
- Choi, Y., & Rasmussen, E. (2009). What qualifications and skills are important for digital librarian positions in academic libraries? A job advertisement analysis. *The journal of academic librarianship*, 35(5), 457-467.
- Corrall, S. (2022). The social mission of academic libraries in higher education. *The social future of academic libraries: New perspectives on communities, networks, and engagement*, 109-48. <https://doi.org/10.29085/9781783304738.007>
- Cresswell, K., Sheikh, A., Franklin, B. D., Krasuska, M., The Nguyen, H., Hinder, S., ... & Williams, R. (2021). Interorganizational knowledge sharing to establish digital health learning ecosystems: qualitative evaluation of a national digital health transformation program in England. *Journal of medical Internet research*, 23(8), e23372. <https://doi.org/10.2196/23372>
- Deja, M., Rak, D., & Bell, B. (2021). Digital transformation readiness: perspectives on academia and library outcomes in information literacy. *The Journal of Academic Librarianship*, 47(5), 102403. <https://doi.org/10.1016/j.acalib.2021.102403>

- Dewi, S. (2021). *Persepsi Mahasiswa Program Magister Dalam Pemanfaatan Jurnal Elektronik Pada Perpustakaan Universitas Islam Negeri Sumatera Utara* (Doctoral dissertation, Universitas Islam Negeri Sumatera Utara Medan).
- Diseiye, O., Ukubeyinje, S. E., Oladokun, B. D., & Kakwagh, V. V. (2024). Emerging technologies: Leveraging digital literacy for self-sufficiency among library professionals. *Metaverse Basic and Applied Research*, 3, 59-59. <https://doi.org/10.56294/mr202459>
- Djaenudin, M., & Tupan. (2020). Transformasi peran pustakawan LIPI sebelum dan sesudah Reorganisasi. *Visi Pustaka*, 22(3). <http://karya.brin.go.id/id/eprint/12119/3/6>
Transformasi peran pustakawan LIPI sebelum dan sesudah reorganisasi.pdf
- Ducas, A., Michaud-Ostryk, N., & Speare, M. (2020). Reinventing ourselves: New and emerging roles of academic librarians in Canadian research-intensive universities. <http://hdl.handle.net/1993/36364>
- Firdausi, N., & Mudjito. (2021). Layanan Prima Perpustakaan Digital dalam Meningkatkan Digital Quotient Siswa. *Jurnal Inspirasi Manajemen Pendidikan*, 9(1), 215–228. <https://ejournal.unesa.ac.id/index.php/inspirasi-manajemen-pendidikan/article/view/38706>
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable operations and computers*, 3, 275-285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Hellstrand Tang, U., Smith, F., Karilampi, U. L., & Gremyr, A. (2024). Exploring the Role of Complexity in Health Care Technology Bottom-Up Innovations: Multiple-Case Study Using the Nonadoption, Abandonment, Scale-Up, Spread, and Sustainability Complexity Assessment Tool. *JMIR Human Factors*, 11, e50889. <https://doi.org/10.2196/50889>
- Madrid, M. M. (2013). A study of digital curator competences: A survey of experts. *International Information and Library Review*, 45(3–4), 149–156. <https://doi.org/10.1016/j.iilr.2013.09.001>
- Martzoukou, K. (2021). Academic libraries in COVID-19: a renewed mission for digital literacy. *Library management*, 42(4/5), 266-276. <https://doi.org/10.1108/LM-09-2020-0131>
- Mehta, D., & Wang, X. (2020). COVID-19 and digital library services—a case study of a university library. *Digital library perspectives*, 36(4), 351-363. <https://doi.org/10.1108/DLP-05-2020-0030>
- Mindel, D. (2022). Ethics and digital collections: a selective overview of evolving complexities. *Journal of Documentation*, 78(3), 546-563. <https://doi.org/10.1108/JD-11-2020-0193>
- Omotayo, F. O., & Haliru, A. (2020). Perception of task-technology fit of digital library among undergraduates in selected universities in Nigeria. *The Journal of Academic Librarianship*, 46(1), 102097. <https://doi.org/10.1016/j.acalib.2019.102097>
- Omotunde, O. I., & Alegbeleye, G. O. (2021). Talent management practices and job performance of librarians in university libraries in Nigeria. *The Journal of Academic Librarianship*, 47(2), 102319. <https://doi.org/10.1016/j.acalib.2021.102319>

- Partridge, H., Lee, J., & Munro, C. (2010). Becoming" Librarian 2.0": The skills, knowledge, and attributes required by library and information science professionals in a Web 2.0 world (and beyond). *Library trends*, 59(1), 315-335. <https://doi.org/10.1353/lib.2010.a407820>
- R, M. S. (2018). Transformasi Pustakawan Dan Perpustakaan Di Era Digital. *Al Maktabah : Jurnal Kajian Ilmu Dan Perpustakaan*, Vol 3, No 1 (2018): JUNI, 1–6. <https://ejournal.iainbengkulu.ac.id/index.php/almaktabah/article/view/1222/1034>
- Rahmawati, L. (2012). Peran Pustakawan Perguruan Tinggi Dalam Era Informasi & Digitalisasi. *Jurnal Ta'lim*, 2(3), 105–133. <https://idr.uin-antasari.ac.id/7592/>
- Saibakumo, W. T. (2021). Awareness and acceptance of emerging technologies for extended information service delivery in academic libraries in Nigeria. *Library Philosophy and Practice*, 65(8), 1-11. <https://digitalcommons.unl.edu/libphilprac/5266/>
- Setyorini, E. (2007). Peran Pustakawan di Era Informasi. *Buletin Perpustakaan Universitas Airlangga*, 2(1), 28–32. http://repository.unair.ac.id/58961/1/PERAN_PUSTAKAWAN_DI_ERA_INFORMASI.pdf
- Shahzad, K., Khan, S. A., Iqbal, A., & Shabbir, O. (2023). Effects of motivational and behavioral factors on job productivity: an empirical investigation from academic librarians in Pakistan. *Behavioral Sciences*, 13(1), 41. <https://doi.org/10.3390/bs13010041>
- Soni, N. K., Rani, S., Kumar, A., & Shrivastava, J. (2020). Evaluation of usage of E-resources and INMAS Library Services Through User's Perspective: An analytical study. *DESIDOC Journal of Library & Information Technology*, 40(4). <https://doi.org/10.14429/djlit.40.4.16047>
- Sun, J., & Yuan, B.-Z. (2012). Development and Characteristic of Digital Library as a Library Branch. *IERI Procedia*, 2, 12–17. <https://doi.org/10.1016/j.ieri.2012.06.044>
- Susinta, A., & Senjaya, R. (2022). Manajemen Perpustakaan Digital Di Era Global Pada Perpustakaan Kampus Institut Pemerintahan Dalam Negeri. *UNILIB : Jurnal Perpustakaan*, 13(2), 56–66. <https://doi.org/10.20885/unilib.vol13.iss2.art1>
- Syahfitri, N. (2022). *Strategi Pengembangan Koleksi Jurnal Elektronik (E-Journal) Di Perpustakaan Universitas Muhammadiyah Sumatera Utara (UMSU)* (Doctoral dissertation, Universitas Islam Negeri Sumatera Utara).
- Tyas, Z. W. (2023). Transformasi Peran Pustakawan Dalam Mengelola Koleksi Digital Di Perpustakaan Kabupaten Bandung. *Jurnal Pustaka Budaya*, 10(1), 10–20. <https://doi.org/10.31849/pb.v10i1.11257>
- Tzanova, S. (2020). Changes in academic libraries in the era of Open Science. *Education for Information*, 36(3), 281-299. <https://doi.org/10.3233/EFI-190259>
- Widayanti, Y. (2015). *Pengelolaan Perpustakaan Digital*. <http://repository.radenfatah.ac.id/id/eprint/8513>
- Withorn, T., Messer Kimmitt, J., Caffrey, C., Andora, A., Springfield, C., Ospina, D., ... & Vermeer, W. (2020). Library instruction and information literacy 2019. *Reference Services Review*, 48(4), 601-682. <https://doi.org/10.1108/RSR-08-2020-0057>