



Challenges in Digital Humanities Librarianship Implementations: A systematic literature review

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Abstract

Digital Humanities (DH) librarianship involves supporting researchers, students, and faculty in using digital tools to engage cultural artifacts and digital resources. This specialized role within librarianship comes with some of the challenges. A systematic literature review has been done to recognize the challenges that come along the way, such as Collaboration and Evaluation of Digital Scholarship. 50 articles have been identified, as a result, only 28% out of 50 papers, or 14 publications, were ultimately chosen as being appropriate for the analysis step. This literature review's objective is to identify the challenges encountered by implementing Digital Humanities Librarianship.

Keywords: Digital humanities, Librarianship, challenges, digital humanities implementations, librarian role

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1.0 Introduction

The field of Digital Humanities (DH) combines traditional humanities disciplines with digital tools and methodologies to study, analyze, and interpret various cultural artifacts and phenomena. While Digital Humanities offers numerous opportunities for research, collaboration, and innovation, it also presents several challenges in its implementation. Meanwhile, Digital humanities (DH) in libraries is an interdisciplinary field that involves the use of digital tools, methods, and technologies to conduct research, analyze, and present findings in the humanities disciplines. Libraries play a crucial role in supporting digital humanities initiatives by providing access to resources, facilitating workshops (Milteneff, 2023), and offering expertise in information management and digital technologies.

Digital humanities are still developing, and the library is evolving right along with it, continuing to offer collections, research support, and instruction in both traditional ways and new ones as this "dynamic dialogue" expands (Lee, C. 2016). The integration of digital humanities in libraries facilitates the creation of digital archives and repositories. Libraries have a responsibility to preserve and curate digital humanities projects and resources. Digital materials are susceptible to obsolescence, degradation, and loss, so libraries must invest in preservation strategies to ensure that valuable digital scholarship remains accessible to future generations (Shimray, S. R. 2018). Libraries play a vital role in supporting digital humanities by providing access to resources, preserving digital materials, fostering collaboration, and promoting innovation (Milteneff, 2023). To remain relevant in the modern research landscape, libraries must adapt to the evolving needs of scholars in the humanities and provide the necessary infrastructure and expertise for digital scholarship.

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We aim to review recent literature from 2019 to 2023 on the challenges in the implementation of digital humanities in libraries. All English papers that are published in four electronic journal databases, which are Emeralds, Web of Science, Scopus, and Google Scholar are being searched. By conducting the SLR, it is hoped that this paper will assist researchers in having a better understanding of the challenges faced by librarians in implementing Digital Humanities. The integration of digital humanities has led to the changes in librarian roles to this day. Previous studies expanded the understanding of how librarians contributed to this field, and how they adapt to the changing technologies and engage with preservation strategies, while this recent study may delve deeper into identifying the challenges librarians face. Therefore, this study intends to fill a knowledge gap by examining contemporary literature on challenges faced during the implementation of digital humanities librarianship in libraries.

This review paper will be discussed as follows: methodology review, describing results, and discussion. Lastly, the review will end by emphasizing the research contribution as well as making recommendations for future research. This review study is based on a systematic literature review technique for information systems research proposed by Okoli and Schabram (2010) because their systematic approach allowed for a rigorous and structured review, enhancing the reliability and validity of the findings. The objective of the systematic literature review (SLR) is to identify and summarize the current evidence regarding challenges in implementing Digital Humanities in library fields. SLR procedures are divided into three stages: planning, execution, and reporting

2.0 Materials and Methods

a) Procedure 1: Planning

This step consists of three key activities: defining the need for a review, designing a review methodology, and developing a research question. To begin the research, a research question based on the context of the Digital Humanities Librarianship implementations has been established. The resulting formulated question is as follows: "What are the challenges in implementing Digital Humanities in Libraries?"

b) Procedure 2: Execution

At the execution stage, Boolean "AND" and "OR" have been used to develop the search strategy formulation. The goal of the search phase was to find studies on digital humanities librarianship and the challenges, which were listed in Table I.

Table I. Search String

Search String
("digital humanities") AND ("librarianship") AND ("challenges" OR "problems") AND ("Academic Libraries" OR "Higher Institutions")

Then, the next step is to search and retrieve from the four electronic journals, which are Emeralds, Scopus, Google Scholars, and Web of Science. The procedure applies to any publications from 2019 to 2023. All the papers must be written in English and focus on Digital Humanities and Library. Any paper that does not meet the above inclusion criteria will be rejected.

The selected papers were then subjected to a quality assessment (QA) screening to determine their reliability, relevance, benefits, and completeness. By using the scoring technique, each answer for each question in Table II will be given a score as follows: "Yes" = 1, "No" = 0, and "Partially" = 0.5. As previously described, this review paper is to examine Digital Humanities and library roles. To achieve this aim, four research questions were constructed as shown in Table II.

Table II. Quality Assessment Criteria

ID	Research Questions	
	Answer	Yes/No/Partially
RQ1	Is it possible to retrieve the whole version of the publication?	Yes/No
RQ2	Is the study able to describe the challenges in implementing Digital humanities librarianship?	Yes/No/Partially
RQ3	Does the published study on the librarian roles?	Yes/No
RQ4	Is the academic library or higher institutions involved in the study context?	Yes/No/Partially

c) Procedure 3: Reporting

This section will be discussed in the next section, i.e., III Findings and Discussion.

3.0 Findings and Discussion

A) Reporting

By referring to the search string as presented in Table I, 50 articles have been identified. Only related articles are selected. Those articles which are not related or duplicated are excluded from the next screening process. Articles that meet the inclusion criteria are selected screened and evaluated based on the QA constructed, as referred to in Table II. As a result, only 28% out of 50 papers, or 14 publications, were ultimately chosen as being appropriate for the analysis step. The 14 chosen publications were studied to synthesize

data by applying exclusion criteria, and then analyzing the in-depth summaries and contents of each article, as shown in Table IV. Table III provides an overview of the score of the 14 articles (A1-A14) that were chosen for this study based on the QA (Table II).

Table III. QA Criteria Score

Articles	Q1	Q2	Q3	Q4	Total Marks
A1	1	1	1	1	4
A2	1	1	1	1	4
A3	1	1	1	1	4
A4	1	1	0	1	3
A5	1	1	0	1	3
A6	1	1	0	1	3
A7	1	1	0	0	2
A8	1	1	1	1	4
A9	1	1	1	1	4
A10	1	1	0	1	3
A11	1	1	1	1	4
A12	1	1	1	1	4
A13	1	1	0	0	2
A14	1	1	0	0	2

The four (4) filtering categories, extremely poor, poor, good, and very good are listed as the quality indicators of assessment for each of these chosen publications in Table IV. The QA results were used to calculate the quality scores for these publications. In conclusion, the results demonstrate that all the chosen papers were rated at an acceptable quality rate. 11 out of 14 papers or 78.6% have been rated as very good quality, and only 3 papers were rated as good quality (21.4%).

Table IV. QA Criteria Categories

Quality Indicator	Very Poor (<1)	Poor (1-<2)	Good (2-<3)	Very Good (3-4)	Total
Number of Articles	0	0	3	11	14
Percentage (%)	0	0	21.4	78.6	100

As mentioned earlier, a total of 50 articles were found but only 14 were selected as the final publications. Table V is the summary of the article distribution.

Table V. Summary of Article Distribution Based on Database Journal

Database Journal	No. of Articles Found	Category		
		Book Chapter	Journal	Conference
<i>Emerald Insight</i>	18	-	18	-
<i>SCOPUS</i>	7	1	5	1
<i>Google Scholars</i>	13	-	13	-
<i>Web Of Science</i>	12	-	12	-
Total	50	1	48	1

B) List of Challenges Based on the Articles

Based on Table VI, not many studies have been done to examine and determine the challenges in implementing digital humanities in libraries or higher institutions. Out of 14 articles, only 7 articles concentrate on librarian or library roles. Thus, this article is fulfilling the research gap in recognizing the challenges in implementing digital humanities in libraries.

Table VI. Challenges

Articles	Authors	Challenges in DHL Implementation
A1	Shannon Lucky and Craig Harkema	Navigating stakeholder expectation and scope creep, a project built using custom or specialized digital tools, continuing preservation, Long-term preservation, not having physical space or digital infrastructure, maintaining access to the materials,
A2	Maria-Luisa Alvite-Diez	The Semantic Web, scientific development in diverse disciplines, and Digital collection often lack of quality
A3	Osagie Oseghale	Lack of continuity in e-resources subscription, inadequate knowledge availability, inadequate training
A4	Jennifer Edmond	Sustainability, Mapping Project structure,
A5	Theophilus Kwamena Ocran and Paulina Afful-Arthur	Lack of clarity of online content, poor formats, storage facilities, long-term access, Inadequate facilities to enhance digital scholarship, inadequate platforms or suite of tools for librarians, poor training skills on the part of librarians,
A6	Sander Muenster	Epistemes, Lack of interdisciplinary,
A7	Lise Jaillant, Katie Aske, Eirini Goudarouli, Natasha Kitcher	The complexity of digital archives, the emergence of new generation technologies, copyright, cross-disciplinary collaborations, gaining permission to digitize from the legal owners

A8	Vaishali Dawar	Radical collaboration, expectations of the changing librarian's skill set, Data curation, and Open content, the staff is not able to cope with these rapid changes,
A9	Mia Stephanie Tignor	Fit within the current academic system, lack of strong relationships,
A10	Simone Lassig	Lack of high-quality digital finding aids,
A11	Ying Zhang, Susan Xue, Zhaohui Xue	Difficulty in cultivating trust and contribution from scholars, constraints of technological and financial resources, and conflicting perspectives among team members
A12	Soohyung Joo	Digital culture, Digital Experience
A13	Chris Houghton and Sarah Ketchley	Data curation, the process of creating OCR text
A14	Megan Senseney, Eleanor Dickson Koehl, and Leanne Nay	Addressing skills gaps, capacity building, scholarly communication, and project logistics, multiplicity of understanding

Summary of Challenges in Implementing Digital Humanities in Library

37 challenges have been identified and discussed in the 14 selected articles. They can be classified into a few categories, such as technological, organizational, individual, and data service quality. There are few challenges that have been mentioned in the relation to technology. One of them is the emergence of new technologies and digital infrastructure (A1, A7, A10 & A11). Continuing and Long-Term Preservation (A1, A3, A5) of Digital Infrastructure (A1, A10, A11) also been mentioned in selected articles. Familiarity with DH methods and technologies is important to support researchers and library users, libraries and librarians should focus their efforts on their area of expertise and the things they do well, namely, preservation, access, and providing spaces for doing research (Shannon, 2019). According to Jaillant (2022), the emergence of new generation technologies also carries a variety of difficulties and challenges to archival frameworks, demanding new capabilities and methods on how best to capture, preserve, contextualize, and present the progressively born-digital and Digitized records. However, the inadequate platforms or suite of tools (A5), and constraints of technological and financial resources (A11) led to the technological shift that also brought new challenges in implementing digital humanities in libraries. Many challenges have been identified under individual categories, the challenges that have been discussed in the selected literature the knowledge availability (A3), inadequate training (A3, A5, A14), lack of interdisciplinary (A6, A14), and changing librarians' skill set (A1, A8, A12, A14) has been discussed. For example, librarians may reject the new roles and skill sets required for a variety of reasons, such as the elderly having trouble using the technology or avoiding additional tasks in their job scope as librarians. Besides that, not being able to cope with rapid changes (A1, A8, A12), addressing skill gaps (A14) and conflicting perspectives among team members (A11) also have been discussed as challenges faced fall under individual categories in implementing digital humanities in the library. Meanwhile, a few challenges, such as Sustainability (A4), lack of clarity online content (A5), Open Content (A8), and Copyright (A7) are also the challenges that have been identified under Data Services Quality. As Jaillant (2019) mentioned, too often, copyright issues happen due to copyrighted text not being available for download if it is for a not-for-profit collaborative of library preservation. Most digital form collections are hard to access due to copyright issues. Therefore, copyright also have been identified as one of the challenges in the implementation of digital humanities in library fields. Table VII is the summary of the list of challenges based on 14 articles.

Table VII. Challenges and Frequency in LR

No.	Challenges	Authors/ Articles	Frequency In Literature	Category
1	Stakeholder Expectation	A1	1	Organizational
2	Specialized Digital Tools	A1, A10	2	Technological
3	Continuing Preservation	A1, A3	2	Technological
4	Long-Term Preservation	A1, A5	2	Technological
5	Physical Space	A1, A14	2	Organizational
6	Digital Infrastructure	A1, A10, A11	3	Technological
7	Maintain Access	A1	1	Technological
8	Semantic Web	A2	1	Technological
9	Diverse Disciplines	A2, A7	2	Individual
10	Often Lack of Quality	A2	1	Technological
11	Lack Of Continuity in Subscription	A3	1	Organizational
12	Inadequate Knowledge Availability	A3	1	Individual
13	Inadequate Training	A3, A5, A14	3	Individual
14	Sustainability	A4	1	Data Service Quality
15	Mapping Project Structure	A4	1	Individual
16	Lack Of Clarity of Online Content	A5	1	Data Service Quality
17	Poor Formats	A5	1	Data Service Quality
18	Storage Facilities	A5, A7	2	Technological
19	Inadequate Platforms or Suite of Tools	A5	1	Technological
20	Lack Of Interdisciplinary	A6, A14	2	Individual
21	The Emergence of New Generation Technologies	A1, A7	2	Technological
22	Copyright	A7	1	Data Service Quality
23	Collaboration	A1, A8, A9	3	Individual
24	Changing Librarians' Skill Set	A1, A8, A12, A14	4	Individual
25	Data Curation	A1, A8, A13	3	Individual
26	Open Content	A8	1	Data Service Quality

27	Not Able to Cope Up with The Rapid Changes	A1, A8, A12	3	Individual
28	Fit Within The Current Academic System	A9	1	Individual
29	Lack Of Strong Relationships	A9	1	Individual
30	Lack Of High-Quality Digital Finding Aids	A10	1	Technological
31	Difficulty Of Cultivating Trust and Contribution from Scholars	A11	1	Individual
32	Constraints Of Technological and Financial Resources	A11	1	Technological
33	Conflicting Perspectives Among Team Members	A11	1	Individual
34	Digital Culture	A12	1	Individual
35	Digital Experience	A12	1	Individual
36	Addressing Skills Gaps	A14	1	Individual
37	Multiplicity Of Understanding	A14	1	Organizational

4.0 Conclusion and Recommendation

This literature review's detached is wanted to recognize the challenges in implementing of Digital Humanities. The aim is to analyze the challenges in implementing digital humanities in academic/higher institutions. However, more research need to be done focusing librarian roles in academic and higher institutions. In 14 articles, 37 difficulties or challenges were discovered, with technology and individuals being the most thoughtful issues. In terms of staying relevant in providing good services to the user, the management should take these issues seriously to offer better services as per demands. Table VII represents the identified factors or challenges in implementing Digital Humanities found in the recent literature, then categorized according to technological, organizational, individual, and data service quality. Most of the challenges of implementing Digital Humanities are the individual (fifteen factors), followed by Technological (eleven factors), Data Services Quality (five factors), and Organizational (four factors). The most remarkable finding from the data was that changes in librarians' skill sets were the most influential elements in implementing Digital Humanities within the library. This is followed by inadequate training, collaborations, and not being able to cope with the rapid changes of the digital era. However, there are some limitations we found in this study, which are lack of study focusing on librarian roles in academic and higher institutions. Therefore, we suggest more research should focus on the challenges in the implementation of Digital Humanities in Academic Library or Higher Institutions in the future. By addressing these challenges through focused research, academic institutions can better navigate the complexities of integrating Digital Humanities into their libraries and broader educational frameworks, ultimately fostering innovation, collaboration, and impactful scholarship.

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