



Policies, Methods, and Challenges in The Developing Digital Collections in University Libraries

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ABSTRACT

This study aims to compile the concept of developing digital collections in university libraries based on previous literature. Using the integrative literature review method to discuss the development of digital collections in college libraries. The discussion is grouped into three categories: collection development policies, methods, and challenges and obstacles encountered in digital collection development. The references are sourced from various research results and relevant e-books that discuss the development of digital collections in the last ten years. The results of this study reveal that policy plays a role in determining the success of digital collection development. Consortiums and coordinated purchasing are appropriate methods for developing digital collections to control and reduce information costs and improve resource sharing between libraries. Despite limited infrastructure and staffing capabilities, copyright issues remain a major obstacle to developing digital collections.

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1. INTRODUCTION

After the COVID-19 pandemic, the digitization process of collections in libraries continues to increase (Ashiq, et al., 2022; Nadi-Ravandi & Batooli, 2022; Rafiq et al., 2021). The rapid development of information and communication technology has changed users' perspectives on libraries (Rafique et al., 2020). Currently, university libraries are faced with new challenges and opportunities in collection governance. Libraries must continue to adapt to the changes that occur (Sulaiman & Laksmi, 2024). Providing digital collections that are adequate and relevant to user needs is one of the most crucial demands faced by libraries in adapting to changes (Yakubu et al., 2022).

Currently, the presence of digital collections in university libraries plays an important role in supporting learning and research activities (Mauro et al., 2015; Shephard & Pookulangara, 2020). However, there are also many libraries that are not able to manage digital collections properly (Mehta & Wang, 2020; Rafiq et al., 2021). In fact, some do not have a clear policy on the governance of digital collections (Rafiq et al., 2018; Rafiq et al., 2021; Wittmann et al., 2019). For this reason, libraries must maximize the existence of digital collections in order to increase user satisfaction (Fernandez et al., 2022; Müngen, 2022). Starting with drafting a digital collection procurement policy, making rules related to collection governance, and understanding user needs and behavior. This literature review aims to explore various aspects of the development of digital collections in university libraries. These aspects include best practices, current trends, and challenges in managing digital collections. The goal is to ensure that digital collectibles can provide optimal benefits to users.

Various studies on the development of digital collections in libraries have been conducted, and they have been researched from various perspectives, such as policies, development methods, and the challenges and obstacles faced. The problems faced in the development of collections in university libraries in Africa, as well as the potential use of the Collection Development Policy (CDP) (Yakubu, 2023). This study identifies several problems, such as decreased budget allocation, increased material procurement costs, increased demand for information, complexity of electronic resources, and legal issues related to copyright, which are the main problems in the development of collections. The study found that a well-planned and well-used written CDP can assist college libraries in Africa in addressing collection development issues and providing collections that meet the standards required for the teaching and research activities of the college community. The key elements of the digital collection development policy and the criteria used in the selection and assessment of developing digital collections. This book also analyzes the latest trends in the development of collections, in the form of collection-sharing and large-scale digitalization, along with the policies that surround them, as well as the challenges faced in the development of digital collections.

Related to collection development methods, Gwynn try to explore development methods in the form of publishing and content creation trends in academic libraries (Gwynn et al., 2019). As a result, it was found that academic libraries expanded their collections through digitization of collections, institutional repositories, open educational resources, and open-access publishing. In addition, this study also discusses the role of the consortium in the development of digital collections in academic libraries. The application of the Collaborative Collection Development (CCD) model in library collection management to overcome cost challenges, and provide wider access to a variety of relevant resources in responsible ways (Levenson & Hess, 2020). The implementation of the CCD project in the library is believed to offer cost savings. In addition, the current trend of library collection development has shifted

from ownership to access, so it is necessary to build a collective collection ownership model by applying CCD. The results of this study reveal that, despite various challenges, the overall application of the CCD concept provides excellent benefits for academic libraries, especially in terms of finance. Meanwhile, Currie and Greene researched the collaborative collection development model applied to two school libraries. This collaborative project is applied to the ebook collection. Procurement is done on request. Users of libraries that collaborate with each other have access to every collection purchased by both parties, regardless of who bought it (Currie & Greene, 2017). This collaborative concept has provided significant cost savings for libraries involved in collaboration. Mindel tries to expand the scope of digital collection development by preserving cultural heritage collections (Mindel, 2020). Collections in physical form owned by public and private entities are digitized to expand their use by users.

On the other hand, Brazier, examines the current issues that have arisen related to the transition to digital collections at the British Library (Brazier, 2016). His research attempts to address the challenges faced in collecting collections, and how to build and shape collections for future generations of researchers. In addition, legal issues and aspects arising from the implementation of digital deposits, large-scale web archiving, digitally born personal archives, and cultural heritage collections, as well as mass digitization were also discussed, which is the focus of the development of the collection. A case study on the development and sharing of digital collections in libraries in developing countries with very wide regional differences (Wang, 2016). In this study, various methods of collection development, such as catalog union, joint construction of superior resources, and consortiums, are analyzed to ensure the success of the collection development project. The study also describes the measures to ensure the success of the digital library project, namely sustainable financial support from the government, scientific mechanisms for cooperation, flexible handling of copyright issues, and integrated standards in resource development and training programs.

This research aims to develop the concept of developing digital collections in university libraries based on the results of previous literature reviews. The concept is compiled by discussing policies, methods, and challenges and obstacles faced in the development of digital collections. By reviewing the latest literature in this field, libraries can identify practical steps and innovative solutions to improve the governance of digital collections. This is important to increase the accessibility and value of the benefits of collections for the college community. The results of this study are expected to provide valuable insights for library managers and professionals, as well as other stakeholders involved in the management and development of digital collections in university libraries. This is important to be done in order to meet the needs of user information to support learning and research activities in higher education. So that they can be competitive in facing global challenges in the dissemination of information and knowledge.

2. METHODS

This study uses the integrative literature review method to discuss the development of digital collections in university libraries. An integrative literature review is a review that discusses emerging concepts based on the view of knowledge and reconceptualizes and expands the theoretical basis of a particular topic (Snyder, 2023; Torraco, 2016). This method is particularly valuable in exploring complex and evolving issues such as digital collection development, where practices and frameworks are continually shaped by technological advancements and institutional demands.

The focus of this study is directed toward three interrelated aspects: first, the policy frameworks that govern the planning and management of digital collections; second, the methods employed in the acquisition, digitization, and curation of digital resources; and third, the challenges that libraries face in implementing and sustaining digital collections, including technological infrastructure, copyright constraints, financial limitations, and user accessibility concerns. The references examined in this review are drawn from scholarly journals, academic books, and reputable research reports published over the past decade (2013–2023), ensuring a timely and contextually relevant analysis. Through this comprehensive synthesis, the study aims to consolidate existing knowledge while identifying critical gaps and future research opportunities in the domain of digital collection development within higher education institutions.

3. RESULTS AND DISCUSSION

The development of digital collections in universities is influenced by the social structure in the academic field of libraries, which requires uniformity in collection policies (Raju & Patnala, 2024; Saarti et al., 2017). The process involves managing and organizing electronic resources owned by digital libraries. This task becomes complex because it requires consideration of various factors, such as the media, audience, selection priorities, and licensing agreements (Rosenstein, 2023; Yakubu, 2023). Electronic resources present unique considerations such as access and delivery media considerations, complex pricing structures, and consultation with library users. Equally important, the practice of developing library collections is inseparable from the challenges of negotiating the terms of licensing agreements and ensuring legitimate access to electronic resources. The following are the results obtained related to the development of digital collections in university libraries summarized from various research results in the last ten years:

3.1. Policy for the Development of Digital Collections in Higher Education Libraries

Clarity, consistency, and continuity are requirements for an effective digital collection development policy. Digital library collection development policies generally have criteria consisting of (i) purpose, (ii) scope/type of content, (iii) priorities, and (iv) selection criteria. The addition of these criteria by outlining the steps of selecting materials, negotiating with publishers, and considering the distribution and storage of content in the library. A well-crafted and systematic policy can be used to guide the procurement of collections that meet the standards needed to support teaching and research activities on campus (Yakubu, 2023).

Collection development policies must be made in writing to provide guidelines and procedures for collaborative collection development and resource sharing between libraries. The policy must meet several conditions, namely:

- (i) Outlining the criteria for selecting materials suitable for the development of cooperative collections,
- (ii) Ensuring that resources are relevant and useful to many libraries,
- (iii) Be able to communicate the goals and priorities of collection development to other libraries,
- (iv) Facilitate coordination and collaboration in obtaining materials; (v) be able to address issues relating to copyright and licensing, by ensuring compliance with applicable law, and
- (v) Facilitate the distribution of resources between libraries (Yakubu, 2023).

The current policy for the development of university digital library collections is substantially more varied with a wider scope (Gregory, 2019; Rosenstein, 2023). Access is not only for the community within the campus; access should be expanded to audiences outside the campus by providing unique local materials and collaborating between organizations in the form of joint collection development. Therefore, the digital collection development policy also contains provisions. Which regulates (i) digitalization requests from users, (ii) digitally born collections, (iii) digitalization activities that support the mission of the institution, and (iv) donations of digital collections by external parties.

The policy was created to ensure the availability of guidelines that serve as common guidelines for customers and information professionals. The policy can be an intermediary between the desire of some customers to have personal materials that are not digitally available and other unique or rare items (Adams & Holland, 2017; Mindel, 2020).

There are several benefits that can be taken from the development of digital collections, namely:

- (i) The availability of a framework for future planning,
- (ii) Supporting the development of cooperative collections, and sharing of resources,
- (iii) Offering protection for decision-making in the development of collections, and
- (iv) Serving as a guideline in the selection of digital materials.

The policy is made in writing, by outlining the principles and guidelines for selecting, procuring, evaluating, preserving, and managing digital materials for library collections. The goal is to ensure that the development of digital collections is carried out on a consistent basis in accordance with the goals that have been set, and in line with the library's mission, as well as to prevent the influence of personal interests in the acquisition of library materials (Yakubu, 2023).

In general, there are five policy themes/focuses that are taken into consideration in making policies, namely: (i) identification of media types, (ii) audiences, (iii) selection priorities, (iv) considerations between organizations, and (v) technical considerations, such as copyright, privacy, accessibility, compatibility, and usability (Rosenstein, 2023; Yakubu, 2023).

Collection development policies vary for each type of electronic resource. E-books, for example, generally have a unique collection development policy. Several points that need to be considered in developing e-book collections are: (i) policy scope, (ii) personnel who make the selection, (iii) selection criteria, (iv) duplicate checks, (v) access and maintenance of collections, (vi) methods or methods of downloading collections, and (vii) means to read collections (Moore, 2015).

In addition, the policy must also contain provisions for the development of digital collections through digitization projects based on the source of collection acquisition. Mindel termed it with the digitization of the post-custodial model (Mindel, 2020). Digitalization is carried out based on:

- (i) Digitalization requests from users,
- (ii) Collections that are born digitally,
- (iii) General digitization activities that support the mission of the institution, and
- (iv) Digital collections that are sourced from donations.

This policy is essential to ensure the availability of guidelines that serve as a common guideline for customers and information professionals, and to mediate between the desire of some customers to have personal materials that are not available digitally and other unique or rare items (Mindel, 2020). This policy can accommodate materials for digitalization that are not physically donated or not owned by the institution that carries out digitalization. The results of the implementation of the post-custodial model are believed to improve access and

preservation, improve positive relationships between communities and institutions, and increase digitalization capacity.

3.2. Methods of Developing Digital Collections in Higher Education Libraries

Currently, the method of developing digital library collections in university libraries continues to develop. A variety of new methods have been practiced in various universities. Based on the results of identification, there are several methods used in the development of digital collections (Gwynn et al., 2019; Wittmann et al., 2019), consisting of:

- (i) Applying open datasets to primary data from a study,
- (ii) Growing collections from the inside out through digitization of collections,
- (iii) Developing institutional repositories,
- (iv) Implementing open educational resources,
- (v) Publishing open access,
- (vi) Collaborative collection development (ccd), and
- (vii) Mass digitization projects to create cohesive digital archives

Collaborative Collection Development (CCD) is the most widely applied model in the development of digital collections in universities these days. CCD is one of the concepts applied to overcome various obstacles in the development of collections. In the development of digital collections, the concept of CCD is applied using several approaches, including (i) consortium purchases, (ii) coordinated purchases, and (iii) co-driven acquisitions (Levenson & Hess, 2020).

Collaboration is carried out not only limited to the development of collections, but up to the stage of using collections together. There are several forms of implementation of the CCD model that can be identified in various universities, including: (i) union catalogue, which is in the form of a combination or union of catalogs from various libraries (Wang, 2016) (ii) joint construction of superior resources in the form of collaboration between libraries to develop superior resources that they have to be used together (Wang, 2016), (iii) joint procurement of databases or consortiums (Wang, 2016), (iv) the development of open datasets, (v) implementing open access to internal collections of universities, such as institutional repositories, open educational resources, and open access publishing (Wittmann et al., 2019), (vi) mass digitization projects to create cohesive digital archives and digital object management of owned collections (Gwynn et al., 2019), (vii) coordinated procurement, applying a management approach in conducting collection selection for multiple libraries in the form of planning to identify material needs and to share resources together (Barstow et al., 2016; Currie & Greene, 2017). Of the number of digital collection procurement models, consortiums and coordinated purchases are considered the strategies that contribute the most to the development of digital collections in university libraries (Barstow et al., 2016; Currie & Greene, 2017).

3.2.1. Consortiums

Library consortia are regarded as a strategic approach that enhances individual libraries' purchasing capacity in the short term, while in the long term, they serve as a means to optimize collaborative collection development and facilitate the systematic sharing of resources (Lo et al., 2017; Salem, 2017). The term 'consortium' originates from the Latin word signifying 'partnership,' 'association,' or 'community.' It serves as a collective designation for a group of institutions collaborating towards the attainment of shared objectives (Castañer &

[Oliveira, 2020](#)). The purchase of consortiums is currently quite large and rampant by various library organizations. Collaboration is conducted based on shared collection needs, location, demographics, and types of libraries. This concept is considered very advantageous for consortium member libraries, especially in budget savings because it can share costs in the procurement of collections ([Wakeling et al., 2018](#)).

The consolidation of library consortia serves multiple strategic purposes, including:

- (i) The regulation and reduction of information acquisition costs,
- (ii) The enhancement of interlibrary resource sharing,
- (iii) The collaborative management of licensing agreements,
- (iv) The negotiation of more favorable pricing for electronic resource subscriptions,
- (v) The provision of training and professional development for end users, librarians, researchers, and academic staff,
- (vi) The facilitation of interactive platforms for communication and cooperation among member institutions,
- (vii) The systematic evaluation of subscription resource utilization, and
- (viii) The identification and acquisition of additional resources deemed essential for future consortia access.

Success in achieving these goals depends on the commitment and ability of each member library, publishers, and the availability of funds. In practice, consortiums are usually economically motivated. In this modern world, most consortiums are formed with the aim of increasing the bargaining position to minimize the cost of accessing electronic databases which tend to be expensive. Several advantages of developing electronic resources through consortiums include: (i) offering broad access to individual libraries with limited budgets, (ii) providing more options for full-text journals or e-books, (iii) offering cost sharing, (iv) consortiums having the opportunity to negotiate with content vendors, (v) increasing the promotion of e-resource collections ([Kumar & Bhanot, 2023](#)).

The many advantages and benefits offered do not mean that the development of e-resource collections through the consortium is inseparable from various challenges. Objectives of library consortia include (i) reducing costs, (ii) improving resource sharing, (iii) collaborating on licensing, (iv) achieving discounts for electronic resources, and (v) enhancing user training. Success among consortium members relies on commitment, communication, and assessing costs and user needs.

3.2.2. Coordinated purchasing

Coordinated Purchasing applies a management approach to selecting collections for multiple libraries. A centralized selection process for multiple libraries can encourage better collaboration in planning to identify material needs and share resources ([Barstow et al., 2016](#); [Currie & Greene, 2017](#)). This concept can be very suitable for use in academic libraries. A college usually has many libraries. In addition to the main library, there are also branch libraries spread across each faculty. Coordination is easier to do compared to collaboration between libraries from different agencies/organizations.

Coordinated purchases can increase effectiveness and efficiency in the development of library collections. The procurement of collections can be planned well, according to the needs of collaborating library users. This can reduce the overlap of collection procurement and increase the uniqueness of collections, which has often been a problem in collection procurement ([Garabedian & Kieft, 2016](#); [Saputra, 2024](#)). Accordingly, it is imperative for librarians to pursue collaborative efforts not only within their own institutions or among

similar entities, but also to establish strategic partnerships across geographical boundaries and diverse organizational types, in order to effectively address the specific disciplinary requirements and interests associated with their collections.

There are several benefits that can be obtained from collection development through a coordinated purchasing system, which consist of (i) lowering costs, (ii) creating efficiency, (iii) reducing redundancy, (iv) increasing the level of collection availability, (v) improving the quality of collections, and (vi) meeting user needs. This collaboration was established to overcome the high duplication and low quality of donated books. The results prove that the process of students buying books has become more effective and efficient in terms of time and cost. So, the aggregation of the distribution of collections is increasing and increasingly heterogeneous.

3.3 Challenges and Obstacles to the Development of Digital Collections in Higher Education Libraries

Changes that continue to occur in the digital environment present their own challenges in the development of digital collections in libraries. According to Brazier, the challenges that often arise are:

- (i) Determining what collections should be collected from the core subjects that a library is a mainstay, choosing new web-based media, and selecting or providing scarce digital heritage materials,
- (ii) Requiring library staff to master new technology-based knowledge and skills,
- (iii) Ensuring the availability of online access to digital collections,
- (iv) Balancing user needs with long-term preservation and collection development decisions for future generations,
- (v) Legal aspects in the development of digital collections, related to copyright issues,
- (vi) Communicating and building an understanding of the importance of the role of libraries in the digital era.

Although policies have been made and determined, in reality, there are still various obstacles to the development of digital collections in universities and other institutions (Wang, 2016). There are several obstacles that often arise including:

- (i) Lack of financial support is a significant barrier to the development of digital collections because it requires investment in the form of infrastructure, resources, and technology,
- (ii) Copyright restriction problems, such as the difficulty of obtaining permits and licenses for digital content,
- (iii) Limited expertise and technical skills possessed by library staff, such as knowledge of digitization processes, metadata management, and digital preservation,
- (iv) Lack of infrastructure and technology, such as limited storage capacity and access to digital collections,
- (v) Fragmented or inconsistent metadata standards and resource descriptions, which can hinder the interoperability and retrieval ability of information to digital collections,
- (vi) Low utilization rates of collections, due to lack of awareness and understanding among user libraries on the benefits and availability of digital collections, and
- (vii) The long-term preservation and sustainability of digital collections that require continuous maintenance, updating, and migration to new technologies. All of these obstacles need to be overcome to ensure success in the development of digital

collections by making strategic planning, adequate funding, capacity building, and collaboration between libraries.

4. CONCLUSION

The policy for the development of digital library collections must be well and systematically prepared by the required standards, and made in writing to provide guidelines and procedures for collaborative collection development, as well as to share resources between libraries. Consortiums are one of the right methods in the development of digital collections to be applied in the short term, especially to control and reduce information costs, as well as increase the distribution of resources between libraries. Meanwhile, coordinated purchases are more appropriately applied to libraries within the same scope or organization. Copyright issues remain a major obstacle to the development of digital collections, in addition to limited infrastructure and budget, as well as low staff capabilities.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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