

The Role of Virtual Library in Learning Environment

Pauline Oghenekaro Adeniran PhD¹ Beneditte Ogochukwu Unuigboje²

1. Tekena Tamuno Library, Redeemer's University, P.M.B.230, Ede, Osun State, Nigerian
2. Tekena Tamuno Library, Redeemer's University, P.M.B.230, Ede, Osun State, Nigerian

Abstract

The library environment has witnessed a dramatic change in the last several decades. The change is as a result of the introduction of information communication technology (ICT) in teaching and learning in the academic arena. Most academic libraries now move from the conventional way of information handling and delivery to more sophisticated methods where 'access' is more emphasized. As a result, virtual libraries have become increasingly important in the learning environment. Virtual/digital libraries play important role in providing access to a wide range of information resources across the globe. Beyond what the traditional libraries can offer, virtual libraries break the barrier of time and location to facilitate sharing of scholarly information for academic excellence, a feat which was practically impossible in the past. The introduction of virtual library provides opportunities for information users to access information across the globe without restriction. This paper looked at the role of virtual library in mediating between the individual information needs of the members of the academic community and the vast amount of globally available content. The paper concluded by stressing some current trends and open research issues in Digital Library technology.

Keywords: Virtual library, Impact of Virtual libraries, Learning environment, Academic performance

INTRODUCTION

The terms "digital library" and "virtual library" refer to "a library that provides access to a collection of distributed information in electronic format through pointers provided locally or a collection of digital objects housed in the same place, virtual or physical" (Kaliyammal, 2004). A virtual or digital library is a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers. The digital content may be stored locally, or accessed remotely via computer networks. A digital library is a type of information retrieval system - Best Practices and Modeling Foundations. Digital Library researchers and practitioners produced a Digital Library Reference Model which defines a digital library as: A potentially virtual organization, that comprehensively collects, manages and preserves for the long depth of time rich digital content, and offers to its targeted user communities specialized functionality on that content, of defined quality and according to comprehensive codified policies.

Virtual Library as "an information system targeted towards a specific community, where content from different sources is collected and managed, content is structured and enriched with metadata, and a set of services is offered that makes the content available to a user community via a communication network, typically the Internet" (Kaliyammal, 2004). The concept of Virtual Library is that any person who has a computer and connection to the Library networks can access not only the resources of that library but also variety of information available through National and International Networks like Internet and Intranet without being physically present in library. Digital Libraries are the electronic counterparts of traditional paper libraries, where the digital medium opens new opportunities, especially in the area of improved access support, increased content availability, powerful content interlinking, and reduced costs, but also imposes new challenges like long-term preservation in the context of fast changing storage technologies. Further important challenges are issues of copyright and digital rights management and the cost of digitization for not digitally-born content.

Multimedia Libraries are Digital Libraries, where the managed content is not restricted to the usually mainly textual documents. Such libraries contain, next to the "textual" contents, media types like music, videos, images, maps, and mixtures of different content types (multimedia objects) as they are, for example used in e-Learning or in the documentation of history. Multimedia libraries may also contain content types that were not supported in traditional libraries at all like 3D objects, executable software (e.g. computer games) or callable services. One of the main challenges for a multimedia library is to provide effective access to these types of context (based on adequate indexing) and to provide support for the "real-time" integration of different content types. Some challenges of multimedia libraries are closely related to those of museums and archives that make multimedia representations of their artifacts available online

The paper shall discuss the role of virtual libraries in mediating between the individual information needs of the members of academic community and the vast amount of globally available content. In this context the services provided by a library play a central role. Therefore, search services and further value adding services within a Digital Library are discussed next in the article with a focus on the special requirements of multimedia content. The article closes with some current trends and open research issues in Digital Library technology.

Impact of Digital Libraries on information users

A digital library mediates between the information needs of its user community and the globally available content. Contributions in four task areas are essential for supporting this mediation.

- *Content pre selection:* The library selects high-quality content potentially relevant for the members of its user community;
- *Content structuring:* The library structures the content according to the predominant domain understanding of its user community;
- *Content enrichment:* The library enriches content objects with descriptive and value-adding metadata provided by domain experts, librarians, and community members;
- *Library services:* Support for content retrieval, access, annotation, etc. enable the identification of relevant material and facilitate access of content and its use by community members as a group or as individuals.

These contributions allow a digital library to reduce the gap that exists between the wide variety and large amount of globally available content and specific information needs of individuals and small group within its community. Ideally, many of these contributions should be achieved without or with little human inference. However, for technological reasons, as well as for reasons of quality control and trust, human involvement and especially involvement of representatives from the library now and in the future will be essential for these tasks.

Erich (2004) emphasized that the quality of academic library collection will be enhanced; staff and students will have access to databases for teaching and research with the introduction of virtual libraries in academic environment. Virtual libraries will improve the quality of teaching and research in higher institutions through the provision of current electronic books, journals and other library resources (Adeniran, 2014). Ogunsola (2011) affirmed that the application of IT to library services has brought about tremendous improvement and makes possible more services⁵. Its relevance to library functions and services. The changing trend in the digital age has made it imperative for libraries now to develop ways on how to manage access to materials available in electronic format and effectively share them, since the digital age has provided a platform on which they have to share their resources in the 21st century (Nwalo, 2000). ICTs have offered libraries more efficient ways of acquiring, organizing, storing and disseminating or transmitting, information. New information technologies which are integral components in the shaping of information systems have the potential of changing the status quo of libraries (Mosuro, 2000). In recent times, the traditional methods of providing information services is changing, and also, the performance of library tasks is undergoing a major change process Jimba (2000) observed that libraries are being transformed from book centre to information centre institutions, and emphasis is shifting from book collection and storage to access and provision of electronic information services

Virtual libraries enhance scholarship, research and lifelong learning through the establishment of permanent access to shared virtual collections (Okebukola (2002). Ya'u (2003) noted that the virtual library has the opportunity to address the paucity of teaching and research materials in the libraries of higher institutions as well as giving room for sharing research outputs with global community among the institutions and the local researchers. The information technologies found in libraries today is a combination of computers, storage media and telecommunications. In other words, computers provide the processing, storage and retrieval capabilities of information in the library, while telecommunication provides the capabilities for the transfer and or communication of data (information) from one workstation to another in the library (Ajibero, 2002). According to Ramesh (n.d), the introduction of IT in libraries is changing the face of libraries because of the advent of the Internet. In Gbaje (2007), NUC enumerated the functions of virtual libraries to include:

- to improve the quality of teaching and research in institutions of higher learning in Nigeria through the provision of current books, journals and other library resources;
- to enhance access of academic libraries serving the education community in Nigeria to global library and information resources;
- to enhance scholarship, research and lifelong learning through the establishment of permanent access to shared digital archival collections;
- to provide guidance for academic libraries on applying appropriate technologies used in the production of digital library resources; and
- to advance the use and usability of globally distributed, networked information resources

Arising from global trend, librarians are now poised for training and re-training to enable them be part of the bridging tools in the digital-divide. They are ready to play more affective role using the Internet, e-mail, CD-ROM, and other peripheral facilities as tools for generating, obtaining, processing, storing, retrieving as well as disseminating information services in libraries. One of the major characteristics of the information age, today is the growth of information services of various kinds in archives, libraries, museums and formal educational institutions which accounted for the bulk of what could be classified as information (Oduwole, Oyewumi &

Oyesiku, 2002). The growth in technological development in the field of computer networks is boosting the functions and operations of Nigerian libraries. As a result, the process of retrieval and dissemination of information services in libraries has witnessed a rapid growth because of the computer networks (Rahman, 2002). Hence, libraries can successfully manage the exponential growth of information with the help of this technology. IT has now made libraries more effective and efficient in the performance of various tasks in relation to acquisitions, cataloguing and classification, indexing, serials control, processing, circulation and so on.

Riccio (2001) submitted that virtual libraries make electronic books and journals accessible to an unlimited audience at the same time, anytime and anywhere. The virtual library provides access to databases, electronic journals, alerting services, online reference tools and quality-selected web resources that improves the quality of teaching and research. A virtual library is a strategy for effective learning and it provides access to the electronic super highway. In addition to search services, a Digital Library also supports other classes of services. This mainly includes community services, annotation services, and administrative services. Due to the several advantages of e-resources such as timeliness, search facilities, remote access and up datedness, they become more indispensable after the arrival of the Internet in the academic environment. The provisions virtual/digital libraries in tertiary institutions of learning are new ways of gaining quick access to a great number of research information and dissemination globally. As a result of the potential benefits offered by virtual libraries, they have been embraced by universities. Students, would benefit from the digital collections if they are well harnessed as they will provide excellent opportunities to access scholarly information which are beyond the reach of libraries due to geographical barrier and limited finances.

Services for supporting the academic community beyond search are, for example, services that foster community formation and services for supporting the communication and collaboration between community members (chat, discussion forum etc.). Collaborative filtering services are an option to combine community and search services: Ratings provided by community members and similarities between communities members are used to provide recommendations to community members about relevant information objects in the Digital Library. Other community services are services that involve community members into the content collection process by enabling them to include their own content into the Digital Library collection or to build their own private libraries.

In a great dimension, virtual libraries provide access to tools such as databases, electronic journals, alerting services, online reference tools, and quality-selected web resources that improve the quality of teaching and research¹⁷. In this way, users will profit from the experiences and expertise of the global community. In addition to the services provided to the user, digital libraries also support administrative processes for the management of the digital library. Main goal of this process is to keep the collection focused and attractive for the targeted community. Collection management includes deciding upon which new content to acquire and possibly also when to delete content from the collection (based on an adequate collection strategy), and restructuring the collection, when this is implied by changes in the underlying domain (e.g. new trends). Furthermore, necessary administrative digital library processes include the management of users and user groups, digitization of content, creation and acquisition of metadata records, just to name the most prominent. Also, a careful handling of access rights, copyrights, and intellectual property rights contributes to the “trust” of the community members into the services of a digital library.

Many digital libraries do not only have to provide efficient and effective access to their content, but also have to take actions for achieving long-term accessibility for content objects. Special services and organizational strategies are required to achieve long term preservation in digital libraries due to the fast changes in storage technology. Adequate methods for ensuring long-term preservation in the digital age are still subject of research

Conclusion

In the 21st century, digital libraries have a tremendous positive impact on education, as sharing of learning resources increases, supporting not only distance education but also on-campus and independent discovery-based learning. High-quality resources of all types will be contributed by diverse sets of authors directly into virtual/digital libraries, including through open archives, leading to a vast increase in use of rich multimedia for quality academic work. Digital libraries provide an effective means to distribute learning resources to students and other users. Virtual/digital libraries in universities play a prominent role in facilitating access to required information by the users in an easy and quick manner. Digital resources, in reality have become essential in the academic environment. They serve as motivating factor to students as they provide them opportunity to transmit, acquire or download process and disseminate information on any subject of interest. It becomes possible for users to access new tools and applications for information seeking and retrieval through the virtual library. Digital documents have become invaluable research tools that complement the print collection in the traditional library setting. These resources serve as veritable sources of information which students could tap into to aid their class assignments, write research and term papers, and search for information on their subject areas and so

on.

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