

Institutionalising the Virtual Library of the Historically Disadvantaged Universities of South Africa

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ABSTRACT One is now living in the digital era in which digits have had a considerable impact, more especially on how people communicate. As a result of the digital revolution social media was born which severely changed people's patterns of communication and doing things at all levels across the sphere, with the library being at the centre of this change. Digital technology, the storehouse and supplier of social media, has impacted all walks of modern life, and the library being amongst other things. This paper focuses on the different benefits of the libraries being virtual in the institutions of higher learning for both students and academics. The challenges encountered by the university community due to the fact that the libraries are offline are, for example, lack of proper knowledge on how to use information retrieval skills, insufficient user education, lack of computer knowledge and Information Communication Technology (ICT) in accessing information in the library. Therefore, this paper explores the notion of virtual libraries being a reality for the historically disadvantaged universities in South African. This study will employ a literature review method with the aim of exploring the use of technology to enhance the library services provided to the users. Various documents will be used to classify, investigate, and incorporate (analyse, synthesise and compare) the findings of other researchers to come out with the sustained paper/argument. The following phrases/catchwords will be selected /identified, that is, what virtual library entails, tools used to disseminate information to users electronically, activities conducted in virtual libraries, marketing the virtual library resources challenges encountered with virtual libraries.

INTRODUCTION

New, virtual libraries have been known by several names, like electronic library, digital library, hybrid library, library without walls, or virtual library. Virtual libraries, digital libraries and electronic libraries are not the same. Virtual library is one type of a digital library, which provides a portal to information that is available digitally from anywhere throughout the world (Chisita and Chizoma 2021; Vassilakaki and Moniarou-Papaconstantinou 2021). All virtual libraries must, by their very nature, be electronic, but not all electronic libraries are necessarily virtual. A library with all holdings on CD-ROMs accessed from stand-alone workstations would be electronic, but it certainly would not be classed as a virtual library (Sarkar 2022; Kumar and Kumar 2019).

A virtual library is being introduced to the library system worldwide. The industrialised world is creating virtual libraries because of the high value placed on the availability of information. The increasing acceptance of virtual libraries

might be due to the diverse information that they contain, the options for what they can include are virtually endless, as well as becoming more and more boundless as technology advances (Okocha 2022; Fabunmi 2009).

As a result of technology, electronic library resources are designed in such a way that they are user friendly, with "multitasking information accessible, simple interface design, quality assurance service, and ease of communication via a social network have been developed and implemented" to meet the needs of the virtual library users (Kato et al. 2021).

Objectives

The main objective of this paper is to discuss the institutionalisation of virtual libraries in the historically disadvantaged universities. The other objectives are as follows:

1. To examine the virtual libraries in the historically disadvantaged universities.
2. To know the benefits pertaining to virtual libraries.

3. To determine the challenges of virtual libraries in the universities.

What Do Virtual Libraries Entail?

A virtual library entails a paperless library in which students and academics will be able to use the sources without space barriers, or time limit. Others refer to virtual libraries as a library without walls in which users need no librarian to assist them in accessing and using the resources. A virtual library refers to the library, in which its collection in whole or part of it is made available electronically (Perdana and Prasojo 2019; Rosenberg 2005). It is a library without walls in which the most important resources are, for example, LibGuides, Blackboard, Moodle, databases that the users will be able to access and use without the help of librarians and the library. "A library with little or no physical part of books, periodicals, reading space or support staff but one that disseminates selective information directly to distributed library customers, usually electronically" (Powell 2000). According to Chen and Song (2020), a virtual library provides resources remotely in a variety of formats like online or CD-ROM-based access to a variety of national and international content (for example, curricula, learning materials, books, journals, magazines, newspapers), services traditionally offered by libraries and other information sources. Virtual libraries enable accessibility to a wide range of recent publications (Mpendulo 2023).

"A virtual library is an online collection of digital resources that provides access to a wide range of digital materials such as e-books, journals, databases, audio and video recordings, and other digital media (n.d)". Users are able to access information by means of their laptops and phones, while in their residence, rooms, at the cafeteria or anywhere at any time, and they can write an email requesting for information/articles from the library and the librarian can link e-resources on platforms such as Moodle, Blackboard and LibGuides. Furthermore, library users can also be taken on virtual tours of the library via digital screens and can also attend virtual workshops and training (Kumar 2002).

University Virtual Libraries Internationally

In China studies indicate that most of the "42 double first-class universities are consid-

ered among the top 500 universities in the world" and these are academic libraries that are supplied with IT infrastructure and technologies, they are financially supported, with librarians who can understand library tool and technologies and develop services that depend on technology to involve their communities virtually (Ministry of Education of the People's Republic of China 2017). According to Adamou and Ntoka (2017), the library users of Pantheon University's library and TIE of Athens in Greece were satisfied with the digital collections but not happy about the technical infrastructure used to access e-resources. The American Library Association with its 63,000 members in the USA, Canada and in more than 115 countries is on the international level the strongest supplier of electronic learning tools for librarians and information specialists (Ball 2003).

Institutional Virtual Libraries in the Regional Context

"Over the last five years, enormous progress has been made in ensuring that staff and students in universities in Africa can access the growing quantities of information resources now produced in electronic format. Support has been provided in setting up the necessary networked infrastructure and providing the requisite hardware and software. Negotiation with publishers has resulted in journals and databases being made available free or at heavily discounted prices through programmes like AGORA, eIFL, HINARI and PERI, and much training has taken place" (Rosenberg 2005:2).

Poor funding has been noted in most of the African university libraries in the developing countries, which is playing a big role in delay in the development of virtual libraries. Most of the libraries in Africa solely depend on the government for funding and as a result the University of Zimbabwe, the University of Zambia as well as the University of Botswana experienced budget cuts, which resulted in their dependence on donations and gifts (Okocha 2022). Moreover, taking into consideration the fact that for a virtual library to be built, it needs proper IT infrastructure. Therefore, "Universities in other regions like southern Africa are building IT infrastructure from their own funding, which largely

comes from the government. Universities in countries like South Africa, Botswana, Namibia, Zimbabwe, Lesotho and Swaziland have achieved a certain level of IT development that compares well with Higher Education Institutions (HEIs) outside the continent” (Juma et al. 2014).

According to Nwezeh (2006), a survey that was conducted in Nigeria indicated that the conditions of all the university libraries are in an awful situation in which most of them have no basic ICT infrastructure/facilities that can enable the virtual library services to take place. There are also challenges of lack of proper gadgets and lack of computer literacy as well as lack of awareness of internet facilities. Dimunah (2017) confirmed the state of libraries in Nigeria and indicated that the government funding to universities has declined, which impacted the university libraries too. Poor ICT infrastructure negatively affects the library activities that depend on technology to be delivered (Matyokurehwa 2013).

METHODOLOGY

The method used for this paper is literature review concerning the institutionalisation of virtual libraries in the historically disadvantaged universities in South Africa, their challenges, benefits, and the status of virtual libraries of the universities globally. Various accessible primary sources such as the research journals secondary information sources for example books, journal articles, conference proceedings, official reports, Internet, websites and any other research results were employed for data collection, which were used to analyse, synthesise and compare the findings of different researchers to come out with the sustained paper/argument. The researcher undertook this study to find out if there is a research gap, which was not answered in preceding studies. The researcher employed various search strategies that will enable new information to be uncovered.

Status of Virtual Libraries of the Historically Disadvantaged Universities in South Africa

South Africa has a dual economic development in which one part of the country is being developed and the other part still being in the developing country (Timmis and Muhuro 2019).

According to Reddy (2001:140), in South Africa, “the legacy of apartheid resulted in profound inequities and distortions of the South African Higher Education system with educational resources poorly distributed among non-white institutions”.

“Historically disadvantaged institutions or universities” is a familiar expression in South Africa, which is used to refer to a group of universities that were established during the apartheid regime to serve Africans and other non-white populations. These include universities like Fort Hare, Limpopo, Venda, Walter Sisulu, Western Cape and Zululand, and Mangosuthu University of Technology. A Report of the Ministerial Committee for the Review of the Funding of Universities in October 2013, identified 7 contact universities as Historically Disadvantaged Institutions (HDIs) and as a result, the Historically Disadvantaged Institutions Development Grant was established, which aimed at developing and sustaining the financial condition of these universities and to redress the imbalance created by the apartheid regime (Higher Education and Training 2015).

These imbalances are still extremely rooted in the higher education system of South Africa. Nonetheless, the democratic government has made significant effort to redress these inequalities through various policy instruments post-1994. The Department of Higher Education and Training has recently established the historically disadvantaged institutions development grants ring-fenced for competition between similar types of institutions. This grant deems disadvantaged students to be African and Coloured students who are South African citizens. It was also advocated that Department of Higher Education and Training [DHET] and higher education institutions (HEI) related stakeholders should increase their investments, development and the implementation of teaching, learning and research activities as a way to enhance technical change so as to elevate the performance of the universities, which played a crucial role in the development of these universities (Temoso and Myeki 2023).

In nearly all the universities their libraries are hybrid where both print and electronic sources are held to provide information for the use in teaching and learning by learners and academ-

ics. Information overload or explosion, which was caused by the advent of information communication technology (ICT) in the library, changed how information was collected, stored, preserved and disseminated, and it is difficult to access the right information, which is relevant, current and timely. Thus, in this regard virtual libraries play a crucial role to handle this situation (Sarkar 2022).

According to Juma et al. (2014), African countries are in the third world, which are the developing countries and poor as compared to the first world countries that are rich, and as a result information resources in most African institutions of higher education do not match that of institutions of higher education in the first countries, although most of the African governments and the institutions of higher education in Africa strive to get resources even though they are assisted with resources.

Studies undertaken by Nyahodza and Higgs (2017:39) indicate that “the UWC Library has emerged as a competent agent of democracy, and most of the users perceive the e-services being offered as useful and meeting their needs”. According to Gumede (2021), the availability of information electronically in the Durban University of Technology enables both students and academics to retrieve information from any of the platforms utilised and that can access information from both the subject specific databases and multidisciplinary databases that the university is subscribed to. There is also the ICT infrastructure, internet access as well as information-related skills programmes to facilitate the teaching and learning activities in the university community and above that enables the virtual library service rendering to take place.

UNIVEN as one of the historically disadvantaged universities is well-equipped with the ICT required for the smooth running of virtual libraries. Initially the virtual library in the university of Venda was launched in 2011. The outbreak of the COVID-19 pandemic led to a lockdown, which assisted in accelerating and consolidating the use of virtual libraries since both students and staff were compelled to use it because they could not access the library physically. Staff and students are provided with the laptops to enable the teaching and learning activities. Training on how to use the library resources virtually was

compulsory, conducted via the Microsoft Teams platform and nearly all the students were trained. As a result, they were able to access resources from the various databases that the researchers are subscribed to as well, like LibGuides, where the information librarians have developed and published.

Tools Used to Disseminate Information to Users Electronically

Networked computers and the Internet are the ICTs that enable interactive and collaborative learning best, and their full potential as educational tools will remain unrealised if they are used merely for presentation or demonstration.

Activities Conducted in Virtual Libraries

“For university students, arrangements should be made for various kinds of activities, for example, training, teaching a course, teaching through eLearning platforms, and instruction by integrating information literacy in different courses. Information literacy skills should be integrated into the secondary and tertiary schools’ curriculum to underscore the seriousness and utmost relevance of the programme. The application should exceed a simple imaginary distribution to a vigorous realistic hands-on. There is a need for an improved and uninterrupted library user education geared towards authorising students to be adequately habitual with different information sources, format and peculiar characteristics” (Mahwasane 2017: 95).

Mahwasane (2022:24) reiterates that “the use of technology in schools, academic institutions, different types of libraries just a few to mention, should continue to provide their services technologically so that technophobia can be eradicated in the societies, especially in the rural areas.” Even beyond the COVID-19 pandemic, technology should form a part of the school curriculum and be a compulsory learning subject, and tertiary technology should also be a compulsory module done by all students.

Virtual libraries have also facilitated collaboration among researchers. Researchers can share digital resources, collaborate on research projects, and communicate online, even when physically distanced. This collaboration has resulted in the

production of more research output, with researchers from different parts of the world working together (Gourley 2020). It is also understandable that according to Sun (2023), virtual libraries have significantly enhanced research efficiency by providing easy and convenient access to resources, facilitating collaboration, and supporting data management. The virtual library is essential in enhancing research output, visibility, and efficiency.

RESULTS

The results of this study shows that technology is seen dominating in all the sectors bringing along with it changes. There are positive changes as well as negative changes, it is therefore logical that Iakovides et al. (2022: 37) emphasized that “Physical academic libraries are being extended by the expansion of digital data brought about by large databases, the expansion of the web, big data analytics and augmented realities. Therefore, academic libraries must modernise existing support services and resource offerings. Libraries must explore novel ways of improving offerings to stay abreast of innovative technologies and to participate in this virtual revolution.”

Moreover, Kumar et al. (2020: 3) concur that as a result of the employment of technology it has given rise to digital twinning which has much to do with the virtual representation of a particular tangible object or action that functions as its real-time digital equivalent.” The digital twin is a collective representation of internal and external data obtained and shared in a virtual space to cater for the needs of users. Above all technology is there to stay, librarians should embrace the recently emerging technology in the academic libraries.

Apart from the numerous benefits derived from the implementation of technology, there are some hiccups that accompany the introduction of technology in the university libraries. It is not surprising that according to (Jacobs and Wessels 2024:8), it is clear that further research is still needed to examine the employment of the suggested “conceptual framework to determine the varied technological, community and information-sharing methods required, to ensure the application of digital twinning in an academic

library context. Secondly, to rethink the roles of current libraries to remain sustainable, and, lastly, to upskill and reskill librarians for the new metaverse and digital twin era. The value of this research is that it provides a starting point for further discussion and conceptualisation of the practical application of digital twinning relevant to academic libraries in metaversities”

DISCUSSION

Marketing the Virtual Library Resources

“Information literacy skills training should be compulsory for first year students so that they will be able to advance to higher levels and become information literate. Library education should also form a part of the university curriculum. ICT specialists who are focused on library issues are of paramount importance. Libraries should be funded with sufficient funds so that they will be able to attain modern information communication facilities (Mahwasane and Mudzielwana 2016:216).

Advantages of Virtual Libraries

Virtual libraries offer a number of opportunities in developing countries enabling them to take part in universal undertakings to uplift the standard of living of their counties (Owusu-Ansah et al. 2019). Based on various findings concerning the benefits of virtual libraries, the following benefits are identified.

A Whole Class of Students Can Use the E-Resources at the Same Time

The advantages of virtual libraries cannot be overemphasised. The utilisation of technology in virtual libraries permits a big number of clients to be assisted at the same time with print books, and usually about 20 copies per titles are kept as compared to the large numbers of students in the class, which is way too few to suffice for all the students before the due date of the assignment. There is also the loaning period given to each user to use the source and return the book before or on the due date. Some students end up submitting their assignments and projects late due to the large volume of users

who must share a few books among themselves. Some groups of students will hide the book from other students and share the book amongst the group members. There is also the tendency of deliberately tearing the pages of the book, which leads to other students being frustrated. Moreover, books that are heavily burdened can also be snatched out (Bhatia 2023). With electronic sources, they cannot be stolen, or misshelved or ripped, whereas access to resources in the traditional library is restrained to a search in physical shelf locations, while on the other hand that of a virtual library is unrestricted to the shelf and it is electronic. Therefore, the virtual services are not bound solely to librarians to provide information to users. Unlike in the traditional libraries where a number of staff members are required in order to deliver the library services, very few staff members are needed to render the library services in a virtual setting.

Solves Storage Space Problem

With virtual libraries, the size of the library building does not matter nor does the number of shelves in the library building not limit the collection of e-resources. There is no weeding to be done by librarians, which was quite a laborious task. Thanks to virtual libraries, that is a solution to the bad tendency of students who were used to taking their frustration to the libraries by destroying them with fire or burning everything inside the library. Luo and Li (2019) contend that virtual libraries offer a valuable advantage when it comes to data management, and of recent there is the service referred to as research data management, which also simplifies data sharing. The universities are accorded the large storage space, for example, storing their information in the devices like computers, by synchronising the collection as well as storing information in the cloud storage (Perdana and Prasajo 2019).

Transcends Time and Space

Due to the advancement of ICT the availability of information is decentralised and can be accessed from different formats. Urgent information needs can be met promptly without any delay. Moreover, as a result of technology

in the libraries, virtual libraries transcend time and space, that is, the library clients can access the library at any time from anywhere. Clients are able to access and use library resources while off campus, at their residence, in the cafeteria eating food, travelling or from anywhere else. There is no need to panic about the closing hours of the library. The users can access the virtual library from their residence, at the time convenient to them and are able to work at their own pace. A large number of library users are trained virtually as compared to library trainings that were conducted physically. It saves the valuable time of the users because it is no longer necessary to visit the libraries physically and there are no time constraints (Owusu-Ansah et al. 2019).

Ease of Access

Literature by Gavit (2019), Fabunmi (2009), Sarkar (2022) and Perdana and Prasajo (2019) indicates that virtual libraries can be accessed with ease and extensive access, because recently publishers are providing assistance to enable access to their databases. To access information in a virtual library the user just needs to navigate the platforms online and be able to choose information needed, unlike with the traditional library where users need to search the book in the catalogue, which will direct them to the bookshelves where they need to search the book. Moreover, with the advent of information technology as well as web-based services, library users easily access information on their computer devices. Information is made available in various formats for users to use. Virtual libraries, Digital Library Services, Internet Library Services, Electronic Library Services are the expressions utilised interchangeably to refer to Web Based Library Services (Gavit 2019). With the growing numbers of students in the class, students can use electronic books simultaneously, and as a result they need not panic about the loan period and the fine generated by returning the book after the due date.

Cut in Library Budget

Unlike with the traditional libraries where a number of copies need to be purchased for each title, with the virtual libraries one ebook can be

used by the whole class at the same time and there is no need to top up the title due to the fact that the classes are growing larger and larger. E-books are purchased as a bundle, which is cheaper than purchasing a printed copy of a book because there are also discounts offered when purchasing ebooks (Perdana and Prasojo 2019).

Challenges Encountered with Virtual Libraries

Lack of Information Technology Infrastructures

According to Habiba and Chowdhury (2018), apart from the many benefits of e-resources there are a number of challenges in using the e-resources, like lack of computers, network problems, struggle in searching and finding appropriate information. With virtual libraries, the library services are carried out technologically. There is cost attached to ICT and has also given rise to a multitude of legal and ethical issues and challenges in as far as the utilisation of ICT in library services and education is concerned. With virtual libraries, universities are making a thorough breakthrough concerning investment in as far as subscription fees are concerned (Kato et al. 2021). Due to technological developments, an e-library can rapidly become out-of-date, and its data may become inaccessible. There is also the high possibility of the computers being attacked with viruses and destroying all information content stored in the computer (Mungwabi 2023).

Lack of Information Technology Knowledge

There is also a need for academics and students to be well equipped with knowledge concerning “the basic issues (effectiveness, cost, equity and sustainability), as well as the challenges (infrastructure related challenges, capacity building challenges, challenges related to financing the cost of ICT use, to mention but few) surrounding the use of ICT in education and then apply those issues as principles in practice” (Ogbomo 2011:1).

According to Adebayo et al. (2018) and Mahwasane and Mudzielwana (2016), there are challenges such as, lack of proper knowledge on how to use information retrieval skills, insuffi-

cient user education, lack of computer knowledge, and Information Communication Technology (ICT) in accessing information in the library. Still on the lack of information technology, Mahwasane (2019:12918) indicated that “it is important that academic librarians be well acquainted with recent technology. As a result, the library should take responsibility for effectively training the researchers on how to retrieve information making use of the recent technology. The library management should be familiar with the types of services and facilities that are necessary to support the researcher as well as those doing research work”. This entails tools used to disseminate information to users electronically, activities conducted in virtual libraries, marketing the virtual library resources, and the benefits and challenges encountered with virtual libraries. The conclusion will be compiled after a comprehensive discussion.

Lack of Gadgets

Virtual libraries are dependent on gadgets for services provision to take place effectively. These devices include laptops, computers, tablets, modem or dial-up internet, network, Wi-Fi, etc. Moreover, the laptops, tablets and computers can only be used when there is network and internet as virtual library service delivery is dependent on internet and network. Online library service delivery, “teaching and learning as well as any type of virtual working, is expensive and frustrating especially in the rural areas since it depends on a number of things such as internet, gadgets, data, just a few to mention” (Mahwasane 2022:21).

Copyright

Some digitisation can violate the copyright law as the thought content of one author can be freely transferred by another without the former’s acknowledgement. Therefore, one major difficulty to overcome for e-libraries is on how to distribute information without infringing on the intellectual property law. How does an e-library distribute information at will while protecting the copyright of the author? Many book authors do not want to sell their books in digital form. It is happening because the copyrights issue problems. Digital library materials will be very vul-

nerable to copyright infringement problems. If there is no system that protects the digital collection, copyright infringement will be very easy to do, for example, by copying the file. In addition, data in digital form will be easier to expose to plagiarism if not protected (Perdana and Prasojito 2019: 47). According to Okocha (2022), there are barriers faced by librarians when it comes to the protection of digital content to avoid unfair use of intellectual property as well as avoiding copyright infringement.

CONCLUSION

Based on the findings of this study, the virtual libraries of the previously disadvantaged universities in South Africa, there are a number of benefits of a library in the university being virtual, like a whole class of students can use the e-resources at the same time, solve storage space problems, and transcend time and space. On the other hand, there are also the challenges experienced with the university communities, which are associated with the virtual libraries. The findings suggest virtual libraries in the historical universities that are there to stay.

RECOMMENDATIONS

Centred on the findings of the study, the management of the previously disadvantaged universities, especially in South Africa should prioritise in establishing the strong base for Information Communication Technology as a prerequisite for successful virtual library service delivery. Considering the challenges identified in the findings, it is necessary that when digitising the library collection, the print version should not be discarded to avoid frustration in case something goes wrong with the digitised collection. When purchasing new titles, since electronic books are purchased as a bundle, a copy of print should be added for each new title being purchased. As virtual libraries are there to stay, the university management should strongly support the library and extensively improve the library awareness to the university community as a whole. This would assist in encouraging or compelling the students and staff to effectively use the e-resources, for example, the databases that the universities have subscribed to. As the

library is the backbone of its parent body in which it exists, the historically disadvantaged university managements should strongly consider increasing the budget allocation for library facilities and activities so as to nurture active implementation of the virtual library services.

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