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REVAMPING INFORMATION SERVICES THROUGH DIGITAL LIBRARIES AND MOBILE TECHNOLOGICAL BASED LIBRARY SERVICES TO MEET THE NEEDS AND CHALLENGES OF E-LEARNING.

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Abstract

The paper discusses on how information services in academic libraries can be improved through the use of digital library and mobile technological based resources to meet the needs and challenges of e-learning. The library is the heart of the institution and so is meant to play a vital role by providing vital information resources and services in the learning activities as well as support all kinds of learning which includes e-learning. As a result of so much emphasizes on online education and e-learning, libraries in developing countries like Nigeria need to make a paradigm shift in their method of provision of teaching, learning and research materials. This paper explores on the improved information services and resources to be made available to support e-learning. This includes equipping the libraries with the required technology and human expertise, developing relevant library websites, ensuring a meaningful digital literacy programs etc. The paper also highlighted the challenges libraries are facing to actualize this objectives. However, all stakeholders including the librarians and government need to act to surmount these challenges through the provision of adequate informational technologies and needed skills to ensure that the library meet the information needs of e-learners.

Introduction

E-learning is basically the computer and network enabled transfer of skills and knowledge. It involves delivery of content via all electronic media or resources that supports learning and teaching. E-learning includes all courses that are offered fully online, courses that mix face to face and online access to instruction and course materials often called blended learning. It also applies to courses in which instructors post notes and materials for students or provide access to online discussion forum or course topics. Web based learning, computer based learning, virtual classrooms and digital collaborations are also an aspect of e-learning (Dhiman 2010). Manjunath & Patil (2006) state that e-learning should be facilitated in the present day situation in the world as its accessibility makes scheduling easy and allows a greater number of people to attend classes. Learning can happen precisely when needed and travel time is reduced. It is also designed around the learner and eliminates geographical barriers and opens up broader education options.

The growth of e-learning around the world and increasing number of learners who are using this kind of learning have provided opportunities as well as challenges for the libraries and information centers hence the need to improve on their information services. The time has come when incremental advances must give way to more thorough reorganization of technical infrastructure in order for libraries to advance their role in society and within their communities. Libraries should venture into the future balancing opposing tendencies to hold fast to certain well established principles and practices while embracing new channels of innovation (Breeding,2017). Academic libraries should take the advantages of using cutting edge technology to support e-learning by providing access to e-resources and designing set of services for academicians as well as learners. In order to design appropriate services, librarians should know and study the needs of their patrons. The success factor in meeting the needs of the electronic academic community is getting to know online users at the e-learning environment and their needs.

Literature indicates that university libraries in developed countries have always utilized online platforms for meeting the information needs of users, provides user education and information literacy (Fernandez-Rames 2016, Gonzales 2014). In the course of the COVID 19 pandemic, many university libraries across Europe and America continued to render

online services to their users during the lockdown. A good example is the University of Sussex, which did not only offer vital online services but also provided academic materials made freely available by publishers during the lockdown (University of Sussex library 2020). On the contrary, literature did not report any Nigeria university library actively involved in providing online information resources to support the online educational activities of their institutions during the lockdown. A routine check on the website of some libraries indicated nothing going on to support online education.

Universities in Nigeria can play a major role to ensure users utilize online platforms by modifying the library resources and services through the latest technologies available in digital libraries and mobile technologies. Digital libraries are electronic libraries in which large number of geographically distributed users can access the contents of large and diverse repositories of electronic objects. The digital libraries in academic institutions apply suitable communication technologies to provide support for e-learning by providing access to electronic resources and delivering appropriate services. Abbasi and Zardary (2012) state that digital libraries could provide both digitized services and electronic resources via internet to support e-learning. Taha (2007) prepared a study to focus on how the digital library interoperates with the e-learning process within the academic computing environment at the United Arab Emirates University. His view point indicates that digital library could support e-learning courses with bundles of networked e-information services such as development of course related electronic collection, virtual reference help, Current Awareness Services (CAS), Selection Dissemination of Information (SDI), Online document delivery etc. Digital library offer technology base information resources and services which allow learners to access information in the same time provide empowerment for innovative and lifelong learning. It serves as a facilitator to organize and provide knowledge and e-resources to users, besides that it share knowledge and information resources among library users. Librarians should utilize the available resources in digital libraries to provide the information needs of online users to support e-learning.

Emerging trends in library and information science especially in the academic environment requires remote and boundary less access to library services. Mobile technology has been recognized as the single most embraced technology in the world.

These are mobile cellular services that link to the internet and delivers content and instruction. It can enable learners to learn at anytime and anywhere in a form that is culturally prestigious among people in the same group (El-hussein & Cronje 2010). The potentials of mobile device integration with campus wireless network can facilitate the use of e-learning tools and mobile learning to enhance tutor to learner and learner to learner communication, collaboration, reflection and critique. Studies have shown that mobile technologies are useful for accessing study materials faster in efficient ways and also facilitating communication and collaboration by students with their classmates and teachers at lower rate.

The optimization of mobile devices such as smart phones, e-book readers and tablet personal computer in conjunction with the digitization of university libraries currently based mainly on e-books in PDF format, has changed for good the way we perceive study in a university environment. The classic view of a university student spending valuable time in a campus library struggling to borrow the last short loan copies of the books he/she needs tend to be an image of the past. The presence of digital library in conjunction with mobile technology library resources now allow students access to contents and borrow e books anywhere, anytime they wish for. The availability of mobile and wireless devices enables flexibility and customization to individual needs. It also makes learning more interesting, widely available and interactive (Sarrab, Al-shihi and Rehman 2013). The potentials in digital libraries and mobile technological resources can play a major role in providing effective information services that will support the needs and challenges of e-learning practice in tertiary institutions.

Information Resources and Services that can be provided through Digital Libraries and Mobile Technological Resources to support E- Learning.

Today e learning is becoming the perfect tool for empowering knowledge and skill as well as it is alternative means of traditional classroom teaching. Information resources and services libraries should put in place to support learning in an e learning environment includes:

Establishing and Equipping an Electronic Library Building: e- libraries are major steps to provide e learning because an e library will break all barriers of knowledge transfer by storing a big amount of information resources and making these resources accessible and searchable. Learners can make effective search for information in e-libraries with search engines and download into their computers. E-libraries offer access to e-resources which are made accessible to everyone in the e-learning environment (Hassanin 2016).

Expanding Access through Information Sharing.

Digital libraries provide robust interaction between information and users, democratizing the global dissemination of information. The United Nations Educational, Scientific and Cultural Organization (UNESCO) through its "Information for All Programme (IFAP)" provide access to over 25,000 titles that are equipped with online connections to a worldwide network of libraries. The IFAP pledges to harness the new opportunities of the digital age in order to create equal societies through better access to information (Ebbit 2015). Sharing information through a shared technology infrastructure enables libraries to collaborate in resources management and this will led to a dramatically increase in the aggregate volume of content that would be available to patrons solely from their home libraries. Patrons will learn about many resources that they would otherwise not have encountered if their query found only the holdings of the local library.

Equipping the Libraries with enabling Technological Infrastructure.

To meet the demand of online clients, libraries must be equipped with the required technology and human expertise. The technological infrastructure needed to provide effective information services includes a stable electricity and upgrading or installation of a high speed internet connection to support a variety of servers such as web servers, proxy servers for remote access, FTP servers for uploading and downloading large files with appropriate digital library software etc(Adesanya & Idowu 2015). Librarians should also be equipped to match the technology infrastructure. This includes an in-depth analysis of computer skills in library automation, online database searching, computer languages or programming. They should also be versatile with web developments (like HTML, frontpage, authoring web pages, maintaining websites, web 2.0 functions), Project

management (like managing IT projects), production scheduling and supervising personnel).System applications (installation of software, upgrading software ,maintenance, installation and troubleshooting of hardware. Librarians need these IT skills to implement digital and electronic library service which will enhance effective service delivery for e-learning. Also the librarians should be equipped with the skills to be embedded more within teaching, learning and research. As there is a significant shift to the delivery of a high quality online learning experience. They should be skilled to either facilitate access to licensed online content or broker the design of bespoken digital content. Libraries will need to develop new strategies for negotiating better deals with publishers and lobby for greater access to streaming media and e-books which are more plentiful cheaply accessible to individuals than they are to libraries.

Developing Library Website:

These websites will help provide access to electronic resources that facilitates retrieval. A library website can function as an information gateway, an entry point to arrange online resources with key component being the library catalogue and journal databases (Sharifabadi 2006). Websites with educational content can offer learning materials, teachers support, lessons plans necessary for teaching and learning. Few examples of websites includes British Library at http://www.b/uk.whichoffers online resources and expert commentary related to history, English, citizenship etc. There is also the library of congress website at https://www loc gov/education. This website also offer classroom materials and professional development to help teachers use primary sources from the library's vast digital collection .The Europeans space website at http//www.europeans space.eu /education targets users from primary school to universities (Vrana,2017). All these websites including those developed by Nigeria universities have been structured to help offer learning materials, teachers support necessary for teaching and learning. Libraries should ensure that these websites are made available and also more websites should be developed to ensure easy access of information to e-learners.

Also the library should install mobile collections and databases. They should strategize with the database publishers and equip the library website with mobile version of their databases for their clients to access both e-books and e-journals via their mobile

devices (Lippincott 2010). These databases are said to be mobile friendly as they easily interface with mobile devices. Murray(2010) states that e-book readers make it possible to access these databases irrespective of their geographical location. Most institutions are installing these databases for their online users. The University of Nigeria Nsukka open educational resources is an open website for sourcing of information .This online resources in their databases includes the Hunari, Ebscohost e-book & e-journal at http://search.ebscohost.com. They also have the JSTOR, OARE, Edward Elgar's journal and development studies e-book, pubmed central etc. these are part of their databases that are available for e-learners.

Developing Meaningful Digital Literacy Programs:

Digital literacy is the ability to effectively use and communicate information with digital technologies. It covers a wide range of topics related to information technology and is done by using the digital technologies to find and evaluate information. This program could be inform of workshops that directly respond to privacy, collaboration, cognitive load and other emerging issues regarding digital technologies which can enhance and underpin classroom e- learning tool usage. Libraries are actively tailoring programs to meet these needs at all ages and literacy levels. The library is also an ideal location for this kind of support to be centered because digital technologies are fundamentally about accessing, assessing and using information and library staff has the skills to support this activity. This program is therefore necessary as there is now an increase in e –learning initiatives in public schools and post secondary. If courses remain online, deeper integration of both library resources and personnel into course system is essential to ensure students gain information literacy skills.

Librarians should be involved in e -Learning Programs and Classrooms

Being involved can be achieved by adopting blended learning approaches ie teaching both face to face session and following up with students through the Learning Management Systems (LMS). Working closely with classes on specific assignment delivered online. Library staff helps students and staffs navigate resources necessary for their courses. To achieve this, librarians should participate and be part of the learning

technology / e-learning committee to better understand trends at the school. This entails reaching out to faculty, sitting officially on an e-learning committee in order to be involved with the e-learning initiatives. When library staffs are involved from the outset, they cannot only help locate valuable resources for the course being developed but also advice on the kind of support that they can provide to students once the course is underway. This information can then be built into the course with direct links to library users. Through this, librarians can help faculty members develop course content, co-teach, provide research consultation, hold virtual office hours online and assist in the identification and linking of course content.

Creating Digital Contents Accessible and Available on Mobile Platforms:

Short Message Services or text facilities have been relied upon by academic libraries. The mobile initiatives come along with its interactive capabilities, easy access to information, time saving, personalized services, user participation as well as limitless access. Mobile library services that are familiar to libraries are QR codes and social media tools(Palumbo 2014). The social tools that should be utilized for effective services in the libraries include Instant message for effective reference, blogs, podcasts, Social Networking Sites (SNS). Instant message for reference are applications which allow effective communication. Instant messaging offer enhancement of reference services to library clients since enquiries are immediately responded to. Blogs also contains scholarly opinion or academic point of views that are recent. They are used by academic staff and researchers as an information source of a particular subject area that are relevant to their academic endeavour. Academic libraries can therefore make use of blogs to create specific subject area, so it can serve as a platform for the dissemination of important information in the library. Podcast also support information dissemination to enhance service delivery. Social Networking Site (SNS) like facebooks, twitter etc can be used easily to share information in the library. It facilitates sharing of video and photos through the creation of databases that are image based. Social media networks are growing rapidly as channels of communication and interaction among individuals. The major advantages of social media networks are their abilities to establish and build relationships and social interactions, thus helping libraries to connect with the information needs of users. For online users, social

networks help libraries to create awareness and promote new information materials and services. It also promotes the exchange of queries and answers among librarians and library users; thus librarians are able to provide answers to the queries of online users. Installation of these mobile tools will enhance the information service delivery of the library. University libraries in Nigeria could leverage on these networks to promote information resources and services to online users.

Challenges of Libraries in actualizing these Information Services

Any endeavor that involves the deployment of ICT is capital intensive, library are not exempted from these cost. It has however been established that academic libraries in Nigeria are poorly funded. Lack of funds is the major reason for the underdevelopment of libraries in Nigeria. A study conducted by chisenga (2015) shows that most libraries lack funds to purchase library systems or managed to automate some or all functions. They lack the required funds needed for upgrade and maintenance of such library systems. When libraries are unable to pay for either maintenance or license fees regarding software systems, they forfeit the opportunities to access technical support and the necessary updates from their vendors. The inability of most libraries to subscribe as a result of lack of fund has a serious effect on information dissemination. Ebong, Ogwo & Nwachukwu (2019) supported this by stating that the success of the use of these technologies for learning is challenged by high cost of subscription, poor internet services, inadequate infrastructure, light fluctuations and lack of competent IT resources personnel.

Nigeria library professionals are aware of the benefits of ICT and it is evident that they are positively disposed to introducing ICT to their traditional services. This awareness has prompted libraries to propose several ICT projects, however technological challenges seems to be the major barriers to execution of such projects. Davies et al (2019) observed that the technological infrastructure that could facilitate projects in Nigeria and other developing countries has not received the required attention from relevant authorities. Hardware and software needed to maintain constant support for educational activities by libraries in Nigeria institutions of learning may not be possible due to meager budget. These technologies are constantly updated to higher version to meet current demands and

if libraries do not enjoy financial support, it becomes practically impossible for libraries to keep up with new trends.

Another issue has to do with the design of the format as not all contents on the desktop computer can be replicated on mobile platform. A lot of reorganization of text, images, graphics, table and other features has to be done in order for a document to befit for access on mobile devices. Also, problem arises in the bid to separate the content of the library services from the format of the mobile devices. Bansavich (2011) included that the challenges to the integrations of mobile technologies in teaching includes the complain of small screens, limited battery time and frustrating small key pads. Chuene , Lepota and Hans (2014) also added low battery power retention of some of the mobile devices and poor internet connectivity as part of the challenges in the success of the use of these technologies for learning.

Conclusion

The success of all academic learning depends on the ability of learners to have access to vital information. To ensure that the library meet the information needs of online learners, there is the need to innovate and chart new pathways of services. Digital and mobile technologies have the potentials that can enhance access to online information. Libraries should take advantages of what these technologies present to provide enhanced information services.

Recommendation

All stakeholders need to act to surmount these challenges as a matter of urgency to ensure effective service delivery. Librarians should develop skills set tailored towards providing and redirecting library services delivery in support of learning in virtual environment. This will help in redefining their values and services. It will also equip them in supporting faculty in teaching activities through articulating the information needs, finding appropriate information resources and critically assessing the results of online search which are key to success in e-learning. Librarians should also be well equipped to develop web based modules to support course integrated instruction sessions and to

conduct information literacy programs. Government should also subsidize the prizes of electronic devices, provide steady power supply, improve on internet service provision and ensure that adequate infrastructural technologies needed to ensure free flow of information are provided.

References

Abbasi, F & Zardary, S. (2012). Digital libraries and its role on supporting e-learning. "Awerprocedia information technology on computer science". Academic world Education and Research centre. Vol. 7

Adesanya, O. O & Idowu, K. U, (2015). The evolution of e- library in Nigeria academic libraries: Challenges and way forward, *Asian journal of education and e – learning*. Vol. 3 (4)

Bansavich J. (2011) Ipad study at University of San Francisa: Retrived from http://ipad.wiki.usfca.edu/file/view/ipad+study+at+USF+report+pdf

Breeding. M, (2017). Moving forward, letting go, Computers in libraries. *Information Today.* Vol.37 (4) retrieved from https:// library technology.org/document 23094.

Chisenga, J. (2015). Library users, ICT and libraries in sub Sahara Africa, 3rd Africa library summits & 1st Afla conference.

Chuene, N. D, Lepota, C. K. & Hans, R. T. (2014). Using E-Readers in education: challenges and opportunities. In Teaching and learning in computer and Engineering ,(pp 299- 305).

Davies, I. E. E, Nwankwo, C. O, Olofinnade, O. M, Michael, T. A. (2019). Material science and Engineering. Vol.640.

Dhiman, A. K.(2010). Evolving role of library and information centres in e-learning environment. Conference paper presented at world library and information congress; 76th IFLA General conference & assembly 10-15.

Ebbit, K ,(2015). How libraries are changing in the digital age. Retrieved from https:// www. Globalcitizen.org/en/content/five ways libraries are changing in the digital age.

Ebong, M. D, Ogwo, Uzoamaka& Nwachukwu, V. N. (2019). Availability and access of electronic information Resources to medical library users in universities in south south Nigeria. *Library philosophy & practice*. (e-journal) retrieved from https://digitalcommons unl.edu/libphiprac/2736.

Ei-hussein M.O M and Cronjer J. C (2010) Defining Mobile learning in the higer education landscape " Educatonal Technology & Society, Gale Academic Ore file vol. 13(3) P. 12

Fernandez – Rames, A (2016). Online library tutorials in Mexican universities; presence and characteristics. *Library Hi Tech.* vol. 34(4), 787-802.

Gonzales, B. M. (2014). Online tutorials and effective information literacy instruction for distance learners. *Journal of library & information services in distance learning*. Vol.8(1-2), 45-55.

Hassanin, R. A (2016). Impact of e-library on e-learning: Empirical study on HBMSU e-library, *Cybrarians journal*.

Information for all Programme (2001) Retrived at WWW.UNESCO.ORG.

Lippincott, J. K (2010). A mobile future for academic libraries: *Reference Service Review*, 38(2), 205-213.

Manjunath, B. & Patil, S (2006). E-learning and its impact on library and information services. Conference on ICT for digital learning environment. 11-13.

Palumbo, L. (2014). Mobile phones in Africa: Opportunities & challenges for academic librarians: Rutgers University Community Repository. www.dx.doi,org/doi:10.7282.

Sarrab, M . Al-shihi, H & Reliman, O. M. H (2013). Exploring major challenges and benefits of m-learning adoption. *British Journal of Applied Science and Technology*, 3(4), 826-839.

Sharifabadi, S. R. (2006). How digital library can support e-learning. *Electronic library*, 24(3), 36.

Taha, A (2007). Networked e-information services to support the e-learning process at UAE University, *Electronic library*. Vol.25, 349.

University of Sussex library (2020). Library FAQS Retrieved from https://www.sussex.ac.uk.library.

Vrana, R (2017), the perspective of use of digital libraries in era of e-learning retrieved from bib.irb.hr>datoteka>877304.