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Fausat Kehinde Adenariwo
adenariwokehinde@gmail.com

Abdulakeem Sodeeq SULYMAN
sulymansodiq.a.1524@gmail.com

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**Availability and Accessibility of Electronic Information Resources in Academic Libraries
as Predictors of Academic Performance of Students**

By

Fausat Kehinde ADENARIWO

adenariwokehinde@gmail.com

System Librarian

Fountain University

Oshogbo, Osun State, Nigeria

&

Abdulakeem Sodeeq SULYMAN

Institute of Professional and Continuous Education

Kwara State University, Malete, Kwara State, Nigeria.

sulymansodiq.a.1524@gmail.com

<https://orcid.org/0000-0001-91393273>

Abstract

This paper argues for the availability and accessibility of EIRs in academic libraries as predictors of academic performance of students of tertiary institutions. It raises the problem that the growing influx of EIRs has revolutionised academic libraries' operations and led to radical changes in libraries' services by making information available to students in new ways to support scholarly publications and identifies e-journals, e-books, e-theses and dissertations, databases, CDs/VCDs/DVDs, etc., as EIRs that can be made available and accessible to boost students' academic performance. It outlines space economy, ease of access through numerous metadata, search engines, online catalogues (OPAC), and protocols, cost-effectiveness, unhindered access and simultaneous use of EIRs as the benefits of EIRs; while it also discusses poor funding of academic libraries, cost of purchasing electronic gadgets, poor students' searching skills, infrastructure decadence and unreliable power supply as the factors inhibiting academic libraries from making EIRs available and accessible to students. It recommends among others that academic libraries should be adequately funded by management so that they can be purchasing the necessary electronic gadgets needed for the availability and accessibility of EIRs to students.

Keywords: Accessibility, Availability, Academic libraries, Academic performance, Electronic gadgets, EIRs, Students, Tertiary institutions.

Introduction

Academic library is a library that is an integral part of a college, university or other institution of post-secondary education, administered to meet the information and research needs of its students, faculty and staff (Reitz, 2004). Academic libraries, as posited by Kolawole and Igwe (2016) encompass research libraries, Master's and Doctoral Degree Granting Institutions, Junior and Community Colleges and Distance Learning Programs of Higher Education. Academic libraries work together with other members of their institutional communities to participate in, support and achieve the educational mission of institutions by teaching the core competencies of information literacy.

Olalokun (2013) viewed that academic libraries are established primarily to serve the academic and general purpose of the staff and students of parent institution. Abubakar (2011) emphasized that academic libraries are at the forefront of providing information services to their respective communities which comprise of students, lecturers, and researchers in order to support their teaching, learning and research needs. Academic libraries are set up for the sole purpose of complementing the easy achievement and continuous promotion of academic excellence in the parent institution (Olugbenga, 2011).

Academic library is the front burner that any serious researcher must be in constant touch with for his or her needs. Olurotimi (2015) submitted that an academic library is central and important in any academic institution. Its importance hinges on the significance that it is attached to research which is the core area in every tertiary institutions in the world. Since academic libraries are inseparable pillars for intellectual excellence, it is therefore imperative for them to have in their possession, information resources in diverse formats and one of those formats suitable for research and academic explorations of contemporary times is Electronic Information - which will subsequently be referred to as EIRs.

According to Kumar and Singh (2012), EIRs are referred to as all information sources that require the application of electric energy to access its information contents. These include but not limited to e-book, databases or e-journal and articles, CD Plates, flash drives of various sizes. The EIRs are not single entities; they include various types of resources such as electronic books, electronic journals, electronic databases, digital/knowledge archives and internet resources.

The EIRs are available in the electronic form and their access is through intranet, Internet, standalone computer, online and offline databases. Shukla and Mishra (as cited in Buba, Abubakar and Lawal, 2019) described electronic collection as the collection of information which can be accessed only by the use of electronic gadgets while IFLA (2012) referred to EIRs as those materials that require computer access through personal computer or mobile devices. In

order to utilise the ever growing range of electronic resources students generally must acquire and practice the skills necessary to exploit them.

For academic libraries to serve as active partners in the teaching and research processes, they are not only expected to support students and faculties, provide spaces for individual and group work and study; they are also expected to organise programmes and events orientating students on the availability of EIRs and also facilitate their accessibility by providing assistance in finding, evaluating and using EIRs.

Statement of the Problem

Academic libraries are central to the support of teaching, learning and research in every tertiary institutions through the provision of timely, adequate and reliable information resources. However, the evolution of information and communication technologies, which has also led to the emergence of EIRs have created a need for academic libraries to make EIRs available and accessible to students.

That need made Buba, Abubakar and Lawal (2019) submitted that the growing influx of EIRs has revolutionised academic libraries' operations and led to radical changes in libraries' services by making information available to students in new ways to support scholarly publications. As a consequence of such an electronic reform, EIRs such as e-journals, e-magazines and e-newsletters are growing steadily and their steady growth necessitate the need for their availability and accessibility.

This is because if EIRs are available and accessible in academic libraries, it will save the time students spent on research, provide access to information resources in far distance location, promote sharing of information among students, facilitate prompt access to information, reduce the stress of retrieving information, etc. In view of the foregoing, this paper therefore advocates for the availability and accessibility of EIRs in academic libraries as predictors of academic performance of students of tertiary institutions.

Concept of EIRs

EIRs are resources in which the information is stored electronically and are accessed through electronic systems and network. In this context, EIRs primarily denotes “Any electronic product that delivers collection of data be it text, numerical, graphical or time based as a commercially available resources (Bevekenty, Veeran and Salih as cited in Muhammed, Ahmed and Gusau, 2020). EIRs are package of e-journals or databases of abstracts and indexes that include full text of some articles referenced by the indexes. It is an electronic interface through which information is offered, and is considered as such because its elements are intricately linked, even though they can be licensed separately.

According to Bothman and Holbig (2010), EIRs are electronic representations of information, which are available in various formats like e-books, online journals, e-magazines, e-learning, tutors and online test. Because of the effective presentation with multimedia tools, the e-resources have become the new, reliable sources of information. Sabouri, Shamsaii, Sinaki and Aboueye (2010) opined that EIRs are invaluable research tool that complement print based resources in any traditional library settings because they provide access to information that might be restricted to the users because of geographical location or finances.

EIRs include CD ROMs, e-journals, and locally loaded databases, websites and abstracting and indexing databases such as Medline. Furthermore, EIRs also include products that aid in resources access for patron such as A-Z list open URL servers federated search engines and resources that provide full text context such as publishers electronic journal content (Muhammed, Ahmed and Gusau, 2020), journal contents platforms such as project muse or JSTORE and content aggregators such as EBSCOhost, academic search premier and proxy servers or other authentication tools (Bothman and Holmbig, 2010).

Muhammed, Ahmed and Gusau (2020) submitted that EIRs have become a critical part of the learning environment, particularly in the higher education because it brings tremendous benefits to faculties, lecturers and students to teach, research and learn more efficiently. EIRs absolutely required electronic gadgets before they can be accessed. EIRs can be inform of e-books, e-journals, e-newspapers, e-magazines, e-reports, e-papers for workshops and seminars, DVDs, CDs, cassettes, videotapes, filmstrips, e-manuals, e-dictionaries, e-encyclopedias, e-directories. Other EIRs can be databases like EBSCO, EMERALD, AJOL, JSTOR, DOAJ, TEEAL and HINARI among others, which are meant to augment the print (Ahmed, Umar and Dewa, 2020) information resources in libraries and other information centers.

Types of EIRs

There are various types of EIRs. Among them are:

1. **E-journals:** Electronic journals are the counterparts of the print journals. They are periodical publications published in electronic format, usually on the Internet or whose contents can be accessed through computers or other electronic means. Electronic journals have several advantages over traditional printed journals. Users can search the contents pages and/or the full text of journals to find articles on a certain subject, users can read journal articles on their desktops, users don't have to be in the library physically, users can e-mail articles to themselves or download them for printing, articles users want to read will always be available, even when the library is closed, hypertext links allow users to move to different sections within individual journals or articles and can link users to related resources on the Internet, journals can include more images and audio-visual material, reading e-journals can be interactive because users can e-mail the author or editor with their comments (SOAS Library, 2022).

2. **E-books:** E-books are the electronic version of the books we read. As we have physical books on fiction and non-fictional works, we also have e-books containing fictional and non-fictional information. The fictional e-books contain works of imaginations of their authors, while the non-fictional e-books focus on real life issues or written on a particular subject. Publishers have found the publication of e-books cost-effective and most of them are now publishing e-book version to expand the readability and user access to their publications.
3. **E-newspapers:** These are information resources containing news, articles, commentaries, editorials, advertorials, etc., that are disseminated to the public. The evolution of ICT has facilitated the publishing of newspapers in electronic format. Some newspapers use URLs to make their newspapers available where readers can visit their website and be surfing through their webpages to read the news that interests readers. On the other hand, some newspapers also use word format, pdf format or FTP to report news to their readers.
4. **Institutional Repositories (IRs):** According to Crow (as cited in Nwokedi and Emeghara, 2015) institutional repositories are digital collections used for capturing and preserving the intellectual output of a single or multi-university community. Institutional Repositories are a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. Some scholarly publications that can be uploaded into repositories include preprints and post-prints of journal articles, technical reports, theses and dissertations, work in progress, conference proceedings, teaching and learning materials. There are a number of open source software for running IRs such as Dspace, Eprints, Fedora and Greenstone.
5. **Open Educational Resources:** These are web-based educational resources that are freely available on the Internet for use by all in the society. The OER, typically refers to as online resources, including those in multimedia formats are information materials generally released under a creative commons or similar license that supports open use of the contents in online, e-learning or hybrid environments. They can originate from colleges and universities, libraries, archival organizations, government agencies, commercial organizations such as publishers, or faculty or other individuals who develop educational resources and are willing to share with the public (Amadi and Igwe, 2015).
6. **E-theses and dissertations:** These are electronic versions of academic publications required by tertiary institutions of learning to be published by students as a requirement in partial fulfillment of a particular course of study and thereby justifying their qualification for earning a degree certificate in the taken course. Dissertations are meant to be written by MSc students, while theses are meant to be written by doctoral students.

7. **Databases:** Databases are a systematic collection of data that support electronic storage and manipulation of data. Databases make data management easy. There are many types of databases. Among them are: distributed, network, hierarchical, object-oriented, relational, centralised, open-source, cloud, data warehouse, graph, personal, multi-modal, etc. (Peterson, 2022).
8. **CDs/VCDs/DVDs:** These are known as compact discs, video compact discs and digital versatile discs respectively. They are storage devices with varied storage capabilities of storing electronic information. These storage media can contain information such as videos, audios, pictures and files. The information they can contain is determined by their storage capabilities.

How Making EIRs Available and Accessible Can Facilitate Academic Performance

Every human activity in this era of technology oriented is being driven by ICT. The use of technology in every sphere of human affairs is incontrovertible. This is to say that studying and learning are not exempted from being performed by electronic means. A typical description of this assertion is the use of social media. The social media provides avenues to accessing various electronic information which have helped students in independent learning and advancing the frontiers of knowledge in their areas of interest.

To justify the importance of social media as veritable means of accessing EIRs, Honickman (2022) reported that as of April 2021, social media users have reached a global total of 4.33 billion – that equates to more than half of the world's population which stood at 7.85 billion at the start of April 2021. On average, users spend nearly 2.5 hours on social media. Much of this time is spent on the larger social networks such as Facebook, Instagram, Twitter and TikTok. The use of social networks is massively increasing every day. According to Gupta (2019), the United States and China are the leading users of social media. They presented the following prominent examples of social media platforms with global users' statistics as of January 2018:

Facebook has 2.167 billion users, YouTube has 1.5 billion users, WhatsApp (1.3B), Facebook Messenger (1.3B), Wikipedia (33.6M), WeChat (980M), QQ (843M), Instagram (800M), Tumblr (794M), QZone (568M), Sina Weibo (376M), 12. 12. Twitter (330M), Baidu Tieba (300M), Skype (300M), LinkedIn (260M), Viber (260M), Snapchat (255M), Reddit (250M), LINE (203M), Pinterest (200M) and YY (117M).

The above statistics imply that more than average of the world's population use their electronic gadgets for recreation, learning or studying. Though, what they use their electronic gadgets for is not clearly ascertained, but assumption can be made that everyone use their phones, tablets, phablets, computers, laptops, desktops, palmtops, etc., to access information available in various platforms and as users spend time with their gadgets, it becomes obvious that the time spent will, in one way or another, contribute to the academic performance of the students among the users.

Therefore, it becomes an imperative for academic libraries to be naming or coding their EIRs in ways mostly suitable and appropriate to the description of the contents of their electronic resources. Since the EIRs are flexible, academic libraries should take advantage of them by naming them in the simplest and easiest ways students can search for them. When students access EIRs with less or no efforts, it will promote how students use the EIRs for academic purposes.

Another way academic libraries can make availability and accessibility of EIRs serve as predictors of academic performance is through hypertexting and hyperlinking. Academic libraries can represent several EIRs and link them together in a single electronic means. This may be in databases, website, CDs, VCDs, DVDs, etc. The same thing is applicable to hyperlinking where various EIRs can be in various formats where students can have access to them through online or offline means.

Benefits of EIRs

Scholars, researchers (Amadi and Igwe, 2015; Nwokedi and Emeghara, 2015; Muhammed, Ahmed and Gusau, 2020) posited that the EIRs have many benefits. Some of those benefits are hereby discuss below:

1. **Space economy:** EIRs have enabled libraries to save space by aiding the conversion of print information resources into electronic form. For instance, a thirty-five volume book that can occupy a whole shelf can be converted to digital format and saved on storage devices.
2. **Ease of access through numerous metadata, search engines, online catalogues (OPAC), and protocols:** EIRs can be accessed through various means such as metadata creation, search engines, online public access catalogue and search protocols. Let's take metadata as an example. EIRs are metadata. However, users can have access to them by using the common tags/labels to access other data or files contained in an Electronic Information Resource.
3. **Access which is not hindered by distance or boundaries:** EIRs can be accessed in any location regardless of the geographical distance or boundaries. Though, factors that may affect access to EIRs can be poor network connectivity, password/security codes, incompatibility of format, etc.
4. **Simultaneous consultation of the same EIRs by many users:** The same EIRs can be accessed at the same time by many users from different geographical locations, with no user obstructing the other user from accessing the information. For example, someone from Nigeria can be accessing a picture on the website of the Library of Congress and another user will also be accessing the same picture at the same time.

5. **Cost-effectiveness:** EIRs are cost-effective in the sense that they save libraries from continuously spending unnecessary costs for information resources that are concurrently needed and used in the library.

Factors Inhibiting Availability and Accessibility of EIRs in Academic Libraries

1. **Poor funding of academic libraries:** Most academic libraries are battling with the challenge of paucity of fund. This has been a major hindrance to them delivering quality, effective services which making EIRs available and accessible are part of.
2. **Cost of purchasing electronic gadgets:** Since most academic libraries are suffering from poor funding, it becomes a challenge for them to purchase the electronic gadgets that will be used to make electronic information available.
3. **Students' lack of searching skills is responsible for their inability to make good use of e-resources:** In a situation where EIRs are available, students find it difficult to have access to them because of their minimal or inadequate skills of searching and locating EIRs.
4. **Infrastructure decadence:** Lack or inadequacy of the basic structures such as networking facilities, routers, nodes, computers, laptops, UPS, etc., required to make EIRs available and accessible also pose a challenge to making EIRs useful for academic performance of students.
5. **Unreliable power supply:** EIRs needed a stable power supply before users access the information they contain. However, studies have revealed that the epileptic power supply in most developing and under-developed countries have hampered the availability and accessibility of EIRs to students.

Conclusion and Recommendations

The emergence of EIRs has simplified the ways information is being created, processed, stored, accessed, retrieved, disseminated and used by users. Specifically, availability and accessibility of EIRs are two major factors that signify the optimal use of the contents of EIRs. Based on this, this paper therefore concludes that access to the available EIRs is paramount for the students' academic performance. This is because since more than average of the students use their electronic gadgets for more than twelve hours in a day, constant and unhindered access to EIRs will be inspiring students to use the available EIRs to boost their academic performance.

Based on the issues raised in this paper, the following recommendations are hereby made:

1. Academic libraries should be adequately funded by management. This is because doing this will enable academic libraries to purchase the necessary electronic gadgets for availability and accessibility of EIRs.

2. Staff of academic libraries should always update their knowledge and skills in order to meet up with the new demands and challenges of their profession. Staff of academic libraries with inadequate skills will find it difficult to help students access and optimally use the EIRs in the library's possession.
3. Students should improve their information searching skills in order to equip and empower themselves on how to independently search and retrieve electronic information with little or no assistance from the library staff.

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