

Academic Research in a Digital Library: Things to Know on the Rampant Use of Online Resources from the Internet Without Proper Skills from the Relevant Experts

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ABSTRACT

In a world where Google search engines and other Internet aided engines are now mistaken and miss-conceptualized with digital library and its operations, the professional duties of a Digital Librarian seem to be at risk. This article therefore aims at giving a concise definition of a typical digital library, with the focus of exploring its services to academic research and researchers at large. The article also aims at exploring the best concept for a digital library by discussing the step-by-step approaches to the establishment of a digital library. The environment and space limitations of a digital library. The scope covers digital library at individual or private setting and to public or commercial operations, the difference and comparisons. The equipment and materials that supports a typical digital library for academic research writing and research integrity with the aim to promoting professionalism in librarianship within and outside the academic community. This is why the article attempts to conceptualize what academic research is all about and how to utilize the digital resources in the typical digital library including organization of knowledge in a digital library. Finally, the article looks at those who are professionally qualified to man a digital library and why? The article concludes by establishing the connection and misconception of internet-based searches and digital library. The article recommends that researchers should access digital library while conducting their research to explore the best resources with academic integrity than mere posts in blogs and Wikipedia sites in the Internet.

Keywords: Digital Library, Access, Components, Equipment, Research, Space,

INTRODUCTION

The continues increase in the fall of academic integrity in research writing is believed to be the rampant use of digital and or online resources from the Internet without proper guide from the relevant expert whilst, this is a speculation yet to be substantiated with empirical studies to the best the researcher opinion. Most people believe that there is no doubt that the Internet is an important aspect of the digital library, but the Internet is not the Digital Library in itself. There are different sites such as blogs and open access databases that host unpublished and published articles respectively. Most of these articles are classical and some are baseless especially in terms of sources and findings in respect to academic writing. Any lack of these could lead to “unacceptable” decision in academic productivity which in turn affects the academic integrity on quality publications. Academic integrity is the trust, honesty and fairness with which academic writers display in the writing of academic research [UOL, 2022]. One may wonder why using the word “unpublished” in the situation where the said article is hosted in the database. Even though this article is not on this particular topic to compare which database is Q1 rated or webometric in general such as high impact indexes, the views of the

authors of this opinion paper remains that it is important to discuss in a primary perspective that sites such as ResearchGate, Academia and the likes have the high percentage of hosting none peer reviewed publications. The tendency may not be substantiated in an opinion article such as this discussion, however, from preliminary observations and assessments of these databases, the truth remains that, each profile author is entitled to create, upload and decide which article he uploads in his or her profile. This creates more jargons in the open space and most people who considers themselves, users of online resources lack this insight to juxtapose the need to determine which article has the academic value to use as research resources.

This is the reason; this article has been designed to discuss the online space using the digital library as a case study to expose academic writing in the 21st century library operations. Digital library in academic writing has numerous advantages and thus should be guided jealously by the library professionals, information managers and knowledge managers alike. One most important aspect of it is to ensure that researchers understand the scope and limitations of the digital library in academic writing, and secondly to ensure the job of librarians are not at risk in this situation where every researcher now claims to have a digital library in the comfort of their zones and to let the readers understand that the integrity of online resources are rooted in the nature of the sources. The opinion of the authors of this article is that only a classical digital library can host and be able to retrieve academically sound publications for academic writing. Let's now discuss in details the concept of academic research writing, digital library, access, space and equipment or components of these concepts to explore the views of the authors.

Academic Research

According to Rafi, JianMing, and Ahmad (2019), they insist that “research work is a supportive tool for managing gaps and promoting the development of necessary measures to develop strategies and solutions to create a better academic environment”. Academic research writing is the in-depth search for existing literature, to establish the current state of a particular situation or circumstance. It could be to identify a concept, develop a model or test a theory and then identifying the resources and reviewing them to identify the gaps and close the said gaps with the sole aim of drawing conclusions and to proffer solutions through recommendations (Tadese, Yeshaneh, & Mulu, 2022).

Research Ethics

Research ethics are the prescribed code of conducts and practices guiding research writing and publication. Although is usually institutionalized in most cases, research ethics has general uniformity of upholding academic values in the processes of research productivity across the academic community. To ensure academic integrity is maintained, research ethics are spelt out for guidance (UoL PGR Code of Practice, 2024).

Research Integrity

Research integrity is nothing but the features of research writing that upholds the principles, code of practice and professionalism which academic research has followed to produce quality production process. The ability of the researcher to maintain originality and research ethics is what research integrity stands for in the content of this article (UoL PGR Code of Practice, 2024).

Resources of Academic Research

According to Rafi, JianMing, and Ahmad (2019), they insist that “digital library database resources have a significant impact on stimulating the research culture in higher education”. Resources for academic research are literature sources with academic integrity. You will notice that in referencing, either Chicago, APA, or any other style of academic referencing, there are components that makes up the referencing editions. In academic writing, a researcher is expected to only use resources that are source, author and publication features. However, in most cases, authors may be unknown but the source must have a traceable source. If the source is from an Internet, the date and means of retrieval is usually stated. Put simply, only resources with sources are allowed in academic research. In some exceptional cases like in historical research, footnotes are used to quote

direct interview, whichever be the case, the researcher is expected to code the interview as data which also means the source is known or is attributed to copyright license.

Plagiarism

This is an act of identifying the direct use an authors' work in a subsequent publication. In research writing, researchers are allowed to use exiting works as literature sources to review the state of existing situation in a field of study or event in the society with the aim of identifying gaps and closing them. The above is allowed by either direct quote with such acknowledgement or by paraphrasing the words with referencing. Acknowledging the author's work is the requirement of copy right.

Copy Right

Copy right in academic writing is the acknowledgement of an author in the work. The act of not acknowledging the author of a literary work in the subsequent production either by the same author or another author or writing is plagiarism offense.

Digital library

According to Rafi, JianMing, and Ahmad (2019), they maintain that digital library is the hub of online academic resources. The term digital library is used to describe a type of library with database subscriptions bearing a host of digital collection such as text, images, video and audios and accessible via electronic systems. The real typical digital library could be available online through the Internet or on a stored device such as CD-ROM disk and the likes. In the recent times, people see digital library as library without walls and or an Internet library. Depending on the context of the concept "Internet Library", students or researchers may misunderstand the real context of the Internet. Some miss-concepts that once someone browses the Internet, the user is using the digital library is inappropriate in the context of this article is also not the views of the paper. However, in the real sense, Internet is just a tool to access the Digital library collections. We shall see the equipment for the establishment of a digital library as we move on and then the real meaning of Internet.

Classes of Digital Library

There are types and forms of digital library. This section classifies the aspects through which one may understand the various natures of a digital library.

Offline Digital Library

Digital library where its resources are stored in the hard disk or CD-ROM is classified as a typical form of digital library. In any case, the computers in the library could be linked with D-Link connectivity to the various systems within the building including digital projectors, scanners and LCD screens. Once the resources accessed in such library is housed and hosted within the library walls, such digital library is an offline digital library. What makes it digital remains the fact that such libraries are not in form of a physical book material but in soft copy versions. Few copies of the book materials in the library must undergo retrospective conversion of the books to ensure compliance (Unagha 2008).

Online Digital Library

The direct opposite of the offline digital library is the online digital library. It is usually described as the library without walls. It is usually built up with Internet connectivity to ensure inter-library link and subscription database accesses. For example, digital library in Abia State University Uturu, Nigeria could access the University of Liverpool library materials using their access codes. It also allows access to open access resources like open access journals and databases (Ujoumunna 2019).

Private/ Special library

When a such a definition of a digital library as conceptualized above is established and managed by a private

individual or group of individuals or a private limited company or organization to service the staff members of the parent organization, such digital library is a private digital library. One special feature of private digital libraries is that they form in most cases a special library due to the nature of specialized collection of the interest users for the sole benefit of the organization. In the advanced countries like the global North and West, Digital Private Libraries are established for profit making and made available for use to the public. According to Unagha (2008: 38) he maintains that special library is a collection of materials in the interest of the serving community.

Public Library

The direct opposite of the private class of digital library is the public digital library. They are usually located in public institutions as section of the main library. For instance, in an academic library belonging to a university, public library belonging to a state, and the national libraries all are designed to operate a section the digital library.

Step-By-Step Approach of Establishment

In any attempt to establish a digital library, there are specific approaches to be considered in other to have a functional and effective digital library. The first and foremost is the consideration of the architectural design of the environment and space for the library. The next is the structural design of the library. The third is the finance and followed by the databases/ subscriptions. The fifth is the Internet access. The first and second steps are discussed under environment while the finance and subscriptions are discussed under resources. The internet is discussed under 3.6.

Environment

There are two major approaches to a functional digital library. The architectural and structural designs. The first deals with the space and physical structure of the library. It will put into consideration what type of building is appropriate for the library in regards to ventilations, capacity and water proof as well as temperature regulated environment. All these are necessary because of the nature of the equipment found in a typical digital library. We shall consider the equipment in the later section. The latter is the structural design. This deals with inside of the library. What kind of furniture is the library structured to run with, is the library structured to be databased library hosting indigenous resources in form of repositories without access to subscribed databases, and the nature of the materials it supports? Some digital libraries are structured to support a special collection while other supports general sources and resources. However, we shall discuss this under resources for more understanding.

Resources

According to Khan, Ahmed, Khan, Khan (2017), while promoting the role of digital library resources maintain that “the role of digital library resources (DLRs) in accelerating academic and research productivity has been acknowledged worldwide”. This part of the chapter is what determines or defines which type of the library and what distinguishes the library from other kinds of the library including Internet resources. Internet resources could be anything like blog posts, un sourced material and the likes but resources hosted and retrievable from a digital library are succinct and academic. There are resources hosted within the library CD-ROM Disk and the other from subscription databases through Internet access. For instance, a special digital library such as a law firm could subscribe to LexisNexis, Westlaw UK Law Databases, Legal Databases, Oxford Law Databases, IALS, Heinonline, JSTOR and Legalpedia. For a health or medical digital special library could subscribe to Cochrane Database etc. The resources for a typical digital library are more than just an Internet material.

Internet

The home of all online databases. Engine hub of the World Wide Web. Internet is the communication hub of the global community which provides variety of resources in a non-organized and informal manner. Internet is

a non-classified and uncatalogued system of data. It holds information from different websites including verified and unverified way.

Organization of knowledge in Digital library operations

The difference between Internet and the online library is the nature of the approach been adopted in the organization of knowledge in the online library. In the other hand, the term online library may be differently used with the term 'digital library'. This is because, a 'virtual library' may be digital but not online. Therefore, a digital library is only online when there is Internet connectivity in the library. So, the internet serves as both engine search and access to online databases such as LexisNexis. The typical digital library should be established to have both components; however, it ensures that there are organized resources and access codes to each database and the volume and sources of each resources known. Which means there are always an online catalogue to describe what the library holds and how to access each one of them. This is a similar approach to a physical library catalogue which differentiates the digital library from Internet hub.

Digital access

Accessing online resources are very important. Digital access involves two aspects as discussed in the classes of digital library. A researcher could access academic resources in an offline digital library by walking down to the library. This is very necessary when such a researcher finds it difficult to navigate his way within the online catalogue to retrieve the specific material he wants. It is therefore important to note that in accessing digital materials, a researcher may find similar materials without knowing exactly which material that finds his research. Some others may know which particular material they want but may not know which access code to locate and retrieve the material.

Again, having access to digital materials may be online access. Most materials are open access materials which means that a researcher may locate, retrieve and either download or make a printable copy while others may not be such free but for a fee. All these depend on the nature of the website or database. For instance, in academic institution, such terms like discovery, library make easy, my research base, are all different platforms to access institutional repository where research outputs of the members of the academic community are stored and made available for use to the members of the research community or the public for a fee. See figure 1 below for a typical example of a digital library access platform

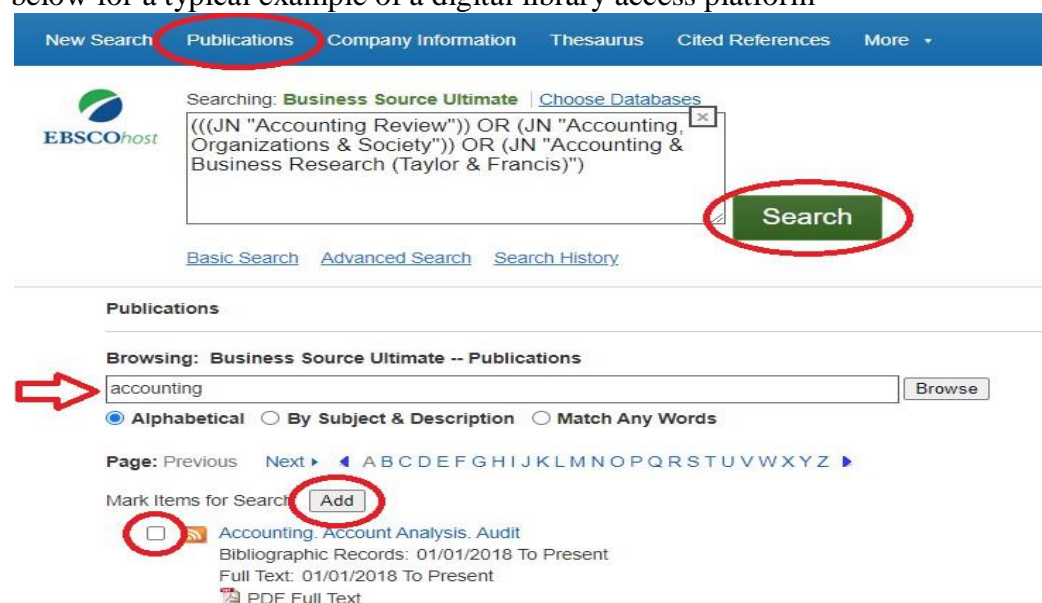


Figure 1: Database Online Library Access

Open Access

This the access mode granted to free academic resources for the use of the academic community. However, even though some are called Open Access, it requires one to be a registered member of the community before

such materials are totally accessible. For instance, you need to be a student of the university or staff to login to access their materials for free.

Institutional Repository

The concept of Institutional Repository (IR) is seen as “an online archive for collecting, preserving, and disseminating digital copies of the intellectual output of an institution, particularly a research institution” (Khosrow-Pour, 2023). In views of Kennan and Wilson, (2022) sees Institutional Repositories as a place where critical stakeholders submit their academic research outputs. According to her these stakeholders are members of the academic community, librarians, researchers, publishers, scientists and other members of the academic institutions.

Database Resources

According to Rafi, JianMing, and Ahmad (2019:1), they posit that “the use of digital databases makes it possible to understand intellectual growth, research productivity, planning and identification of user information needs”. The official subscription sites for online material are called a database. Conventionally, a database is seen as an organized structural system where data, information or resourceful materials are organized in sets and are usually accessible in an electronic format.

Blog and Websites

A website has the same feature with a blog. This is because but share the originating end as been managed by a person or organization with a specific domain name. it hosts a set of related web pages located under a single domain identification for example.. another good example is the University of Liverpool website thus In the other hand, another example of a blog among other addresses.

Subscription Sites

The payment made to gain either a periodic access or unlimited access to databases are called subscription. The website or database are the sites in itself. See section on Database above for names.

Environment and space

No library exists outside of an environment and space where they service and are accessed. Even those libraries without walls have places where they are hosted and managed. The environment defines the people within the community which the library service within a space. The space represents the scope and vast nature materials stored, hosted and made available within a space of academic discipline or on a general subject.

Environment Defined

Environment is a literary context according to Oxford Language Dictionary defines it as the surroundings or conditions in which a person, animal or plant life or operates. Seeing the library as a thing or entity, with the potential of a growing organism, one may now define the library environment as the conditions in which the library lives and operates.

Concept of Library Space

Space could mean many things, such as continuous area or expanse which is free, available or unoccupied. It could be dimension of width, height, or even depth and also the distance from where one person stays from another. This is related to environment in the literary context but conceptualize as a different term when used for the library entity. Therefore, library space in the context of this chapter is seen as the space where digital materials are made accessible to researchers. The space of a digital library may be limited or unlimited. When is offline the space is limited to users only within the library. When is online is unlimited to contents depending on the environment and what the managers want and users' needs. This primarily means that, unsubscribed databases are limited with access but does not limit to what extent the library can subscribe to.

Even though online libraries are said to be limited in terms of content in space definition, the environment where the library is established may limit the library space to only related materials needed in such a special library.

Technology Space

There are specific devices and systems needed in any typical digital library. Because a digital library is technology-based library, it is said to allow the use of technology such as hybrid computer systems. Danielzemancik in his article titled “7 “Library technology trends that are transforming the way we work” identified the following technologies as

1. Artificial intelligence
2. Digital resources
3. Faceted search and discovery
4. Responsive user interface
5. Library automation
6. Electronic data interchange
7. Cloud-hosted library solutions

All these technologies are in multidimensional interface which comes in different software applications. What is unique about all these technologies is that each works with human interface. Again, each has advantage and disadvantage as well. This section is only meant to review these technologies, a fuller exploration of the concepts may be best seen in books on library soft packages and technologies. The point made here differentiate the digital library from the Internet search engines where few uninformed academic researchers relay on to believe digital library could be any computer accessing the internet materials. Only an organized digital library could put into place these technologies which demonstrates a typical digital library. One reason for this opinion is that these technologies are costly and needs multi-purpose uses as it may not be necessary for an individual to invest huge sum amount of money to set up these technologies for one in time access to the digital wall. It is practically impossible (DanieLzemancik 2023).

Components of Digital library

Another important aspect of the digital library that makes it stand out from a computer internet aided device are the components of the digital library. We shall now consider these nine aspects of the digital library being referred to as the components.

Digital Library Resources

According to Khan, A & Ahmed, S. (2013), they found out that up to “one-fourth of the respondents use digital library resources two to three times a week for article writing and thesis or dissertation purposes”. One may now ask, what is digital library resources? This is the general name given to all library material that are accessible through the digital library platforms. They could be stored in the CD-ROM or accessed through the online database.

Metadata

This represents the source of the resources in the database. The DOI, access code, web address, the server, the publisher, the author, year of publication and ISSN or ISBN and if possible, all necessary identifier of the digital materials.

Digital Repository

In all academic institutions with digital library well established as described in this chapter, all the research outputs and other academic publication of the faculty members and the academic community connected to the mother institution is usually stored and organized in the institutional repository. However, in a typical digital

library environment, submission of such publications is only acceptable in two formats. The first is the submission of the access code or digital identifier called DOI if published in another online database and the second is to submit the soft copy in flash drive or CD plate for the hosting in the server of the digital library. In doing this management function, the digital library builds up her indigenous knowledge collection in the digital repository of the digital library.

Digital Preservation

The process of conducting and carrying out digital repository is known as digital preservation. This is because all these materials submitted to the repository are invariably prepared through the process of digital preservation.

User Interface

As earlier mentioned under technological space of the digital library, user interface was mentioned in the discussion. This is show how those technologies work. They are designed to interact with human (users of the library) who makes use of this digital libraries. For instance, on real time customer service response, the AI responses to user reference questions as though they are human in real time, they identifier users wants, locates or say sorry not in the library and retrieves the digital resources in real time quick response to the user.

Authentication and Authorization

Digital library users are assigned digital identities as username and password. Once a researcher subscribes to the library, such a unique login details known as access code are issued out to the user. Therefore, at any point the users' needs access to the library, the system authenticates the access and authorize usage.

Search and Retrieval

A typical digital library is designed to provide discovery interface where library user can enter access code entry to easily retrieve digital resources. Under this section, access code represents sensitive entry used to retrieve a material such author's name, book title, ISSN or ISSBN, year of publication or the publisher. The search platform enables the user to see related books especially when the exact material identification is unknown but one of the access codes is known like the year of publication and the author.

Licensing and Copyright

The ability to conduct collection development process and engage in perchanse of digital materials does not in any way support non acknowledgement of Copyright Act. Every digital library is expected to purchase the legal license to store and market in material especially by either contacting the author direct or the publisher. Any noncompliance of this process is a serious offence. Again, a researcher writing a research work is expected to ensure academic integrity by acknowledging the author's original idea or work. This is called copyright.

Analytics

One good attribute of these components is this last aspect that connects the other components. The digital library has the ability to filter (analyze) what digital resources is available in the library, by who, which subject area, year of publication, when was it purchased and every necessary entry relating to each material. Internet search as few researchers claim to be a digital library does not have this feature or component that distinguishes the typical digital library from the Internet as it were.

Equipment for Digitalization

The digitalization of a library is quite a long process and requires concerted efforts. This chapter is not focused on the discussion of full digital process, rather the section will introduce to the readers, especially trainee librarians what equipment they will need to carry out the process of digitalizing manual library into a digital

library. However, if one need to establish a typical digital library, there are step-by-step approach to the establishment as discussed in the earlier part of this chapter. It is also important to note that digital library planning should start from day one. This means that, they need to start building up through collection development from day the storage of only or both digital materials and the physical copies of the materials.

Computers

These are electronic systems that accepts data, process data, store data, classify the data into information and retrieve information when required. They are the medium through which digital materials are stored and accessed.

WiFi and Bluetooth

These are wireless connectivity systems used to link the systems together interconnectivity and sharing of resources. They have coverage limits usually radius or meters. Most WiFi and Bluetooth can cover distances up 100 meters. However, the difference between the two are network access and document sharing. This is not to say that some Bluetooth devices cannot share internet or network access to other linked devices. But, in most cases, Bluetooth is best use to do file transfer while WiFi is best use to share network and Internet connectivity.

Screen

These are monitors displaying instructions such as directions in the library environment. Because the digital library environment is usually an automated environment, most customer reference questions are user interface designed. The users read the material on the screen and also accesses the catalogue on the screen.

Printers

These are output devices that enable library users to make copies of parts of some materials they may not have access to outside the walls of the library during the login details. Such books may be restricted due to high sensitivity of the content. Also, for library user who may not have internet connectivity outside the environment of the library to login to the library user interface.

D-links

These are electronic devices that enable interlinking system of the various computer systems, including printers, LCD, speakers and monitor as the case maybe. However, in the modern library facility, wireless connections are mostly used such as WiFi and Bluetooth.

Duties of a professional Librarian in Academic Research

According to Fatima Warraich, & Ameen, (2008) in their findings revel that younger professionals find more interest on database resources and digital libraries. This confirms the opinion of this chapter that most increase in the failure of academic integrity in academic research writing lies on the improper use of online materials by the academic community. This gives more concern for experts like professional librarians to guide these younger professionals on the proper use of these digital materials for academic research. It has been established in this chapter that a typical digital library is obviously different from a computer Internet aided system that researchers use to download materials at the comfort of their zone. However, the duties of a trained librarian are mostly needed to effectively and efficiently manage and control the operations of the typical conceptualized digital library. Who is a trained professional digital librarian; and why is her duties mostly needed in the organization and management of the digital library?

A trained digital librarian is not just a professional librarian who has acquired librarianship certifications from Bachelor Degree in library and Information Science, Masters in library and Information Science and or a PhD in Library and Information Science discipline but someone who has acquired these degrees with special interest and qualification in Digital Librarianship. Such professional specialization include certification on

Information and Communication Technology as in modules on Library Application Software, library Technology, Automation and Digitalization courses. Such person must have also shown involvement in digital library conferences and workshops organized by most professional bodies with specific sectional training on Library Digitalization (Fatima Warraich, & Ameen, 2008).

Finally, it is therefore imperative that someone who has professionally undergone such training should be engaged in the functions of the practice. Therefore, leaving such functions and duties in the hands of quacks is not only unprofessional but worrisome and relates to so many unethical research publications and increase in academic integrity failures in academic research. This is true as most academic researchers do not understand the need to access digital library to retrieve the right academic material for their individual research, but they end up downloading jargons from the Internet without sources to back up their publications.

RECOMMENDATION

Researchers should enroll into digital library platforms where trained librarians are deployed for proper guidance and possible supply of current publications in their respective field of study in doing this, academic research standards will increase and sustained.

CONCLUSION

This article has basically discussed the issues of academic writing and the basic concepts the readers are expected to encounter in the use of digital library for academic writing. In doing this, the article was able to conceptualize academic research writing, research ethics, integrity, resources outsourcing, plagiarism, and copy right concepts using opinion method.

The article made effort to chart the course on silent issues surrounding the concept of digital library with the aim of exploring the understanding of use the digital library for academic research. In doing this, the concept of the term digital library was discussed using similar terms like virtual library, and online library. Types of digital library like private and public and forms of library such as offline and online, the environment, step-by-step approach and resources were also discussed. Then the Internet and organization of knowledge in the typical digital library were discussed. It therefore directs academic researchers to understand the need to access academic resources from the digital library for source and academic integrity than using unverified materials from the internet while writing academic research.

This article has discussed the library environment and space with the view to explore the library operations within the limit of a typical digital library. Also discussed in this paper is the technology space in a typical digital library. This paper therefore demonstrates that digital library is not just a computer system that has Internet access. Instead of referring such to a digital library, is best to say an internet connected computer.

This paper discussed various concepts and miss concepts on digital access by explaining in simple terms, the meaning of digital access, open access, institutional repository, databases resources, blog and websites and subscriptions sites. This was meant to let researchers understand the various means and platforms they could own and manage a digital library

Finally, the paper discussed most of the few important equipment needed to have in a typical digital library. This also suggests why a computer set that has access to the Internet is different from an organized digital library as a major conclusion of this paper.

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