**DESIGN AND IMPLEMENTATION OF E-LIBRARY SYSTEM (USING ADEKUNLE AJASIN UNIVERSITY AS A CASE STUDY).**

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**CERTIFICATION**

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**CHAPTER ONE**

**1.0 INTRODUCTION**

Library automation started in the 1960s in the USA. Since then, the trend of library automation has been spreading all over the world. Nowadays libraries are continuously increasing in number, and most are being automated. This automation is actually a combination of hardware and software, both being necessary for any automated system. In the field of libraries, software has become more important than hardware. Hundreds of library software packages have been developed and run successfully in advanced countries and there are many directories and other tools available to help librarians in the selection of suitable software for their libraries (Morgan, 2002).

Information and communication technology (ICT) that develops dynamically provides convenience and speed of service by users. In addition to providing a great opportunity to compete for libraries to improve the quality of their services. With very rapid technological advances at this time also facilitate the dissemination of information quickly to parts of the world (Ananda 2003). The development of information technology that is getting higher In a country makes the fulfillment of the country’s information needs higher (Yusrizal 2016).Based on this, there is an awareness to utilize information technology, followed up by implementing and investing in information technology, in the form of software and hardware, as well as infrastructure, so that technology can provide utility and accommodate library programs according to their objectives. Information technology is interpreted as a technology for the procurement, storage, and dissemination of various kinds of information sources by using existing computers or telecommunications(Ardoni, 2019). Therefore, there is a great motivation to manifest new technologies that can overcome the obstacles of humans managing information (Ardoni 2019). The obstacle is felt because the capacity of information spread quickly. Information technology allows the consumption of large amounts of information and at an extraordinary time (Ardoni, 2019). This ability is due to the “spearhead" of information technology, namely computers (Ardoni, 2019). Likewise, the information technology in the library of IAIN Batusangkar is the spearhead for universities to support the *Tri Dharma* of Higher Education

The e-Library concept is one version to make it easier when doing information retrieval in the library because this process provides convenience in tracing processes in the library. E-Library is one of the perceptions proposed for technological advances that occur today (Husna, 2018). This concept is able to transmit conventional libraries to digitization from the input system to the fast and up to date Search for information sources process (Nawi and Yuhanef2007).

The web-based library management system is aimed towards designing a system that

controls the activities which enables the libraries to keep a record of their stock and

monitor the status of same as well as satisfying the vast and varying needs of the

numerous patrons. The library played an important role in the daily teaching,

scientific research and learning among teachers and students. The management of

the library information using computers will reduce manual management mistakes

and enhance the efficiency of book management greatly. The chance in

technological advancement from the age of industrial attachment to the era of

information technology has quite increased (Njoku, 2001). It is now known that

information technology comprising computers and communication capabilities is

the fastest growing technology in the world today.

If the libraries threatened by the task of organizing and managing information are

to exist today, it must meet the need of its ever-growing patrons. With web-aided or

web-based, the flow of work will greatly speed up and if the processing technique

is properly analyzed, the accuracy of records and consistency of data field is

guaranteed. Henceforth, operations like bibliographic checking, ordering of receipts,

cataloging and classification, circulation, sand aerial listing are performed much more

quickly than the normal system. It will be obvious that users do not have to wait

too long before getting their materials.

Most libraries today find it difficult in achieving their goals due to the manual

library procedures. However, much is being expected that in near future most

countries will reach the stage when technology and society will coverage. Such

technology normally covers automation, web mechanization, and computerization.

The simplest form of library technology is mechanization which is the application of

machinery to routine library activities, the introduction of web-based management is a

more sophisticated process of replacing human labor and advertising libraries to

the world. The processing and the flow of work are speeded up by automated

method.

**1.2 MOTIVATION OF THE STUDY**

The library as an integral and significant part of educational system has undergone phenomenal development in the use of ICTs which have substantial influence in the process of information resources’ acquisition, processing, storage and use in developing countries. Consequently, libraries are required to provide access to huge information resources in diverse format such as print (books, Journals) and electronic format (e-books, e-journals/journal articles, CD-ROMs, Internet resources/services) as well as bibliographical information about these resources have influenced the adoption of LMS.

Similarly, libraries as a fundamentally service oriented units, where services are rendered to people with diverse information needs, (who are also from different) backgrounds, cultures, emotions, skills and behaviors, are bound to meet these various information needs of its patrons in the easiest, most efficient, and most comprehensive way possible. Therefore, there is need for highly efficient technologies/systems and processing tools in order to deliver these services promptly and also accomplish the quest to meet and support the information needs of library users.

**1.3 STATEMENT OF PROBLEM**

Due to the continuous usage of manually maintained systems, library administration has become an issue in many educational institutions. Effective student care is challenging under the existing system. This is evident when students wait in line for at least ten minutes to borrow a book from a librarian, who then has to manually register each student and the book they borrowed, wasting a lot of time. This study is significant because of the apparent inefficiencies and the high labor costs associated with hiring multiple library aides.

**1.4 AIMS AND OBJECTIVES OF THE STUDY**

**1.4.1 AIM**

The aim is to develop an Electronic Library Management System, with search functionality to facilitate the search and management of library resources.

**1.4.2 OBJECTIVES**

The following objectives will be achieved:

1. To design the database of books.
2. To link the database of books to the internet.
3. To implement the system using Hyper Text Markup Language.

**1.5 METHODOLOGY**

The proposed methodology of the digital E-Library system is listed below:

1. Problem Identification: Which deals with definition of existing system prompted by a need to solve problem which have been identified.
2. Feasibility Studies: It is the study of the existing system to identify its properties and problems.
3. Analysis: In this phase, it is the process of collecting and analyzing facts in respect to the existing operations, procedures and system in order to obtain a full picture of the situation prevailing so that an efficient, effective computerized system may be designed and implemented if proved feasible.
4. System Design: This phase advances the finding in analysis stage for proper organization towards physical implementation of system efforts.
5. Implementation and Maintenance: This phase ensures that the design is implemented and proper documentation on how to use the new system provided. Maintenance deals with ensuring the system in operational after change over and it takes place after the system has been tested, accepted and fully implemented.

**1.6 SIGNIFICANCE OF THE STUDY**

The constant boundary limitation amongst others, posed to the accessibility of intellectual resources and the quest for easy conduct of research led to the consideration and pursuit of this research.

Moreover, the combination of intellectual resources all in an anytime available spot, ease of use, and speedy search of information also triggered this momentous work.

**1.7 SCOPE OF THE STUDY**

Electronic libraries vary in scope, size, and resources lust like physical libraries too. The scope of this research is centered on the academic electronic library using Adekunle Ajasin University. as a case study. The resources of this library will be mainly eBooks, lecture notes, and past questions with some audio and video resources if need be.

**1.8 LIMITATIONS OF THE STUDY**

Due to some shortcomings that befall the researchers, there were a number of drawbacks that made it possible to get beyond this scope. They include:

* Lack of finance.
* Lack of some relevant materials in the library for reference.
* Non-availability of steady power supply.
* Insufficient computers in the university software laboratory compared to the number of users.

**Figure 1.1 LITERATURE REVIEW TABLE.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *s/n* | *Authors* | Problem Addressed | Title | Achievement | Aim |
| *1* | *Saifuddin Rasyid et al. (2021)* | To analyze the strengths and weaknesses of the e-Library system. | Master Plan Design and Implementation of e-Library System | The digital library was able to create way out to overcome various obstacles in the process of inputting and individual information retrieval, location distance, high social environmental demands, and fast, precise, and accurate up-to-date information | The system is directed to improve the processing and search processes to e-Library for library users with good quality and speed, as well as increasing the effectiveness and efficiency of library management. |
| 2 | *Abbas (2014)* | Eradicating the conventional and traditional method of searching for books, publications and lot’s more inside a Library. | Design and Implementation of an E-Library Search System | Connecting the system with the Internet and increasing the database of the E-Library by the number of books and theses, and adding the database of the system to other kinds of publications such as magazines, papers, and articles, and generalize the system database to contain all area of specializations | Searching for books, articles, publications, materials, and more is made easy by making the library system digital. |

**CHAPTER TWO**

**LITERATURE REVIEW**

**2.0 Origin**

The National Library of Nigeria came into effect in the mid-1960s, with the enactment of the National Library Act of 1964. Prior to the passage of the National Library act, a series of educational conferences conducted in Ibadan laid the intellectual basis for the creation of a network of libraries funded by the government to provide accessibility of educational materials to Nigerians. A government advisory committee was later created due to the necessity for the development of a local repository of knowledge. The committee was charged with finding a way to aid the government in bringing to prominence the intellectual foundations of its policies, creating of a national bibliographic center and providing an arena for the promotion of knowledge. The committee was the first major formal body that called for a National Library as part of its recommendations. The government accepted the demands of the advisory committee and undertook the necessary steps to build a National Library.

**2.1 Preamble**

Librarians and information scientists are imbued to serve people through the provision of access to quality information resources in either print or electronic formats through which people’s standard of living are improved, dreams are actualized, education is sustained, sound decisions are made and executed, freedom of expression is enhanced and information resources are preserved for posterity. The proliferation of information in different formats and the attendant complexity in retrieval processes have promoted and sustained the need for society to share resources, work, ideas and information. This provides the rationale for library and information practice. The belief in the need for human beings to share information and ideas implies the recognition of information rights as expressed in the United Nations Universal Declaration. Human Rights (1948), Article 19 sets out the right to freedom of opinion, expression and access to information for all and the right to seek, receive and impart information and ideas in any media, regardless of frontiers (IFLA, 2011). The library as an institution exists for the benefit of a given constituency, whether it is the citizens of a community, members of an educational institution or some larger or more specialized group. Those who enter the library profession assume an obligation to maintain ethical standards of behavior in relation to the governing authority, under which they work, to the library constituency, to the library as an institution, to fellow workers, to colleagues and to society in general. IFLA, (2011) posits that the core mission of library and information professionals is to facilitate access to information for all for personal development, education, cultural enrichment, economic activity and informed participation in and enhancement of democracy. Librarians do not encourage censorship, denial and restriction of information to anybody by any person or groups of persons and use the most efficient and effective methods and standards to serve their clientele.

**2.2 Contents and kinds of library**

Library Content is a folder within the library that can be organized according to the institution’s specific needs. This area is intended for content that may be shared across the entire institution. By default, all system users automatically have read access to all items in Library Content.

**2.3 Evolution of Libraries in Nigeria**

Evolution involves changes but rather an unfolding of events, a gradual development from a simple or primitive to an advanced system (Ehikhamenor, 1993) Information revolution can be described as fundamental changes in the production and use of information, occurring in the late 20th century.

**2.3.1 Development of Libraries in Nigeria**

The governments of different countries establish libraries for the development of different sectors of the nation for instance their educational, national, economic and public sectors etc. In societies where the government knows the importance of the libraries, they encourage not only the education sector but also the industries to set up libraries for the upward review of their operations. The growth of any organization is directly proportional to the knowledge base of its operations. The origin and development of libraries in Sub-Saharan African countries were influenced by the attitudes of its governing countries Ranasinghe, (2007). The colonial government influenced the establishment of many libraries in African countries. In Nigeria, libraries were introduced by the colonial government and international organizations. The Nigerian government has done little or nothing in the development of libraries in Nigeria. Okiy (2006) reinstated this fact by stating that the general poor attitude of the Nigerian government towards development of libraries has adversely affected the development of public libraries services in Nigeria. The introduction of formal education in colonial countries could be cited as the crucial factor that caused the establishment of libraries, education systems were inaugurated by the colonial government and the missionaries Ranasinghe, (2007). While the government’s aim was to train the personnel needed for the administration of the countries, objectives of the missionaries was propagating the religion.

**2.3.2 Libraries and Education in Nigeria**

Libraries have always served as tools for educational advancement at all level of education Okiy (2006). Libraries and Librarians are meant to agents of changes academically, socially, politically, economically and otherwise. Akanbi (2002) opined that the fact has been established that a well-stocked, professionally staffed school library will assist individualized learning and improve students/pupils’ performance throughout the school curriculum (Shaibu, 1997). They are the tools for propagation of information in all sectors of the nation. It is knowledge that allows people to contribute meaningfully to national development Okiy (2006). She opined that the library is central to the provision of the right type of information resources that empowers the educational institutions to produce highly resourceful people to impact positively on national development. There are profound changes going on in the educational system as a result of ever of ever-growing pressure in the school systems because the society itself is changing into one in which knowledge work becomes more important and partly because of the information communication technologies Wale (2006). He further reinstated that librarians have and can develop further skills to support educational innovation and have the opportunity to act as role models within their institutions. Librarians support educational development for all levels of human development. Okiy (2006) asserted that consequently it is only a nation which is conscious of the importance of libraries and information in the drive towards the accelerated development of a nation that can thrive in the comity of nations of this age.

**2.3.3 Development of School Libraries**

In Nigeria Amongst the different types of libraries, the school library is the most crucial as it forms the basis on which other knowledge is built upon and it is also the one faced with more challenges in the nation. School libraries have remained among the least developed library types in Nigeria Agada (1997). The development of school libraries in Nigeria has been fraught with problems Adentro (2004). Problem areas in the 16 development of school libraries in Nigeria have been identified as lack of legislation, shortage of funds, poor infrastructure, unavailability of trained staff, lack of relevant material, and apathy on the part of school administrators and the government. The influx of information and the use of ICT gadgets in the teaching and learning process have further escalated these challenges. Adetoro (2005) posits that books and audio-visual supplements and enrich the teaching and learning situation in schools. Meanwhile, the development of science and technology has changed the concept of the school library in terms of collection and services, school libraries are presently referred to as school library media resource centers Elaturoti (2009). There is a need for a revolution in our education system and the school library form the basis for this change. Dike (2001), argues that the survival of Nigeria as a viable society will depend on the health of her educational institutions. The revolution of our education system should cut across access to all aspects of the system especially the information and knowledge acquisition in childhood age, and this is where the library comes in. Libraries provide a great deal of information not found in the curriculum nor taught in the classroom. Unagha (2008) noted that when librarians and teachers work together, students achieve more. There have been many programs like the Free Education of 1970-1983, the Universal Primary Education of 1976, and the Universal Basic Education of 1999 organized for the development of education in Nigeria opined Dike (2001) and Unagha (2008). These programs were never sustained, due to a lack of funds necessitated by corruption, and a lack of implementation of policies, among other factors. The Nigerian library community needs, therefore, in addition to lobbying the government, to establish one-on-one partnerships with international and foreign professional associations and institutions to acquire technology Agada (1997). There is a need for the Nigerian Library Association and the Federal Ministry of Education to form an alliance to tackle the challenges that librarians face in libraries but most especially the school libraries.

**2.6 Library services**

**Borrowing:** Using an online library catalog, you can search over 40,000 actuarial books, research papers, and articles. Many documents may be downloaded immediately free of charge. Books and journal articles may be requested online. Books will be sent out by post. Journal articles will normally be supplied subject to copyright regulations.

**Online resources:** The library Portal will give you access to thousands of journal articles, eBooks and databases.

**Enquiries:** We can deal with enquiries either by email or phone. We can search for information, statistics and hard-to-trace references, aiming to respond within 24 hours.

**Literature searches:** Library creates reading lists on actuarial and related subjects. We can also compile lists of references on more specialist topics and carry out literature searches on request.

**2.7 Providing materials for library**

• Provision of materials for undergraduate instruction, term papers, and projects, as well as for supplementary reading;

• Provision of materials in support of faculty, external and collaborative research;

• Provision of expensive standard works, especially in the professional disciplines;

• Provision of materials for personal development;

• Provision of specialized information on the region within which the university is situated;

• Co-operation with other academic libraries with a view to developing a network of academic library resources that is at the disposal of all scholars.

**2.8 Library** **Information and Technology**

What is technology? It is the application of knowledge to the practical aims of human life or to changing and manipulating the human environment. Technology includes the use of materials, tools, techniques, and sources of power to make life easier or more pleasant and work more productive. Whereas, information is facts or knowledge that are provided or learned. Information technology is the study or use of systems such as computers and telecommunications for storing, retrieving, and sending information. Library Information Technology (LIT) is the Library division charged with the design, development, management, and maintenance of a flexible and reliable technology environment, specifically: the development and management of digital collections and access tools; the development of a fully accessible, feature and content rich library web presence that applies user experience principles and strategies; the development and support of server-based technologies for the delivery of library services; the maintenance of library management systems; and the delivery of frameworks and systems to support collaborative storage, delivery, and preservation of information resources.

**2.9 Challenges and problems of web-based libraries**

Computerization, especially in the developing countries, is fraught with challenges. This is also the case with IMT library.

**Poor State of Power Generation**

Regular power generation remains a problem in Nigeria. Frequent power outages constitute a serious bottleneck to automation. The cost of running generating plants is prohibitive.

**Poor Funding of Library Services**

Poor funding is a major challenge to libraries in Nigeria. Academic libraries in Nigeria derive their funds from the government. Although the federal budget provision has moved from 5% of the approved recurrent budget for library development to 10%, the budget of many academic libraries continues to dwindle. A high rate of inflation, low and unpredictable national income, the effects of global economic depression, and local currency devaluation continue to water down whatever budgetary provision is made for academic libraries in Nigeria. Many academic libraries in Nigeria have not initiated viable income-generating strategies to supplement government funding.

**Education and Training**

Most staff in academic libraries in Nigeria were trained in traditional librarianship. They are finding it difficult to cope with the requirements of the electronic age. Staff training and retraining have not been given a pride of place. IMT Library has initiated computer literacy training for all staff, which has had a lukewarm reception. This attitude is a great deterrent to the computerization of library services. These challenges have far-reaching effects on the implementation and sustenance of the automation of library services.

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