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E-Learning through Digital Libraries: The Case of National Open University of Nigeria

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Introduction

Electronic learning, or e-learning, refers to computer-enhanced learning. It also refers to research, learning, and teaching in the digital environment. Tripathi (2007) says that it encompasses courses offered online, courses with face-to-face and online access to course materials, and courses provide access to online discussion forums, notes, and other course materials. E-learning is suited to distant learning and independent study, but can also be used in conjunction with face-to-face teaching, which is referred to as "blended learning." E-learning can also refer to educational websites offering learning scenarios, worksheets, and interactive exercises for children.

The importance of e-learning is growing in higher education. Key advantages of e-learning are flexibility, convenience, and the ability to work at any place where an Internet connection is available and at one's own pace ("E-learning" 2011). E-learning is a viable option for those with commitments or conditions such as family or work, or who cannot participate easily for reasons including disability. The time and cost of commuting to and from campus are eliminated. E-learning provides students with the ability to communicate with classmates independent of distance and can be adapted to learners' needs. E-learning promotes individualized instruction or learner-centred education where students may set their own objectives and explore their own learning needs online.

Learning resources and services are very significant to research and teaching in higher education. The advent of ICTs has completely transformed libraries and information centres. They have emerged as early adopters of new technologies and act as service points for access to digital libraries. In Nigeria, the Information Gateway, the online library of the National Open University, is responding to the increasing importance of e-learning by developing their services accordingly. This paper highlights the status and importance of online resources, online services in e-libraries, online services in National Open University and the implications of National Open University experiences for e-learning in Nigeria.

Status and Importance of Online Resources

Information Technology (IT) infuses all aspects of modern life, and the growth of digital information continues at an unprecedented rate. Higher education institutions have invested heavily in campus IT infrastructure, and educational philosophy emphasizes learner-centred pedagogy, with learner-centred technology widely available in most of the campuses. Lyman and Varian in (2007) estimate that new stored information grew at a rate of approximately 30 percent annually between 1999 and 2002. Dealing with this expanding volume of information and information resources becomes an integral aspect of education policy.

The shift from teacher-centred education has increased the importance of online resources. Students can choose content based on their own learning needs. Perry (2007) says that learner-centred education acknowledges the value of active constructivist learning, including individual learning styles. The student is an active participant in the learning process. Course management systems can be learned to create this environment. Digital library technologies and web-based learning gateways are complementary developments, and include MERLOT (<http://www.merlot.org/>), EDNA (Education Network Australia) online (<http://www.edu.au/edna/page1.html>), National Virtual Library (<http://www.nou.edu.ng>), and the SMETE Digital Library (<http://www.smete.org/smete/>).

Digital resources range from archival documents to historical images to primary source materials from scientific field research. These collections may include specific learning activities or be used as resources for teachers to use. For online resources to be useful, reliable networks, universal access, and a sound IT infrastructure are also needed. Rudatebwa and Stockman (2007) observe that online resources demand electricity, PCs, Internet connectivity, and a network.

Association of Research Libraries (1995) enumerates the importance of online resources:

- The resources will never be out on loan and will be available at anytime, any place, and anywhere;
- Access is provided to more complete set of journals than, in many instances, now exist on many library shelves;
- The cost of tracking the arrival of each journal issue, claiming, and periodical binding will be eliminated;
- The need for added library space may decline.
- Cost of retrieving and reshelving materials will be reduced.

Online Services in E-libraries

Online services in e-libraries have evolved since computers were first used in education. Lang, in Ubogu (2006) identifies the following as core services in e-libraries.

- The collection: a wide variety of materials in digital forms – books, journals, manuscripts, reference works, theses and dissertations, government documents, maps video, images and pictorial materials, music scores.
- The provision of information about the library's services and collection to remote users.
- Access tools: online library catalogues, subject gateways, portals.
- Services: reference services, online tutorials, on demand publishing, electronic reserve-short loan and course packs, electronic course pack, lecture notes.
- Networking and imaging technologies to support and enhance all aspects of library basic operational activities – Z39.50, repository software – Dspace, e-print, etc. Open Archival Initiative (OAI).
- Networking and imaging technologies to facilitate closer co-operation with other bodies.

Expertise within the library for the application of new technologies to library activities and bibliographical research of all kinds.

Other services in e-libraries include:

Library Information

- Mission: What the library intends to accomplish to ensure that the goals of the institutions are achieved.
- Library Policies: These are sets of rules and regulations guiding the processes and use.
- Library Hours: In considering library hours, the convenience of users should be the overriding consideration.

Facilities and Services

- Building: There should be a building to house the library resources and equipments.
- Equipments: Equipments such as computers, Internet connection, and furniture, among others.
- Workshop and Training: Exposing staff to the technical details using the technology and the pedagogy.
- Library Field Trip for Students: Orientating users to the best use of library resources.

Online Services in National Open University of Nigeria (NOUN)

The NOUN library, i.e., the Information Gateway, is a library established to support teaching, learning and research activities of the university. The main library is located at the headquarters of the National Open University of Nigeria in Lagos. The library provides online catalogue, circulation, reference, information literacy, current awareness services, training, workshops, and user orientation. The major aim of the e-library is to facilitate access to scholarly information resources. There are policies that guide the nature of services in the e-library. Facilities are provided to enable library achieve its objectives. The library has a building, which has been renovated to provide services to users who prefer print copies of books and periodicals. The e-library laboratory is equipped with 45 computers, and Internet access.

The library's collection has more than 40,000 volumes of books and 200,000 volumes of electronic resources. It has a growing periodical and audiovisual collection. The National Virtual Library provides an online service center for accessing databases in other e-libraries all over the world. Databases include:

- AGORA (Access to Global Online Research Agriculture). Provides a collection of 918 journals in agriculture and life sciences to institutions in 107 countries.
- Bibliomania: Collection of resources in various subjects
- Boline InternationalL Features 30 peer-reviewed journals from some countries of South America, Asia and Africa in Health sciences, Biodiversity, Environment, Conservation and International Development.
- BLDS (British Library for Development Studies at IDS-Institute of Development Studies). Europe's largest research collections on economic and social change in developing countries.
- Chemistry Central: This is collection of peer-reviewed open access research and journals in chemical sciences (<http://www.nou.edu.ng>.)

Hagner in Perry (2007) identified five areas that affect levels of faculty engagement: training, grants and start-up resources, technical support, assessment, and communication. These are all vital to a implementing a technology-based learning environment. User orientation is crucial to the services in the library. Users need guides to access the resources of the library. The university library is pursuing the new millennium integrated library system goal, which makes libraries access providers for digital resources and expertise.

Enabling Technology for the National Virtual Library

The National Virtual Library services and digital resources are delivered over the Internet which depends on network operating systems running on web server computers. Web servers provide support for special web server extension or modules used by digital library software (Dahl, Banerjee and Spalti, 2006). Storage of electronic resources is either on a local server maintained by the library or parent institution a remote server hosted by the vendor. Limits of network bandwidth and slow transmission speeds may make effective access a problem.

Implications of National Open University Experiences to E-learning in Nigeria

NOUN is Nigeria's only specialist provider of open and distance learning at the tertiary level. NOUN is the country's largest tertiary institution in terms of student numbers. It serves about 32,400 students through a network of 28 study centres distributed in the six geo-political zone. It offers more than 50 programmes and 750 courses, from certificate to diploma and degree level, and maintains a strong commitment to internationalization. NOUN consults with industry and employers in developing courses and brings international programmes from universities around the world. This requires an effective e-learning system. E-learning changes the approach from presentation (teachers); to practice (students); to communication (group); to interaction (real world); and to collaboration (community) (Logofatu, 2005). E-learning has brought about the transformation of an old pedagogy to a new one. Table 1 shows the transition, from old to new pedagogy.

Table 1: Pedagogy Transition

Old Pedagogy	New Pedagogy
Compulsory	Voluntary
Teacher-centered	Learner-centered
Minimal learner control	Education as freedom
Training for life	Assimilation of learning with life experiences
Convergent thinking	Divergent thinking
Rote Learning	Active learning
Depends on educators learning	Depends on learners needs for learning
Imparting, information	Opens vista for continuous learning

NOUN is making an excellent contribution to Nigeria's Universal Basic Education effort and Education for All Programmes. The use of multimedia and the interactivity that computers connected to the Internet afford has led to the creation of much richer learning environment (Bauer, 2005). These new technologies enhance communication between learners, and between new learners and teachers. The e-learning strategies of NOUN have made a great impact in e-learning in Nigeria.

NOUN designs programmes that provide a quality framework for lifelong learning in Nigeria. The programmes promote new learning methodologies and help standardize training methods. The Virtual Library of the National Open University of Nigeria, having formed a consortium with other Open University libraries in Africa, and provides access to varied resources to its many users. The Information Gateway has more than 30 databases and offers access to more than 1,000 journals and many other types of information. There is an opportunity for many Nigerians to join the mainstream of development and contribute to building a knowledge society. The libraries and information centres have a pivotal role to play in supporting and promoting e-learning in the country.

Recommendations

After reviewing NOUN's online services and its contributions to e-learning in Nigeria, the following recommendations are suggested to enhance e-library service delivery:

- In case of low and poor bandwidth, offline multimedia materials can be used.
- All user requirements must be taken into consideration in planning e-learning strategies.
- Collaborative efforts should be intensified.
- Should establish good contacts with the ICT department of the university.
- Should state clearly to the university management the importance of e-resources for improving studies and research in order to ensure sustainability.
- Statistics of usage should be compiled and presented to university management.
- Should create awareness among library users of the resources available by using brochures, newsletters, posters website, etc.
- Should maintain continuous upkeep of the databases and links.
- User orientation should be intensified through workshops, online tutorials, seminars, conferences to promote awareness.
- Should develop a digital resource centre for Distance Education.
- A consortium of Open Universities Libraries should be formed with more libraries all over the world.
- To provide more update resources and services to improve the facilities for accessing e-resources.

Conclusion

The demand for e-learning is growing day by day. As a result, library services have taken on another dimension. Librarians and academicians should collaborate to evaluate and provide links to authoritative web resources related to programmes and courses taught. They may develop a portal for providing a seamless integrated access to e-collections. The enabling technology infrastructures for building a virtual library must include stable electricity and upgrading or installing a high speed internet connection to support a variety of services, such as web servers, proxy servers for remote access, FTP Servers for uploading and downloading large file, with appropriate digital library software. System librarians need to be trained or employed. Finally, the library should conduct online tutorials for

improving the information searching skills of the e-learners and so doing, contributing greatly in improving e-learning in Nigeria.

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