

REDESIGNING LIBRARY AND INFORMATION SERVICES FOR IMPROVED TECHNOLOGY EDUCATION: IMPLICATIONS FOR NIGERIA'S VISION 20:20:20

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Abstract

This paper addressed the issue of re-designing library and information services to enhance the improvement of technology education especially as it affects the attainment of the vision 2020. Considering the relevance and contribution of library to education as a whole and to technical education in particular; and also the vital role that technology education has to play in the attainment of Nigeria's vision 2020, the writer saw it necessary to put up this paper. The paper took note of the recognition made by the current Minister for Education, Dr. Sam Egwu and the current Minister for State; Education, Hajiya A. J. Dukku, who acknowledged that improved technology education is the main way out for Nigeria to attain the level of development required for her to become one of the 20 most developed nations in the world by the year 2020. The paper looked at the concept of technology and technology education and its relevance to development. It also looked at the library and information services required to enhance technology education; such services as reference and information services, circulation services, internet services as part of reference services, and the selection and acquisition of print and non-print reading materials. Some recommendations as way forward for improving technology education through improved library and information services and resources were made.

A library which could be described as a place where books and other forms of human records are professionally acquired organized and made available for use (Ogbonna 2000); has from ancient history been the mainstay of information and knowledge. In recent times, science and technology have given rise to a non-physical form of library – the virtual library; where information from distant areas could be electronically accessed by users from other different locations. This confirms Buckland (1997)'s assertion, that the central purpose of the library is to provide a service – access to information. While there exist many types of libraries- national, academic, special, public, special and even private libraries, all of them are designed to make provisions in one way or the other for the educational needs of both educators and learners. This they do by acquiring a wide range of materials in print and non-print/audiovisual resources to support learning and education at all levels and in all disciplines. Technology is one of the key disciplines of human knowledge that is moving the world.

Technology could be discussed in different ways – as objects; that is

The Nigerian Journal of Research and Production Volume 19 No 1, November, 2011

physical devices of technical performance; as knowledge – the know-how behind technological innovations; as activities and as a process of manufacturing by people using their skills, methods, procedures etc. Wright and Lauda (1993) included these elements in their definition of technology as a body of knowledge and actions, used by people to apply resources in designing, producing and using products, structures and systems to extend the human potential for controlling and modifying the natural and human-made environment.

The need to improve technology education from all angles especially through improved library and information services cannot be over emphasized. Our democratic society is characterized by rapidly advancing technological developments. It is absolutely necessary for all people to understand technology in order to function as production workers, informed voters and wise consumers of technological products services. That is why Dukku (2009) noted that Nigeria may not achieve the vision 20:20:20 and become one of the twenty most developed countries, if she fails to invest heavily in the development of technology and vocational education in the country. She firmly said that Nigeria has no options other than to “invest heavily” in these, stressing that this is the only means of becoming one of the developed countries in the next 11 years. Further attesting to this, Egwu (2009) said plainly that creating an environment conducive to science and technology development means contributing to national well-being of the country and are congruent with the vision 20:20:20 of Nigeria. All these prompted the writer to put up this paper so as to emphasize on the place of library and information services as one of the required steps to improving technology education.

The Concept and Relevance of Technology Education

While there are many definitions of technology (Dyrenfurth, 1991), it is usually oriented towards a product design and problem solving model; on control over the “human-made and natural environment” to better meet human needs and wants (Wright and Lauda definition above recognized these). Volti (1995) also saw technology as a system based on the application of knowledge; manifested in physical objects and organizational forms, for the attainment of specific goals. Technology spring from the human abilities to reason, solve problems, create, construct, and use materials imaginatively.

Technology education according to the North Dakota State Board for Vocational-Technical education (1996) is an integrated and comprehensive, experience-based instructional program which learners/students learn about technology – its evolution systems, techniques utilization and social and cultural significance. Having seen technology as the application of knowledge, tools and skills to solve practical problems and extend human capability also by the American Association for the advancement of science, (1989) it can be stressed that technology education results in the application of mathematics and science concepts in technology systems. Technological literacy, they said, also is the

ability to interact successfully on everyday life; make appropriate decisions and to apply conceptual knowledge in solving problems.

Technology education was also seen as the study of how people modify the natural world to suit their own purposes and generally refers to the diverse collection of processes and knowledge that people use to extend human capabilities and to satisfy human needs and wants (Standards for Technological Literacy, 2000). The library being the key organizer of knowledge embedded in reading materials and information services, plays a significant role in successful technical education.

Library and Information Services and Resources to Assist in Education

The central purpose of the library is to provide a service: access to information. As Buckland (1997) has it, libraries exist for the benefit of the mind, but they have serious practical problems coping with the acquisition, storage and handling of the documents and records with which they deal. The good news is that additional, different means for providing library and information services are becoming available in a manner unprecedented since the nineteenth century. The challenge for all concerned with libraries is to determine how, whether, and when these new means should be used.

Access to means of education has become the key issue in education. Heautecour (1997) made this clear when he remarked that among the greatest challenges facing education in Africa as a whole is ensuring that means of education are made available to every individual who must have it. The library is there to provide these means through their human (staff) and material (books, electronic and audio-visual) resources and services as well. The International Federation of Library Association and Institution, IFLA (2001) clearly appreciated the role that the library plays in enhancing all forms of education. Some of the core library and information services provided by the library in support of technology education and research are

Readers' Advisory Services- : This is a key service provided by the libraries to ensure adequate utilization of their resources. This deals with educating the user who may not be able to find his way through the library, on the search, location and use of the library materials. Audu (2006) recognized the need for the library to be user friendly through user education so as to enable them make adequate use of the library resources.

Selection and Acquisition of Materials-: Selecting and subsequently acquiring reading materials in both print and non-print format are in the mainstream of library and information services. As IFLA (2001) put it, large collections are not synonymous with good collections, particularly in the new digital world. The relevance of the collection to the needs of the local community is more important

than the size. The materials have to be selected in accordance with library users' demands.

These materials are in turn processed by the librarians to ensure easy access to them. The materials like books are accessioned after which they are classified and catalogued. These activities will enable the users locate the books through their classified subject fields and assigned class numbers according to which they are arranged on the shelves. Buckland (1997) noted that the library catalogue is being redefined to enhance bibliographic access to library and information materials in subject fields. The on-line catalogue being created; for e.g. OPAC – the on-line public access catalogue. In the same vain, even in selecting and acquisition of materials all could and are being done electronically on-line. All these are being facilitated with the use of Information Communication Technologies (ICT) which he noted are shifting the traditional paper library to automated and electronic library.

Circulation Services-: Ensuring that the readers get to the desired materials is a major objective of any library. The charging and discharging of books in the library support teaching and learning immensely. These services ensure that the users get their needed materials for use both within and outside the library. Charging and discharging of books to the users have to do with borrowing out needed books to users and receiving them back on the stipulated date. Interlibrary loan services are also provided to ensure that the reader gains access to any needed material on demand. Libraries do share their resources in this manner so as to serve their users better. A book or other resource not available in a particular library could be arranged for from other libraries. All these services are being changed these days from manual to automated services especially in the advanced countries of which we the developing countries are striving to emulate.

Reference Service-: This is a very vital library and information service to be provided in any library. This is because it has to do with ensuring that the users gain access to useful materials that immensely support research and education. Research, experimentation and problem solving are the backbone of success in technology education. A reference work has been described to mean a compendium of information usually of a specific type compiled in book (Wikipedia, 2008). Such works as maps, dictionaries, encyclopedias, atlases, handbooks/manuals. Journals and other periodicals are all reference materials. These are the types of library materials that people in the field of science and technology need because of their continuous and recurrent nature and currency; thereby containing “state of the art” information in these fields. Van fleet (2007) confirmed that the reference librarian interpret questions, provide information to users and offer guidance in the use of library and its resources.

Internet Services – Ezeani (2005) stressed that internet services are very useful and indispensable parts of reference services especially with the recent developments and explosion of information in the field of science and technology. Users of the library no longer rely on the physical libraries within their vicinity alone but reap a lot from the wealth of knowledge from other libraries from far and near (Anyakoha, 2005) – virtual libraries, from all over the world through the internet. The contribution of internet and its wide range of current information to today's technological research and education cannot be overemphasized. The internet brings information about uncountable researches and innovations in different fields of knowledge all over the world, to the doorsteps of the researchers. Services provided by the internet section of the library include- E-mail, browsing for information and researches, and literature searching, on-line registration for local and international examinations, retrieval of results and a whole lot more. The internet has come into other aspects of human life like banking, enterprising amongst others.

Current Awareness Services- Both students, teachers, researchers and professionals in many fields of knowledge; more especially in the field of science and technology, need to have updated information on recent or current developments, inventions, discoveries, researches and publications in their areas of specialization. Libraries as key information service providers are seriously readdressing this aspect of their service. Such services could be carried out with the aid of newspapers, magazines, journals and other related materials.

Indexing and Abstracting Services- These are done to provide necessary information as to which articles are located in which journals. Readers and researchers could access journal articles using index which provide bibliographic information/details of the various articles. Abstracting provides the summaries of the contents of the journal articles accompanied by the bibliographic information. Indexes and abstracts are very useful to researchers and scholars in the field of science and technology.

Selective Dissemination of Information (SDI)- This is a special type of library and information service where special information is provided to meet users' needs. It is ensured that every interested user's area of interest is defined and compiled into relevant search terms which are used to conduct searches using the computer and key words that represent documents and their location. Whereby any document is seen to match the user's profile, an abstract is sent to the user. This service is usually carried out on request.

Reprographic Services- These are very important in the library. As Ogbonna (2000) puts it, reprography refers to the reproduction of document by electronic techniques. Photocopying is a prominent reprographic service provided by the

library. This helps the users to lay hands on different materials they cannot use within the library.

Human Resources in the Library

For the library to deliver adequately its services, its human resources which are the staff cannot be done without. The library staff ranges from the professionals (librarians) to no-professionals like the library attendants. In the words of Ohio Libraries Staffing Task force report (2002), the future ad survival of the library still rest with its most valuable and indispensable resource – the staff. Youngman (1999) also asserted that library staff should these days develop and acquire new skills that are required to support both technology-based and traditional services of the library.

Library Services and Resources Redefined for Improvement

The new information age which we are in has touched all aspects of human endeavour. It has touched both education systems and the library as well. Many library users according to Anyakoha (2005) are now adopting electronic habits, and are making increasing use of the internet; libraries are being swept along with the currents of rapidly changing information communication technology. While continuing to provide many traditional information services, librarians are developing new skill sets and growing into the new roles that are necessary to support technology-based services. The introduction and use of electronic information resources and technologies in library operations should be the priority of any library today that wishes to provide reasonable support for technology education (the learners, educators, professionals and researchers alike).

The mission of the librarian – providing excellent information services to patrons has not changed, but technology has added several new dimensions to this task (Grodzins-Lipow, 1997). All the library services discussed above are being fine-tuned to suit the information demands of today’s users.

- ❖ Acquisition librarians for instance in addition to selecting and purchasing books, now must deal with what Youngman called “access without ownership” issues involving leased electronic databases, full-text journal article access services and other services acquired virtually.
- ❖ Cataloguers not only process books these days but also CD-ROMs, computer discs, and multi-format items. Cataloguers today create records that accommodate multiple means of accessing a particular resource. As technology advances, Osorio (1997) saw reference librarians as teachers of information literacy; serving patrons within the library as well as remote-access users through electronic means.

Factors Militating Against the Provision of Adequate Redesigned Library and Information Services

Certain factors make it difficult for libraries in developing economies like Nigeria to deliver redesigned services to their users.

- Academic, public, special and other libraries are affected by the financial squeeze- lack of fund in the depressed economy (Nzotta, 1994). They cannot upgrade their services from manual traditional methods to the automated form because of fund to install full electronic gadgets. The libraries' inability to train and re-train workers to acquire new information retrieval and processing skills also brings set back. Just as Ademodi & Adepoju (2009) noted that librarians in many Nigerian libraries, still carry out library routines and functions manually and the few computers in most libraries are used for administrative duties by confidential secretaries.

- The poor status especially of ICT and related facilities in most libraries also causes setback as was lamented by Achebe (2005) in the case of public libraries. Many college and polytechnic libraries share the same picture. It is only few university libraries that have ICT facilities but not to full capacity – University of Nigeria library, University of Jos library, University of Lagos etc.

Conclusion

Science and technology, coupled with adequate information flow are the catalysts for the development of any society in today's world. Reasonable technological advancement cannot be attained without sound technology education. Sound technology education can only be achieved using current print and non-print information resources to aid studies and researches. The library being a key reservoir and provider of such services, resources and information materials must be there and its services improved and redefined. Since technology education starts from elementary levels to higher schools, all libraries ranging from school libraries to university libraries as well as public libraries should brace up for the challenge. Through a good number of library and information resources and services, the requirements are met for sound technology education and research which will definitely accelerate the rate of the development of Nigerian economy; thereby realizing the stipulated vision 20:20:20.

Recommendations

Considering the role that sound technology education has to play in enhancing development and the supportive role of the library and information services to technology education, it is highly recommended that

1. The government (both state and federal) should make adequate provisions for improved library and information services. This should be done by equipping the various types of libraries ranging from institutional to public libraries.
2. In addition to equipping the libraries with adequate reading materials, required electronic and information communication technology equipment should be provided to support their services.
3. The library authorities and librarians on their own should put in their very best in adapting to the new ways of providing library and information services to the users. This should be done by acquiring new skills in different facets of library service.

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