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# BLENDED (E-LEARNING) ENVIRONMENT FOR SUSTAINABLE DEVELOPMENT: THE ROLE OF DIGITAL LIBRARIES

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# **BLENDED (E-LEARNING) ENVIRONMENT FOR SUSTAINABLE DEVELOPMENT: THE ROLE OF DIGITAL LIBRARIES**

## **Abstract**

Rapid advances in Information Technologies (ICTs) have acted as a catalyst for educational information, and are making strides in the advancement of education. Blended learning environment improves the quality of education because it deals with designing and delivery of the right content in the right format using the right mix of media which have changed most patterns of traditional services and information processing and handling as well as information dissemination to suit the changes in the global village. This paper is an expository one that explores blended learning via digital library, reasons for blended learning, blended learning environment and national development as well as benefit, advantages, disadvantages, challenges, and it recommended that blended learning environment should be encouraged in all institutions. It also state clearly the importance of e-resource management for improving studies and researcher work in other to ensure sustainability and concluded that librarians must extend services, methods and practices, developing innovative approaches to guarantee free and universal relevant information, and to ensure that the world's citizenry have access to the information for development and growth of the society and for participation in this democratic processes via blended learning environment.

**Keywords:** Blended Environment, E- learning, Development, Digital Libraries

## **Introduction**

Blended environment is a national campaign under the foundation of excellence in education, to advance policies that will create a high digital environment to better prepare people with the knowledge and skills to succeed in their careers. Blended environment refers to computer-enhanced learning. It also refers to research, learning, and teaching in digital environment. Blended environment is building a support for high quality digital learning which provides a roadmap for reform for lawmakers and policy makers to integrate learning into different sectors of the country for sustainable development. (Tripath, 2007 in Otubelu, 2011). Blended environment is not all that new in Nigeria but it is not well utilized in all sectors of the nation even with all the facilities available. Blended environment makes access to information quick and easy because quick access to information liberates man and shape the future of the nation and the world in achieving the development goals.

Development of hybrid technology environment and successful blended environment inform society. However, 21<sup>st</sup> century libraries are information centers powered by information in all ramifications. They harness information explosion both on print and non- print in which the internet and its associated technologies are being used to take advantage of the immense knowledge of man in different fields of knowledge all over the globe for the benefit of faster development of society. Materials become dynamic when it reaches people in the society. In other words, hybrid technology on the internet via digital libraries can reach and engage people in the society in a truly customizable way and exposes them to positive thinking. Blended environment can also increase people's ability to work and learn from others who are distant in time and location. It also supports and expands the sociocultural links that help to give us intellectual identity. (Margaret, Kathleen and Kappan, 200).

BLEND is the acronym for Bergen Learning Environment for National Development which helps to sustain a network computer learning environment that constitutes a micro society for real planning settings where policy makers play roles in a stimulated government for sustainable development. (Alassi, Pederemi, Birgit and Davidson, 2007). It is based on incorporating ICT in to different ways of approaching knowledge acquisition, problem solving, and operation in the workforce of the society. It also allows people to incorporate modern communication and collaboration techniques while providing access to an increasing body of knowledge via online libraries. Libraries in our society have many goals and functions.

Libraries collect and echo the human spirit. Books and manuscripts are all documents of the workings of human thinking and activity which is seen as important Information that is crucial for sustainable development.

Their information selected and shared has received rapid attention by people due to digitalization. This encourages people to make connections between the virtual collections regardless of the physical location of books and manuscripts. This provide enablement environment for librarians to communicate the type of electronic information resources people want in the society. This helps to promote and maintain the evidential value of information for sustainable development. It has been observed over time that access to information and knowledge via ICT facilities in the society by people is very poor due to poor accessibility and connectivity and information overload. It is against this backdrop that this study is focused on blended (e-learning) environment for sustainable development: the role digital libraries.

## **LITERATURE REVIEW**

The role of the library is significant in supporting digital environment to enhance educational and other sectors of the nation. One area that has experienced phenomenal changes as a result of the use of internet technology is education. The concept of blended environment is to transform the environment in which the information society is developed. 21<sup>st</sup> century libraries have improved their e-services and have integrated the use of ICT facilities into various library management and administration, processing of material, developing on-line resources, accessing on-line resources, developing off-line resources, provision of regular operations and services to people in the society, inter library co-operation and lending, and video conferencing.

Amin & Gerbic (2010) stated that researchers have attempted to define and explain the concept of blended environment. Blended environment is a term increasingly used to describe the way e-learning is being combined with traditional classroom methods and independent study to create a new hybrid teaching methodology (Mindfish, 2012). Davidsen (2007) sees it as the use of information and communication technology in diverse processes of education to support and enhance learning institutions, organizations and the society as a whole which also includes the usage of ICT as a complement online learning environment or mixing of two modes. Otubelu (2011) explains that blended learning is computer enhanced learning which also refers to research, learning and teaching in digital environment, he further said that blended learning can also be referred to as e-learning which is also called hybrid learning. It represents in many cases, a fundamental change in the way people in the community make use of use of the ICTs for sustainable deployment in their society.

Blended learning according to Clayton Christensen Web (2015) is a formal education program in which a student learns at least in part through online delivery of content

and instruction with some element of student control over time, place, path or pace. It also sees as hybrid or blended education that integrates online with traditional face-to-face class activities in a planned pedagogically valuable manner (Te@thought, 2013). Singh (2013) considered it as a combination of face-to-face and online tutoring that is consistent across models. He further explained that blended learning is also a combination of multiple delivery media designed to complement face to face online application learned behaviour. Throne (2003) is of the opinion that it is a way of meeting challenges of tailoring learning and development to the needs of individuals by integrating innovative and technological advances.

Mosial, et al (2004), views blended learning environment as a pedagogical approach that combines the effectiveness and socialization opportunities. The British Educational Communications and Technology Agency (BECTA) described blended learning environment as a combination of face to face and online delivery with the believe to suits a wider range of learning styles, similarly, it is also refers to a strategic and systematic approach to combining times, and modes of learning, integrating the best spaces of face-to-face and online interactions for each discipline, using appropriate ICTs which also suggests place and space, a school, a library, a classroom which are interconnected and technologically driven. (Partnership for 21<sup>st</sup> century skills 2007).

### **Blended Learning via Digital Libraries**

In our society today, libraries are always looking forward for innovations to support preservation, teaching and learning development via ICTs, digital libraries and virtual libraries. This era of globalization and information knowledge has given libraries in 21<sup>st</sup> century the room for blended learning environment which pose challenges to all libraries on how to better institutions and organizations in their collection, and

preservation of information is based on records for sustainable development in Nigeria. (Norasieh & Gerbic, 2010).

Digital means “digital technology”, that is, modern information communication technology (ICT). This includes computers, mobile phone and other interconnected devices. The name DIGITAL means that the collection is on a binary format and stored on an electronic device. Digital learning is a center whose material (books, journals, reports, objects, images, thesis, and so on) is stored on electronic format on (CD ROM or Winchester). They can be read and printed through a computer via internet. Its services consist of the provision of various content and information services which can be accessed within a country and from different parts of the world. Libraries in the nation have becoming increasingly digital, their future role and challenges is well articulated in the concepts such as blended activities.

The vision of libraries in this digitalized era is one of an increasing integration, services and practice into preservation, teaching, learning and research work for sustaining development process. This include the challenges of improved support for citizens of the country by reaching out to them by integrating the libraries into their knowledge spaces and also helping library to showcase what they have and how they can be used positively to develop and sustain their country. Libraries supports citizens and the nation to overcome current physical limitations through blended flexible best of breed system to communicate, collaborate and learn on line (Kistow, 2011).

However, digital library as an open approach to blended learning environment or e-learning environment is a method which combines diverse electronic models and takes advantage from every sort of technology. It extends its services for e-learning beyond the traditional print and electronic resources. The concern for retaining the evidential value of records has placed library in the community at the vanguard of

research and development in digital preservation and authentication for sustainable development. .

The internet has become one of the vital tools for both libraries to bring together people in different places and time zones with multimedia tools for data, information and knowledge management in order to expand the range of human capabilities. In support of this, Wang, Lin and Tang (2007) stated that the development of multimedia and information technologies as well as the use of internet as a new technique of accessing, teaching, learning and research has made a radical changes in the traditional process of library services and part of these changes is rendering face to face and online component services.

The opportunities arising out of digital libraries has revolutionized Nigeria. Information explosion is a powerful tool which can be used to transform the existing social framework into a just and equitable one. It is well known that many people in Africa most especially in Nigeria prefer access to information and opportunities to keep abreast information on the happenings in the urban and rural areas of the nation in order to function well in the society and also to educate themselves. Without the ability of citizens to use technology to efficiently acquire, organize, retrieve and use it to support policy making and the development process, it is a lost to the nation.

Information access for blended environment is very vital in Nigeria. Thus, human capital must be developed in our educational institutions or organizations at all levels through the use of information centers that are well stocked with up-to-date electronic devices through which they can acquire the skills needed to access, refine and utilize information for sustainable development processes.

This component services includes online services which could be an integrated learning system and it could be offered synchronously (as the teacher is teaching) or



asynchronously (accessed any time) which could be available in digital forms during and outside face to face presentation. Asynchronous online learning can be offered within a scheduled time frame, for example, libraries can use ICT environment for exhibitions, conferences, workshops, and seminars to facilitate communication between people in the society. Since their collections can be repackaged and presented online via internet (Algahtani, 2011). Also, synchronous blended learning online environment enhances what can be accessed, practiced and shared face to face activities where people interact and access the online content at the same time. For example, digital library provides database program and management system application to provide needed services to people online through e-books, e-journals, model applications, etc.

Digital libraries deliver their services and resources over the internet via network platforms. People can access video to track important information resources and interact with librarians, information managers and peers and review other supporting materials like PowerPoint presentations on research activities that can sustain national development of a nation. From the above, it is of the opinion that digital libraries enhance blended learning environment or e-learning environment in bridging cultures of the people, the nation and expose them to effective thinking, new innovations and ideas towards national building for sustainable development of any nation (Jamlan, 2004).

### **The Basic Reasons for Blended Learning Environment (e-learning)**

A situation where face-to-face oral communication and the online written communication are optimally integrated so that the strengths of each are blended into unique learning experience congruent with the content and intended educational pursue (Garrison and Vaughn 2003). Spender (2001), highlighted the following

reasons for adopting and implementing blended learning into the society for sustainability development:

- \* It has become an ideal delivery vehicle for educational, learning and sustainable development process.
- \* It offers both teachers, librarians, learners and other people living in the society access to information rich resources at anytime and anywhere that will be of help in sustaining the development of the nation.
- \* It can reach those previously denied access (e.g. users with physical disabilities).
- \* It can augment traditional classroom offerings, thereby freeing up valuable resources and expanding the offerings to greater numbers of campus based students.
- \* It can help in showcasing the richness of our culture and heritage that can sustain national development internationally.

### **Blended Learning Environment and Sustainable Development**

Growth in any nation is very crucial and serious to the fuelling and development of any nation. Despite our human, material and natural resources, Nigeria has not been able to achieve significant development. In order to stop rural sluggishness, joblessness, and growing disparities in less developed country like Nigeria where growth is difficult to achieve, libraries is said to have all information needed to develop a country and a nation as a whole. Apart from using digital libraries in enhancing blended learning environment to improve preservation, teaching and learning in the society. Libraries in 21<sup>st</sup> century is seen as a learning and knowledge center for people as well as the intellectual commons for their respective communities, where, to borrow the phrase from the key stone principles, people and

ideas and interact both the real, digital and virtual environment to expand learning and facilitate the creation of new knowledge for sustainable development (Lee, 2005)

Blended learning environment facilitates access to information in all spheres of life through ICT facilities to keep abreast of current knowledge and trends that is critical in sustaining national growth of the society. It provides access to information resource and sharing strategies from electronic and digital resources in concert with information as regards society's wealth and accumulated knowledge for information seekers to discharge their duty to their respective nation.

In an environment where information is available via internet in a society, it helps to facilitate the successful participation, cooperation and implementation of all societal activities in different sector of the nation. It can eradicate poverty in any nation provided the right information is acquired and that is why libraries are critical provider of information which serves as a spring board for innovation and change.

Now that Nigerians are clamouring for change, right information must be given to all ages, genders, ethnicities and social economic groups regardless of who they are for them to be able to position themselves in the right place at the right time to do the right thing in developing the nation and that is why information supply by blended learning environment must be accurate and timely.

Blended learning environment via libraries empowers citizens through information literacy, social networking, enabling access to information and facilitating the full participation of all citizens in societal activities that can sustain the development of a nation. It also provides information to create partnership and opportunities for convergence with commercial/ private enterprise, cultural institutions, societal

stakeholders such as health workers, telecommunication companies, and textile companies etc. to foster employment and development of the nation.

### **Benefits of Blended Environment via Digital libraries**

Digital library is an open access to blended learning environment which enables users to find information that exists elsewhere on a network and because of its unique nature, students or researchers can as well at any time or any place gain access to an electronic or digital library by using Wi-Fi or a local internet service provider.

However, several studies have shown benefits, importance and advantages derived from blended learning environment or e-learning environment. According to Hameed, Badii, and Cullen (2008) Freeman and Patel (2008), Tedd (2008) and Algahtani (2011).

- \* It enhances the efficacy of knowledge and access to huge amount information as regards sustainable development.
- \* It allows learners/students and other people in the society for discussion among themselves over the internet at different time.
- \* The adoption of blended learning environment provides flexibility of time for people to access information at their leisure time with well-equipped place like library or receipt of according to learning information.
- \* It transforms people, knowledge, skills and performance.
- \* It is cost effective in the sense that there is no need for the students or learners to travel.
- \* It allows people to use information technology and the internet to learn improve their learning skills and strengthen their capabilities in contributing their own quota for sustainable development the information society.

- \* It helps learners to become motivated, eager or learn and be creative.
- \* It allows people to be well equipped with suitable information on health issues and prevention procedures to save lives in order to have healthy people and healthy nation
- \* It exposes students to the knowledge of online literacy in teaching, interactive video conferencing or online teleconferencing which involves facilitating face to face learning.
- \* Institutions also benefit from blended learning environment because it enables them to utilize online learning technologies.
- \* Provide citizen with infrastructures for education and training for manpower development for such citizen to live as a responsibly in contemporary society.
- \* It improves quality of teaching, makes learning more effective and promote marketing tourism sector (World Bank, 2004).

### **Disadvantages and Challenges of Digital Libraries in Blended Environment for Sustainable development**

Information Communication Technologies actually changed the face of libraries in terms of information acquisition and storage as well as the methods rendering services to students, teachers/lecturers and researchers in different fields of knowledge and the nation as a whole. There are disadvantages of blended learning environment which are listed below:

- \* It may lead to congestion or heavy use of some websites and this may bring about anticipated costs both in time and money.

- \* It may also deteriorate institutions' socialization role within and outside and also the role of institutions as the directors of the process of education which is not good for sustainable development.
- \* Lack of computer and literacy skills
- \* Pure scientific field that include practical cannot be properly study through blended environment due to lack of accessibility and connectivity.
- \* It makes people undergo contemplation remoteness as well as lack of interaction or relation to what they need as regards sustaining national development.
- \* Limited wireless coverage also discourages both students, lecturers, researchers even people living in a remote areas in achieving blended learning environment.
- \* People with special needs like the blind living in the society cannot make use of it except they are being catered for specially.
- \* Bandwidth performance may also hinder users' access when it is problematic.

However, apart from the blended learning environment disadvantages discussed, the challenges faced by digital libraries in making blended environment possible is hereby highlighted by Ajegbomogun (2011):

- \* Lack of accessibility and connectivity: This discourages users to use digital libraries.
- \* Lack of power supply :This can paralyze economic activities of the nation and render projects unrealizable and this have made most digital libraries in Nigeria not functioning effectively due to ineffective and irregular power supply.
- \* Lack of human resources.

- \* Lack of maintenance culture: This renders infrastructures and equipment like ICT facilities non-functional.
- \* Poor funding: This affects effective library operations.

### **Recommendations and Conclusion**

The following recommendations are made to improve blended learning environment awareness of resources available in the library and to also have access to information resources in the library.

- \* All users' requirements must be taken into consideration in planning blended learning strategies.
- \* In case of low or poor bandwidth libraries should make offline multimedia material available for people.
- \* Libraries should maintain continuous up keep of the database and links.
- \* Blended learning should be encouraged in the society in stating clearly to all organisations and institutions management the importance of e-resources for improving research work in other to ensure sustainability.
- \* There should be good collaboration between ICTs provider and institution libraries.
- \* Libraries should create awareness of the e-resources available by using brochures, newsletters, posters, websites, text messages, etc. among library clientele and the society.
- \* There should be provision of more update resources and services to improve the facilities for accessing resources for sustainable development.
- \* Libraries in institutions should ensure that ICT equipment and facilities are maintained regularly to ensure smooth service delivery to people.

- \* Provision of constant electric is very important to eliminate the issue of unreliable power supply.
- \* Finally, adequate funds should be given to the library to ensure effective library operations.
- \* Government, private sectors, and development agencies must work hard in reviving our libraries by equipping them with good and adequate ICT facilities with good accessibility and connectivity and that will help people access the needed information because it is an essential pillar of sustainable development.

## **Conclusion**

Information Communication Technology are indispensable and have been accepted as part of the contemporary world especially industrialized societies. Through ICTS blended learning has become a key tool that is revolutionizing the instructional process. It involves a blended approach to learning, teacher skills and aptitude of students, teachers and researchers. Its effective use enhances students' ability to identify search effectively and present specific information in order to build knowledge and develop critical and creative thinking pertinent to their fields of study and pertinent to the development of their nation. Rojkoomar (2010) concluded that there is need for libraries to recognize the changes that have already taken place via ICTS and to be aware of the ways in which broader societal changes are affecting institutions since access to information or knowledge is critical, librarians and archivists must extend services methods and practices, developing innovative approaches to guarantee free and universal relevant information, and to ensure that the world's citizenry have access to the information for development and growth of the



society and for participation in this democratic processes via blended learning environment.

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