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**EXPLORING OFFLINE AND ONLINE EDUCATIONAL RESOURCES
FOR PRIMARY SCHOOL INSTRUCTION IN NIGERIA**

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Abstract

In this era of knowledge-based economy, one of the areas of assessing a nation is its growth in the use of computer. The purpose of this paper is to explore offline and online educational resources for primary school instruction, so as to improve learning of pupils, and the traditional means of instruction to the use of Information and Communication Technology (ICT), as a means of instruction. The concepts of offline and online learning processes were discussed. Literature was reviewed on the concepts, from current authorities in the field of academics. Moreover, the implications for using offline/online educational resources as a means of instruction were itemized, such as cost effectiveness and time saving, flexibility, availability, among others. Also, the effective ways of using offline/online as a means of instruction were discussed. These are: mastery of the subject matter, which should be attractive, the platform should be easy to navigate, and there should be enhancement of contact so as to improve communication between the teacher and the pupils. Recommendations such that government at all levels and private individuals should subscribe to offline and online so as to reduce cost and to save time were made. Moreover, teachers are to be trained on the effective ways of handling these educational resources as a mode of instruction in primary schools.

Keywords: Offline, Online, Instruction, educational resources, Instruction.

Introduction

Education is a necessity of life. The medium for achieving good and quality education are many, but getting it through correspondence is more prevailing in this generation. In days gone by, the television, the telephone, and the radio have been the electronic means of getting educated; on the contrary, the internet, CDs and DVDs are now in use today, as some of the most effective means of education. The generation in which we are today is commonly referred to as the “Jet Age” or “Computer Age.” It is, therefore, imperative, in teaching and learning at all levels of education, to approach the process with the advancement in technology, by all players of education, to enhance its process and products. The Federal Republic of Nigeria National Policy on Education (2013) states clearly that the government recognizes education as the greatest investment that the nation can make to bring about civilization, modernization, development and socio-economic progress. It is a preparatory ground for human development, where career abilities are groomed, and potentials and talents discovered and energized.

It is on this premise that the Federal Republic of Nigeria National Policy on Education (2013: p. 9) states the goals of primary education as to:

- (a) include permanent literacy and numeracy, and ability to communicate effectively;
- (b) lay a sound basis for scientific and reflective thinking;
- (c) give citizenship education as a basis for effective participation in and contribution to the life of the society;
- (d) mould the character and develop sound attitude and morals in the child;
- (e) develop in the child the ability to adapt to the child’s changing environment;
- (f) give the child opportunities for developing manipulative skills that will enable the child function effectively in the society within the limits of the child’s capacity;
- (g) provide the child with basic tools for further educational advancement, including preparation for trades and crafts of the locality.

In achieving these, the role of computer, as an electronic device that accepts data, processes data and produces the result in form of information, with minimum level of human intervention, cannot be overemphasized in educational process in Nigeria. The world is becoming a global village within which Nigeria is striving to ‘catch up’; hence, it becomes imperative to explore the use of computer in teaching-learning process, especially at the primary level of education.

Onasanya (2010) asserted that as the world enters the third millennium, there is a great challenge to update the process of teaching and learning and to take giant strides toward keeping abreast of technological developments and toward application of computer literacy in the Nigerian educational system. E-learning, according to Omonike (2013), is an electronic mode of knowledge sharing and transmission which may not necessarily involve physical contact between teacher and pupils. The concepts of computer-aided teaching and computer-aided learning, have given birth to computer-aided instruction which represents a combination of both teaching and learning. Online education, for example, has generally been offered in higher education or adult education (Simon, Smaldino, Albright, & Zuacek, 2009), and much of previous research on online video conferencing has targeted adult learners (Smyth, 2005, Lee, Yoon, & Lee, 2013). Online education, in most cases, is accompanied with enormous amount of information, and students in primary and secondary schools have not developed complex learning strategies and meta-cognitive skills necessary to search and select the information that they need (Lee, Yoon, & Lee, 2013).

Conversely, offline education is a situation whereby the instructors of the classroom also use the modern methods like PowerPoint instead of whiteboard to facilitate learning process. It is the use of recorded materials, such as audio tape, audio-visual tape, CD ROM, DVD ROM, to transmit information or knowledge to the learner without the use of the internet or intranet. Offline learning packages have been designed and used for teaching both in science and non-science subjects. For instance, Egunjobi (2002) found out from a study carried out that Computer Assisted Instruction (CAI) packages enhanced students’ academic performance in an aspect of Geography in secondary schools. Udousoro (2000) and Ajelabi, in Onasanya, Daramola, and Asuquo (2006), used the same CAI packages to teach Mathematics and Social Studies respectively. In a related study, it was found that there was no significant difference in the performance of students of Introductory Technology, who were exposed to individualized CAI

packages and those taught by the conventional method of instruction (Onasanya, Daramola, & Asuquo, 2006). Offline educational resources are necessary for instruction at the primary school level which is basic education of the Nigerian educational system.

Concept of offline and online educational resources

Educational resources, according to EDUCAUSE (2010), are any resources, available at little or no cost, which can be used for teaching, learning, or research. These include textbooks, course readings, and other learning content, simulations, games, and other learning applications, syllabi and assessment tools, and virtually any other material that can be used for educational purposes. Educational resources typically refer to electronic resources, including those in multimedia formats. Such materials are generally released under a Creative Commons or similar license that supports open, or nearly open, use of the content. Educational resources can originate from colleges and universities, libraries, archival organizations, government agencies, commercial organizations, such as publishers, or lecturers or other individuals who develop educational resources they are willing to share.

Ajah (2014) defined Open Educational Resources (OER) as teaching, learning and research materials in any medium that reside in the public domain and have been released under an open license that permits access, use, repurposing, reuse and redistribution by others with no or limited restrictions. OER can include full course materials, modules, student guides, teaching notes, textbooks, research articles, videos, assessment tools and instruments, interactive materials such as simulations and role plays, databases, software, applications (including mobile apps) and any other educationally useful materials. Hence, the use of offline and online educational resources can be regarded as open educational resources through which pupils can access learning with the help of technology devices that provide educational information with or without teachers' involvement.

Offline learning can simply be referred to as the ability of pupils at primary level of education to access learning materials on electronic devices without requiring an internet connection. Offline education is a situation whereby the instructors of the classroom also use the modern methods like PowerPoint or video tape, instead of whiteboard, to facilitate the learning process. It is a learning process delivered via a DVD or CD-ROM, video tape or over a television channel with

the aim of assisting students' learning. According to NOWNEVER (2015), the teaching process can be through CDs or virtual classroom where pupils can actively participate in the class because of the physical presence of the instructor.

Online instruction, on the other hand, has been extensively discussed by scholars. It is simply known as e-learning. It is electronic learning, typically a means of using computer to deliver teaching/learning in a school or any training centre. Online allows for additional learning materials to be used to support teaching and for learning materials to be delivered in different ways. It is not always easy for traditional teaching to take account of the differences in the ways people learn. However, the use of online resources can enable tutors to provide a range of activities which take account of these differences (Hall, Berg, & Adamson, 2007). It is learning process utilizing electronic technologies to access educational curriculum outside of a traditional classroom with the aid of the internet. It is interactive, that is, it can communicate with teachers or other students in the same class.

Online learning has been developed to cost effectively provide auxiliary and improved learning experiences beyond those available in the four walls of the classroom. Students with challenges, such as economic, family, physical or geographical problems, can enjoy the use of online learning opportunities. Furthermore, pupils learning in the classroom can augment or improve their learning performance by involving in fully online learning (Anderson & Mc.cormick, 2005). Online learning refers to the use of electronic applications and processes to learn. Its learning applications and processes include web-based learning, computer-based learning, virtual classrooms and digital collaboration. Content is delivered via the internet, intranet, extranet, satellite TV, and CD-ROM with multimedia capabilities (ISP, 2004; Manochehr, 2012).

Online learning is defined as individualized instruction delivered over public (internet) or private (intranet) computer networks. It is also referred to as e-learning, web-based learning (WBL) and the virtual classroom. Online learning was first called 'internet-based training', then 'web-based training'. Today you will still find these terms being used, along with variations of e-learning. According to Manochehr (2012), online learning is backed by the World Wide Web (www) and therefore has access to virtually unlimited information. Even large storage media have a finite capability to store information. Web-based learning is worldwide accessible, low in maintenance, secure, platform-independent, always current, and can accommodate various learning styles.

Educators and students make use of the web in a variety of ways to enhance their teaching and learning experiences. Watson (2008) opined that electronic learning is combining online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiate instruction from student to student, across a diverse group of learners. Blended learning is broadly defined as an instructional practice that combines teaching methods from both face-to-face instruction and online learning (Blackboard, 2009). Education in which instruction and content are delivered primarily over the internet is called online learning. Watson and Kalmo, in iNACOL (2011), argued that the term does not include printed-based correspondence education, broadcast television or radio, videocassettes, and stand-alone educational software programs that do not have a significant internet-based instructional component but any digital material used for supporting student learning that is delivered in multiple delivery models.

Online learning is commonly referred to as the intentional use of networked information and communication technology in teaching and learning. A number of other terms are also used to describe this mode of teaching and learning. They are e-learning, virtual learning, distributed learning, network and web-based learning. Online learning refers to educational processes that utilize information and communication technology to mediate asynchronous, as well as synchronous, learning and teaching activities. On a closer look, however, it becomes clear that these labels refer to slightly different educational processes, and, as such, they cannot be used synonymously with the term e-learning (Naidu, 2006).

Online and offline mode of learning can, therefore, be regarded as an educational process in which Information and Communication Technology is used as the medium of instruction between the teacher and the pupils. Thus, it involves the use of internet, intranet, video conferencing, television, overhead projector, PowerPoint, email, and chat to exchange information between the teacher and the learners.

E-Learning modalities

Individual self-paced E-learning Online	Individual self-paced E-learning Offline
Group based Synchronously	Group based Asynchronously

Source: Som Naidu, 2006

The e-learning modalities are as follows:

1. **Individualized self-paced e-learning online:** This refers to a situation whereby an individual learner accesses learning resources, such as a database or course content, online via an intranet or the internet (Naidu, 2006). A typical example of this is a learner studying alone or conducting some research on the Internet or a local network. This can be adapted at the primary school level where individual pupil accessing learning resources via internet during holiday from home with or without assistance, so as to keep him busy and prepare him for the learning ahead. Also, it will enhance pupils' self-dependence in knowledge seeking as it enables them access to several information, and to study wide.
2. **Individualized self-paced e-learning offline:** This refers to a situation where an individual learner uses learning resources, such as a database or a computer-assisted learning package offline (i.e., while not connected to an intranet or the internet). An example of this is a learner working alone off a hard drive, a CD or DVD. This is mostly available today, where children develop oral pronunciations, arithmetic skills, rhythm and some colour and picture identification. It is a kind of learning package where all what the child need to learn are in the CD or DVD, all what needed is it to provide an environment for learning, video player and monitor. The only challenge here is that the learner will not be able to ask questions on areas that need clarifications.
3. **Group-based e-learning synchronously:** This refers to a situation whereby groups of learners are together in real time via an Intranet or the Internet. It may include text-based

conferencing, and one or two-way audio and videoconferencing. Examples of this include learners engaged in a real-time chat or an audio-videoconference. Here, the learners have a real time of meeting which it makes like traditional mode of learning; they come together via internet for discussion. At this point all the pupils are together online at different location at the same time having discussion where the teacher serves as moderator of the activities. It is a kind of forum where learning and discussion goes simultaneously via video or phone conferencing. In this situation every pupil has access to computer and internet; they all log in on internet on scheduled time and have content on discussion. This encourages interaction and gives room for question and answer.

4. Group-based e-learning asynchronously refers to situations whereby groups of learners are over an Intranet or the Internet where exchanges among participants occur with a time delay (i.e., not in real time). Typical examples of this kind of activity include on-line discussions via electronic mailing lists and text-based conferencing within learning managements systems.

Implications of offline and online educational resources to primary school instruction

1. Cost Effective and Time saving: It is cost effective to school management in the sense that there will be a reduction in overhead cost of teachers and other staff since with only one teacher, many students could be reached outside the school within a range of time. More so, the cost of building more classrooms will be reduced and that of transportation of pupils to school since pupils could be reached out to via offline or online educational resources. Also, to both pupils and their teachers, the stress of spending to come to school will be out and it enables them to save their time for another purpose. It also enables the parents to monitor the learning progress of their wards without having to go to their school and get feedback on their children's academic performance. According to Visual College (2015), it removes travel costs, reduces time taken away from home and doing away with printed materials. It means pupils will be happier and focused.

2. Flexibility: It enhances 24/7 learning anywhere. Many face-to-face or traditional learning processes only operate within normal work hours, but online/offline learning gives opportunity to learners to choose their own hour of study, with their own way of comfort and their venue of learning. In the case of offline educational resources, the pupils are not under obligation on the time of learning. Hence, the audio or video can be played at a convenient time and the material

can be played over time compared to the traditional instruction where the instructor has time frame for each subject. Epignosis (2014) explained that the added benefit comes in when we are able to replay the lecture and gain even more out of it. Students that missed out can view the recording, or students that attended can watch it again to further their understanding.

3. Easy tracking and retrieval: Offline and online educational resources make tracking of learning progress convenience since one of the most important aspects of using Information and Communication Technology for learning is that, with the support of well implemented learning management system (LMS), it makes easy to track and prove learning process and progress of learners.

4. Discreet: According to Virtual College (2015), not everybody feels comfortable learning in a large crowd, especially if they find something hard to understand. It encourages each pupil to tackle or approach the subject at their own pace with interactive tasks being set in place to ensure understanding throughout each module. According to Otegbayo and Onasanya (2015), it makes learning real and improves the integration of ICT in the rural high schools, not only in English language but also in all other subjects.

5. Availability: Offline and online educational resources make learning available to pupils anywhere and at any time, staying in their room and still accessible to learning as long as they have a proper configured computer and internet facilities. Lee, Yoon, and Lee (2013) explained that Cyber Home Learning System-Video Conferencing is an expansion of CHLS with an addition of video conferencing, and it serves to provide learning support as well as consultations for marginalized students and those from low-income families.

6. Interactive: Designing an instruction, in a way that makes it interactive and fun through the use of offline or online educational resources or the more recently developed methods, enhances not only your engagement factor, but also the relative lifetime of the course material in question. Lee, Yoon, and Lee (2013) said that synchronous video conferencing increases the humanness aspect of online learning system. It appears that online education was found to be suitable for use for primary school learners and that it fit well into the primary school curriculum as a supplemental learning system.

Effective ways of using offline and online to promote instruction in Nigerian primary schools

There are guidelines to follow to make offline/online effective so as to promote learning in Nigerian primary schools.

1. Mastery of subject Matter: In handling offline/online educational resources to achieve its set goals, the teacher needs to take time to research the material and understand the content of the subject before making it available to the learners. The reasons are simple: the teacher needs to be prepared to back up any claims made within the subject material. Also, not all learners digest information the same way, and some may need more explanation through examples or further proof.

2. Online/Offline educational resources provided should be attractive to all learning styles and should be more pupil-centered: The design of the offline/online pedagogy should take every learning style into consideration. For instance, while one student may benefit from visual multimedia presentations of lessons, another student may be able to better absorb the information when it is presented in text form. An effective e-learning instruction should always take these various learning styles into account when the lessons are being created. Teaching and learning should connect with the big ideas, facts, processes, language and narratives of subjects so that learners understand what constitutes quality and standards in particular disciplines. This requires an understanding of learning that goes beyond the acquisition of skills (TLRP, 2008).

3. Platform should be easy to navigate, more gamification and fully functional: When designing offline/online platform, the ease of navigation and functionality should be a top priority. A well organized and intuitive web-based learning platform enables students to focus on the learning, rather than having to sort out technical issues that may arise from poorly designed sites and systems. More so, at the primary level, the operation system of the resources should be more of gamification, that is, it should be computer-game-based to enhance the full participation of pupils.

4. Contact Enhancement: Pupils and teachers should be able to establish an open line of communication. Also, teachers should specify which means of communication they prefer and during which hours. This will ensure that expectations are met and that the pupil receives the help or support that they need. Also, students should have contact information of the IT support

staff, and have access to a member of staff on a regular basis for necessary enquiry. Examples of how pupils can communicate with their instructors are: discussion forums, social media, chats, email, video conferencing and other offline/online technologies.

5. Set and communicate clear goals: One of the reasons teams are unable to achieve goals is not having clear enough guidelines on how to achieve the set goals. Part of the curriculum of any programme should be what will be done, when it will be done, how it will be done and what is needed for the successful completion of the tasks. It is, therefore, important that all instructors set and communicate clear goals to their learners in a manner in which they are sure they will understand and will be able to put it into action. Also, learners' parents, as stakeholders in learning process, should be carried along so as to monitor their children following the laid down procedures in the use of offline/online educational resources.

6. Consistent instructor presence, the value of feedback: Epignosis (2008) asserted that the role of the instructor is very important in the e-learning process because it is in his hands to encourage, inspire and ensure students do not feel like they have embarked on the learning trip alone, and also to ensure that students are tracked and given proper feedback which is very important throughout the learning process. To facilitate such a relationship, Learning Management Systems offer options like instant messaging between peers, email and other tools that ensure both the learner and the professor are but a click away from each other.

7. Availability of multimedia facilities and regular power supply: These two factors mentioned are germane to the effectiveness of offline and online educational resources in instructional process. Considering the epileptic state of power supply in Nigeria which has been the bane of e-learning (Adomi & Kpangban, 2010). Also, is the availability of multimedia facilities in Nigerian schools with low quality and quantity that can be used to facilitate e-learning in Nigerian Primary schools (Jegede & Owolabi 2003; Okwudishu, 2005, Wims & Lawler, 2007; Ololube, Ubogu, & Egbezor 2007; Adomi & Kpangban, 2010; Nwana, 2012). Hence, to make offline and online educational resources effective in primary schools call for availability of multimedia and regular power supply at every centers of learning.

Conclusion and Recommendations

In exploring offline or online educational resources at the primary school level in Nigeria, it is obvious that these will go a long way to support teaching and learning process in the primary

schools, especially with the age in which we are now. Though this method has been explored, and still in use at the higher level of education in Nigeria, both for instructional and assessment process, it can be extended to primary education, most especially in the area of instruction. It is high time we started appreciating and including it in the mode of our instruction to improve the reading and arithmetic performance of pupils in primary schools, though it may be new or unknown to many people. The merits of offline or online educational resources, as this study has observed, constitute some of the reasons they should be explored to improve instruction and enable every child in Nigeria have access to basic education without stress.

In achieving this great feat in the educational sector, particularly at the primary school level, the following recommendations could be employed:

1. Government and private individuals should subscribe to this in order to reduce the cost of running schools at the primary school level, in terms of overhead cost, construction of classrooms and transportation cost of teachers and pupils to the traditional centres for instruction.
2. Teachers should be trained on the importance of, and on how to use, these educational resources to increase pupils' learning outcome.
3. Parents and members of the public should be enlightened on the benefits of offline and online mode of instruction so as to earn their support.
4. Curriculum developers should be encouraged to explore how this method can be inculcated into the primary school curriculum as a mode of instruction.
5. Offline packages should be subjected to proper scrutiny before they are released to the public so as to avoid proliferation and harm on the end-users.
6. There should be close supervision, just like face-to-face instruction, on online instruction to ensure that teacher-pupil activities are educative and geared towards the realization of educational goals.
7. There should be provision of necessary instructional multimedia facilities and regular power supply to schools, to enhance the functionality of the online or offline mode of instruction in order to facilitate learning.

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