

Computer assisted instruction in education - essay



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INTRODUCTION

BACKGROUND OF THE STUDY

In recent years, due to advancement of computer technology, the concept of Computer Assisted Instruction is now more prevalent, and has become a trend (Yang & Wang, 2001). Electronic learning popularly referred to as e-learning is increasingly becoming acceptable in tertiary institutions all over the world. This is as a result of the opportunity provided by higher institutions and more students taking part in it (OECD, 2005). Digital learning is basically the use of information and communication technologies (ICTs) to enhance and support learning teaching and research (Eteng & Ntui, 2009). With digital learning, there is a shift from the traditional approach of teacher-directed didactic to modern methods where computer technology plays an significant role, thereby improving the quality, efficiency and effectiveness of teaching, learning, research and educational management. Its methods including the integration of the World Wide Web, multimedia, information search, electronic libraries, and remote learning. In this digital age, teachers must deal with the challenge and developmental opportunities of how to appropriately use information technology and how to integrate various educational materials into course design and teaching methods (Rosenberg, 2001). The characteristics of digital learning is different from the characteristics of traditional classroom environment learning, and can improve upon some learning problems of students who are physically or mentally challenged, helping them to learn more effectively (Chen, 2003). It provides stimulation from different channels such as words, pictures, sounds, animation, and images, and can frequently help students use learning functions of different sensory organs, and achieve the learning targets of <https://assignbuster.com/computer-assisted-instruction-in-education-essay/>

diverse wisdom (Li, 1998). In designing digital learning, scholars emphasize that learning ideals rather than computer technology should lead the design of a computerized learning environment (Chiou & Chong, 1993; Yang & Wang, 2001). The need for digital learning has now become important more than ever before as the objective of university education in Nigeria as defined in the National Policy on education (2000) includes the provision of high level manpower for national development and this is to be achieved through its programme of teaching, learning and research. Digital learning can help adults in developing their literacy and innumeracy skills, while also building Information Communication and Technology skills for life and work (CILIP, 2005).

In spite of the bright prospect of digital learning in the country, it is so worrisome that there are some hurdles militating against the effective use of the educational technology in Nigeria. Folorunso, Ogunseye, & Sharma (2006) and Resnick (2002) indicates that mass unawareness, low computer literacy level and cost were identified as critical factors affecting the acceptability of digital learning by students and lecturers of Nigerian universities. Sharma, Ekundayo, & Ngige (2009) points out that digital learning place high demand on learners who have to be more proactive and disciplined than in traditional face-to-face education whereas this proactiveness and discipline is lacking. Various barriers to ICT use in Africa schools have been identified to include: poor infrastructure, epileptic power supply, lack of electricity, lack of trained personnel, poverty, inadequate funding and limited or no internet access (Aladejana, 2007; Jegede, 2005).

STATEMENT OF THE PROBLEM

While there had been a giant attempt at integrating digital learning into instruction in other advanced countries, Nigeria is not yet fascinated by the potential of technology to enhance teaching and learning. Many of our schools are lagging behind in integrating technology into instruction. Teachers are apprehensive about improving and modifying instruction by incorporating the new technologies (Huckle, 1997). According to Salomon (1989), there are clear indications from many developing countries like Nigeria that the supply of relevant and appropriate software is a major bottleneck obstructing wider application and utilization of digital learning in Nigeria tertiary institutions. Schulmeister (2006) states that experience proved that the benefits of digital learning could not be fully taken advantage of, expectations could not be met and that technology often was used to simply reinforce outmoded approaches to learning. Resnick (2002) criticizes that even though Information Communication Technology is applied in education, the approaches to teaching and learning remain largely unchanged. There is therefore non-availability of internet access in some tertiary institutions because of the recurrent cost of bandwidth. Inequality of access to technology is the challenge of digital divide existing among the student in Nigeria tertiary institution (Omofaye, 2007). Thus, some of them are unable to afford computers due to the relative cost to the average income of workers in the country (Ajadi, Salawu, & Adeoye, 2008). The cost of accessing the internet in Nigeria is still on the high side, some students find it a challenge to afford (Arikpo, Osofisan, & Usoro, 2009)

PURPOSE

Based on the aforementioned research background and the statement of the problem, the purpose of this study is to explore the utilization and effect of digital learning on students in Lagos state Tertiary Institutions.

RESEARCH QUESTIONS

The following questions will guide this study:

- What is the level of awareness of students on the availability of Digital learning in Nigeria tertiary institution?
- What is the status of the utilization of digital learning?
- What are the challenges faced in the utilization of Digital learning on students?

SIGNIFICANCE OF THE STUDY

The study is significant in that it will provide information about the current status of utilization of modern technology in Nigerian secondary schools. It will also provide baseline data for future policy regarding technology training and the development of strategic plans aimed at encouraging technology-based innovation in teacher education programs. It is also hoped that this study will trigger off more research studies that will inform/encourage implementation of new technology in teacher education. This study will be useful to inform teachers on how use digital learning to teach students which will address the needs of students with different learning styles and motivation. It will offer great potential to transform and improve student learning, engagement and retention and support student success which will help institutional goals with potential benefits including improved retention and time savings for instructors. Average teachers will benefit as digital

learning will help reach their excellent peers and take complex tasks off their to-do lists, enabling them to focus on the parts of teaching at which they can excel. Through technology, they can also obtain real-time data and advice about how to help each of their students succeed, saving time and improving performance. It will make it easy for teachers to personalize instruction, which many average teachers find difficult or impossible to achieve with whole classrooms of students with a wide array of needs. Also teachers will increasingly be able to teach more students in person as digital learning replaces portions of instruction in an individualized fashion and provides time-saving student data; reach students remotely via technology; and capture and share their performances and methods widely through video and smart software that individualizes learning. Even among excellent teachers, various people will thrive in different roles.

By emphasizing the use of simulation – games to teach mathematics, it is hoped that the study will lead to the improvement of mathematics teaching and learning in our secondary schools. The general poor performance of students in mathematics and their attitudes towards some aspects of the subject are expected to be better.

With this study, the researcher aims at exposing the teachers and students to the importance of using simulation games to improve the teaching and learning of mathematics.

Technology and digital learning can increase the ability to meet the needs of individual students. Whether through the availability of timely data or the ability to connect students with the content and activities that meet their

learning styles and needs, technology and digital learning provide opportunities for teachers to personalize learning for more students at any given time.

HYPOTHESES

- There is no significant difference between the challenges faced in the utilization of digital learning and students' performance.
- There is no significant difference between the level awareness of students and availability of digital learning in tertiary Nigeria institutions.
- There is no significant difference between status and utilization of digital learning.

SCOPE AND LIMITATION OF THE STUDY

This study will cover the teaching and learning activities in Lagos State Tertiary Institutions.

CHAPTER TWO: LITERATURE REVIEW

DIGITAL LEARNING RESOURCES

In this study, the term ' digital learning resources' refers to learning premises and platforms that include technology enablers such as laptops, multimedia, CD-ROMs, and Internet resources. Digital learning resources can give students authentic as well as up-to-date information that is not necessarily available in textbooks. Generally, e-learning resources are useful as they represent a collection of cultural and scientific knowledge accumulated over the years (Yeo & Tan, 2008). Moreover, this type of resource can be useful to students because it can foster their learning and their critical thinking, their ability to make connections between different

concepts, and bridge the gap between their theoretical and practical knowledge (Palmer, 2007). Despite this, availability of resources does not lead to automatic learning improvement; in fact, productive use of resources can be difficult to achieve (Bera & Liu, 2006).

Technologies and Methods of Teaching

There are evidences supporting the introduction and use of new technologies in instruction. The World Bank (2004) opined that ICTs should be considered within education for the purpose of reforming curriculum, reinforcing teaching/learning and to improve leaning. The UN Secretary of State (2005) speaking on the role of technology in education said we must ensure that Information and Communication Technologies (ICTs) are used to help unlock the doors of education. As a result, Millennium Development Goals (MDG's) came up with this policy “ to co-operate with the private sector, to make available the benefits of new technologies, especially ICTs to increase educational opportunities and unlock the door of education. As a result of this, new technologies are being disseminated into educational institutions at a rapid rate. For the new technologies to be effectively utilized, teachers at all levels need not only to be proficient in the technologies but must also be well versed in its effective integration into their instruction. The major area Nigeria could meet this expectation is the teacher's preparation in the methods class. It is in the methods class that the students can see their teachers modelling the use or lack of use of the technology. The use or lack of use of the new technologies may widely affect the students in future as regard whether to use them or not.

CHALLENGES OF DIGITAL LEARNING

The information on any subject which has been put on the web need to be transformed to knowledge at some stage for it to be made useful. As suggested by Mehdi (2004) “ it can be extremely easy and quick to transfer information from one place to another, it is often very difficult and slow to transfer knowledge from one person to another” . There have been devised several methods to ease the process of conversion of information to knowledge, digital age has enabled swift transfer of information and now strives to produce faster ways to convert it to knowledge. Teresa & John (2007) talked about the various evolutions in digital learning like word-processing, hypermedia, Computer-mediated Communications, New Literacy Studies, Digital Archives and Information Literacy. The best effective method for this conversion can't be defined as learning ability differs from person to person and different tools produce different results in individuals. We usually tend to divide these groups based on age, country or technical background. The various needs for direction of development in the field of digital learning have been felt since a long time. We can't expect every individual to respond in a similar manner to tools that are available for digital learning. Therefore different tools and teaching methods are required for different groups of people which can be implemented with the help of human computer interaction (HCI) as emphasized by Bee & Laurel (2004). Another issue is the awareness to all new tools which can be helpful to a learner which can also be done with human computer interaction. Also a matter of concern is that there still exists a small population who is completely devoid of digital learning even if they can afford it. This is largely because of various myths and unawareness. As marked by Guerra, Alfonzo, Suarez, Hernandez & Milan

(2007) teaching aids have moved from blackboard to projector transparencies and then to video projectors and PowerPoint. The teachers are usually not able to produce very effective multimedia or other forms of digital learning. This is quite obvious as we can't expect every teacher to be a multimedia expert. The Development of various tools was done so as to enable the learners to acquire the knowledge easily. Another issue is the capital required for the spreading awareness, conducting workshops, providing training and releasing new education tools and multimedia products for learning.

PERCEPTION ON DIGITAL LEARNING

To successfully create digital learning program, we need to ensure that value really is there and it is in concrete terms. That means we need to sell learners on the truthful proposition that participation will provide benefits worth the time and effort. The curriculum needs to be the point of reference for creating an effective digital learning. Doing so will stimulate vital motivation and give the program a chance to succeed (Allen, 2003). Bad digital learning perception may be due to lack of understanding, lack of communication, and lack of trust or conflicting agendas in appropriate use technology. Some goal coaching and awareness exercises are probably needed to strengthen people's perception (Allen, 2003). It is important to realize that learners are both emotional and intellectual; and emotions have much effect on people's perception and what they do. In some digital learning studies conducted in developing countries, it was found that lack of vision and framework in implementing digital learning lead to a failure of these digital learning projects (Kizito & Bijan, 2006; Pal, 2006). Lack of both

technical and social skills required for implementation contributes to the failure of some projects. If learners cannot use adaptive tools they might feel ashamed and this affects perception. When learners feel ashamed and guilt it is because they are sent in environment in which they are not entirely pleased. The feeling will influence their study situation, as well as the whole learning process and this result in negative feedback, which may reduce concentration and motivation (Ostlund, 2005).

Digital Learning Models

Horn & Staker (2011) offers this summary of various digital learning models:

Face-to-Face Driver

This approach retains teachers to deliver most of their curricula in a traditional brick-and-mortar school setting. The teacher deploys online learning on a case-by-case basis to supplement or re-mediate, often in the back of the classroom or in a technology lab.

Rotation

The common feature the rotation model is that students rotate between learning online in a one-to-one, self-paced environment and in a traditional classroom. The face-to-face teacher usually oversees the online work.

Flex

Programs with a flex model feature an online platform that delivers most of the curricula. Teachers provide on-site support on a flexible, as-needed basis through in-person tutoring sessions and small group sessions. Many dropout-recovery and credit recovery blended programs fit into this model.

Online Lab

The online lab model relies on an online platform to deliver the entire course, but in a brick-and-mortar lab environment. Usually these programs provide online teachers. Paraprofessionals supervise, but offer little content expertise. Often, students who participate in an online lab program also take traditional courses.

Self-Blend

The most common version of blended learning is the self-blend model, where students choose to take one or more courses online to supplement their traditional school's catalog. The online learning is always remote, which distinguishes it from the online lab model, but the traditional learning is in a brick and mortar school. All supplemental online schools that offer a la carte courses to individual students facilitate self-blending.

Online Driver

The online driver model involves an online platform and teacher that deliver all curricula. Students work remotely for the most part, Face-to-face check-ins may be included. Some of these programs offer brick-and-mortar components as well, such as extracurricular activities.

**THE NEED FOR DIGITAL LEARNING IN NIGERIA
TERTIARY INSTITUTIONS**

The world is advancing at a rapid rate. Events have moved to the electronic stage with the computer at the centre. This development has brought a lot of innovation and revolution into teaching and learning. The 3R's (reading, writing and arithmetic) which forms the nucleus of the old system of

education has witnessed series of literacy reforms. The world is now in the age of information technology or computers age; hence, there is a need to keep abreast of time. One of the ways of achieving this is through the introduction of computer education in our institutions of learning (Ajibade, 2006).