The Need for Computer Aided Instruction (CAI) In the Nigerian School System

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ABSTRACT
Teachers' preparation and training appears to be limited in computer-assisted instruction (CAI) and management for students with dyscalculia. The advantages and prospects of computer assisted instruction (CAI) were examined under a wide review, method, modes and styles. However, there are a number of implementation challenges that may interfere with effective use in the classroom. This study buttresses the need to implement CAI in our Nigerian schools to help conform to the world trend, complimenting teacher skills, individualization of instructions and stimulating learners' interest.
Keywords: Instruction, Computer, Individualize, System

INTRODUCTION
The advent of the computer has opened up possibilities for teachers and learners which is different from the scope of commercial enterprise for which it was earlier targeted. Computer has come to be credited with advantages in education, to the extent that in some cases it has eventually replaced the chalkboard and traditional instruction (T.I) (Din, 1996). Developing nations like Nigeria that places premium on its educational development, cannot ignore this instructional medium called computer assisted instruction (CAI). Merrell & Tymms 2001; Hussen, 2011 both highlighted the advantages and supported the adoption of computer assisted instruction (CAI) in Nigerian Educational System.

Teachers' preparation and practices most often do fall short in the area of computer assisted instruction (CAI) for students with dyslexia or dyscalculia making them to be more prone to the learning difficulties than others. Therefore, the need for effective and proper concentration of teachers on the trainees should be more focused on CAI to sponge poor concentration, attention deficits by students and perhaps to achieve the instructional objectives (LuiM, 2007).

Computer assisted instruction (CAI) appears to be a promising intervention for both teachers' and students who have attention problems or those who have identified disabilities such as dysgraphia, acaculia, romxgraphia and dyscalculia (Orim & lgwe, 2017).

Unfortunately, teachers' use of CAI for students appears limited and may not be utilized in ways that are of maximal benefit for at-risk learners (Desiree, Murray & David, 2014).

This article is aimed at supporting their clamour by presenting the prospects and most especially justifies the implementation of computer assisted instruction (C.A.I) in Nigeria educational system.

Computer Assisted Instruction (CAI)
Computer-assisted instruction" (CAI) refers to instruction or remediation presented on a computer (Access Center, 2004). Computer-assisted instruction improves instruction for students with disabilities and also encourages others to learn fast because students receive immediate feedback. It captures the students' attention, spirit of competitiveness, engages them as they interact and help them to study at a pace, master the skill/concept before moving ahead (Access Center, 2004). Computer assisted instruction (CAI) Programs provide differentiated lessons to challenge students who are at risk, average, or gifted.

PROSPECTS AND ADVANTAGES OF CAI

The Instructional Technique known as computer aided Instruction (CAI) involves the use of the computer as a means of aid in instructions which include teaching as well as exercise modes. Almost every tool of the teacher has been influenced by the pace of technology except the chalkboard; the use of the computer in the classroom has finally presented the "automated blackboard" as described by Nckerson (1982). The computer has a promise of accelerating progress in learning and teaching than it used to be by harnessing more powerful tools and possibilities.

Instructions can be improved by the application of computer in education which involves control of variables, texts and visual effects. Models with the advantage of visual appeals and ease of recall, are set up on computer screens, the students manipulate these models to solve assigned problems, developing an intuition for the subject in a way that is not possible with non- interactive learning (Schmid & Malone, 2004). Students have found computers also helpful in visualizing concepts which are quite difficult to visualize otherwise. Topics usually treated emphasize aspects which are difficult or impossible to deal with satisfactorily by conventional means because it encompasses media such as formula driven graphics, animations and choice of random events (Orim & Igwe 2017). This presents a better environment from the textbook centred classroom (Rao 1991).

Automation of routine tasks usually encountered in education is one of the prospects of CAI, readily increasing communication between the student and Instructor (through the computer) and make more information available to the learners. It reduces the tedium, speeds solutions involved in problem solving and allow analysis of a wide range of very difficult problems (Taylor 1986). Individualization is one of the strongest advantages of CAI. This individualization is being seen as the humanization of education (Conners, 2001). Teaching can be initiated at each student level of difficulty and achievement, with the computer, because it is easy to alter the pedagogy to coincide with particular familiar physical words (Oliver & Reschly, 2010). To further enhance individualization, amongst the further-fetched ambitions of work in intelligent tutorial systems, is for the computer to have a model of the pupils as well as a model of the subject matter (Sleeman & Brown 1987). This individual approach enables short feedback time to students interactivity, and encouragement of students initiative, taking care of distracting details (such as computing, data taking and graphing) (LuiM, 2007).

On the part of the teacher, he can use the computer in evaluating, monitoring and reporting of students' progress. This can be made easier by recalling from Hard Disk Memory, record of students activity, at the end of a computer session. If the students responses and approach to problem solving could be used to diagnose his/her learning difficulties and this could be feedback into future software designs.

A part from the benefit of developing programming skill, the criss-cross of algorithms involved in program coding and implementation, would enhance the deductive/inductive process, thus yielding great cognitive development; students stand to acquire some skills which improve transferrable cognition (Mezzacappa & Buckner, 2010), such skills, if transferred to other areas of learning, could improve the overall learning enterprise.

CAI IN NIGERIA

The prospects outlined above makes the CAI very attractive to the modern educationist, but there are however a few opposing arguments. The points often advanced include: the time spent in developing suitable software, financial cost, the revolutionary turnover in microcomputer design and production-accentuating the fear of obsolescence of hardware, implementation, change of power, interest and other pedagogical problems. Office of Technology Assessment, US Congress (OTA, 1995) justifies investments in CAI by predicting that the disadvantages will progressively evaporate. There are a few peculiar reasons and advantages to justify implementing CAI in Nigeria which are as follows:

1). World trends

Nigeria is not isolated in civilization; to attain technological development and independence, we must adapt to world trends despite our disabilities. CAI is a 'new instructional technology that we cannot afford to ignore in our educational system. The need to adapt to the trend is further supported by the National Policy on Education which stipulates that "Modern educational Techniques will be increasingly used and

improved in the country (NPE 1989, Revised 2004). Besides, it is internationally acknowledged that the child of the future must compulsorily be computer literate; therefore even if it is only for this reason that computers are introduced, they can also be extended to CAI.

2)   Teacher complement

If well-written instructional packages are available, they can complement the efforts of the teacher, especially the poorly skilled/equipped teacher. It is established that consistently high marks have been obtained for computer education in comparison to mixed marks for traditional teaching modes, such as Textbook, Lecture, Homework, Examination and conventional laboratory (OTA, 1995), so we see the great need for CAI if our educational achievements are to be improved.

3)   Individualization

Computers when applied as instructional devices; would improve the individualization of our teaching/learning, which is lacking in most of our classrooms because of problems of large student-teacher ratio (about 100:1) (Aremu, 2005). To overcome the problem of large class-enrolment students could be grouped, (where computers are few). The computer being a machine can run instructional programs consistently for several hours without fatigue, and cope with the large numbers effectively, whereas a human being would not.

4)   Stimulation of growth of the computer industry

Implementing CAI would also serve as a catalyst to the development of our computer technology. Considering the extent and size of the Education Industry in Nigeria the reciprocating interaction between consumption and supply of computers could lead to an expansion in need and hence an attraction of investors to invest in the manufacturing of computers in Nigeria, which subsequently should reduce the costs of computers and make them more accessible to a greater number of people. In the case of India, the computer policy paved the way for the importation and eventual indigenous manufacture of micro and mini computers (Rao, 1991).

5)   Drop-out remediation

According to Ajewole (2005), there is mass drop-out rate in our schools. Generally, any programme that might strengthen academic skills, reduce personal problems, or aid in bringing a student more easily into the school system is encouraged as a means of curbing drop-out wastage, (Cope and Elhims, 1985). It is not improbable that the new dimension (CAI) could motivate otherwise listless students, leading to reduction of tie drop-out rate.

CONCLUSION

The issues raised above should suffice as justification for implementing CAI in our schools. What remains then is the procedure for implementation. The advantages will pave way for the implementation which has to be preceded by a detailed study that would yield a well-orchestrated blue-print.

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