



## Technology -Enhanced Learning through the Use of Knowledge Tablet: An Innovation in Osun State High Schools in Nigeria

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(NON PEER REVIEWED) PROJECT REPORT :

Technology could be viewed as a specialised aspect of the field of Educational Technology which is often used to show a manner of accomplishing a task when considered as a technical process. Technology is currently seen as a major force affecting every aspect of our life. Almost everything that man does has been affected and influenced by technology. The mobile industry was transformed drastically with the introduction of Simon, the first smartphone, in 1993. Mobile technology device combined features of the cellular phone, fax, E-mail, pager, paperless notepad, address book, calendar, and calculator in one hand-held unit. The landscape of the mobile industry changed in 2010 with the introduction of Apple's mobile tablet - iPad. Even though mobile tablet technology was introduced in 2000, iPad revolutionized the mobile industry with its simple design and non-PC characteristics (Gruman, 2011).

The field of education has not been an exemption. Akinsanya and Akanmu (2010) observed that learners now have more sources of information than before and that with technology, automation has been introduced into education. There have been many contestations on how technology has provided and could continue to support students. By implication, technology and its product now have great influence on what goes on in the classroom. In the opinion of Siddiqui (2008) "technology is changing teaching and learning" and that technology is critical to preparing students to live, learn and work successfully in a digital age.

Technology has always served as both a driving force and instrument of innovation in any area of human activity. It is then natural for us to expect that innovations based on Technology applications can enhance teaching and learning. Information and computer technology offered more ways to retrieve information and develop skills. Serdyukov (2017) opines that humans have been able to communicate with anybody anywhere and in real time, visually, and on the go through with the aid of captivating tools such as iPhones, iPads, Skype, FaceTime and the likes. Technology today serves a great asset to many exciting opportunities viz a viz online learning, virtual reality, mobile learning, virtual and remote laboratories, social networking learning, 3D and 4D printing, and gamification.

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Abanikannda (2016) observes that technology including some of its products, if properly applied to the process of education could assist in solving the problems of knowledge and population explosion, inadequate learning resources, over-crowded classrooms, and deficient personnel, that have befuddled the traditional system. An effective application of technology to education would as well demystify abstract and difficult concepts by making it easy to now teach such concepts with better illustration. Of all the technological devices influencing education in recent times, Siddiqui, (2008) believes that technology in the form of computer and the internet has become a major focus of education policy and reform. Computer is a machine specially designed for the manipulation of coded information. It is an automatic electronic machine that could perform simple and complex operations by accepting, inputting and manipulating data and producing output of information (Akinsanya&Akanmu, 2010).

Technology can help to transform the interest and natural curiosities of students into significant, learning opportunities with appropriate learning tools, an unguided young student who uses technology to play computer games, can translate that interest and intensity into an academically relevant application like a flight simulator device designed for adults, flying planes, capturing the same kind of excitement but with a challenging, real-world payoff.

The National Policy on Education (2013) makes provision for 2-tier of Secondary Education in Nigeria. The first-tier is a three-year device tagged Junior Secondary School (JSS). It is the level of education after Primary Education and the level preceding Senior Secondary School (SSS) which is the second-tier. Only successful students from the Senior Secondary School (SSS) could proceed to tertiary institutions.

Students in the Senior Secondary School (SSS) are usually prepared for external examinations and entrance examinations into tertiary institution. For instance, three recognized examination bodies exist in the country that organizes the final examinations of Senior Secondary Schools (SSS) in the country. These are the West African Examination Council (WAEC), the National Examinations Council (NECO) and the National Business and Technical Education Board (NABTEB). Each of these bodies organizes relevant examination for Senior Secondary Education across the country. The Joint Admissions Matriculation Board (JAMB) organizes entrance examination into Nigerian Universities, Polytechnics and Colleges of Education. All these examinations are considered external to the Secondary Schools and frantic efforts are usually directed towards ensuring that students pass them very well. Perhaps this was what prompted the introduction of the Knowledge Tablet device into the high school system in Osun State, a direct equivalent of the Senior Secondary Schools.

#### Aim of Project

The aim of this study was to investigate the innovativeness of the Knowledge Tablet for technology-enhanced learning, as well as to investigate high school students' perception of the use of knowledge tablet for learning based on gender, their perceived ease of use of knowledge tablet for learning based on gender and their perceived usefulness of knowledge tablet for learning in Osun State, Nigeria. Three research questions were generated for the study, while three hypotheses were tested. A Sample of three hundred (300) High School students comprising males and females were the respondents used from among a population consisting of all high school students in Osun state, Nigeria.



Figure 1: Samples of Knowledge Tablets distributed to high school students in Osun State, Nigeria.

Structured questionnaire was duly validated and same data collected through the research instruments were analysed. The three research questions were answered and while the three hypotheses generated were tested using mean rating and t-test statistical tool respectively. All hypotheses were tested at 0.05 level of significance.

It was found that that the objectives of Knowledge Tablet introduction into high schools in Osun state is positive as it improves the quality of instruction; prepares learners for better academic performance; bridges the digital divide; overcomes the lack of learning material bridge; and serves as a revolutionary initiative towards solving challenges of technology in education. The findings also revealed that expected roles of students, subjects' teachers and parents in the new arrangement are positive and this include: provision of needed platform to integrate the new device into classroom instructional process; serving as monitors and coordinators of the device; good knowledge of details of their subjects; identifying the various stages in the new device and keeping to the schedule of learning; need to organise tutorial and group work; and maintaining relationship with the students and their parent. There was no significant difference between male and female high school students' perception of the use of knowledge tablet for learning;

there was no significant difference between male and female high school students' perception on the ease of use of knowledge tablet for learning and there was no significant difference between male and female high school students' perception of the usefulness of knowledge tablet for learning.

Based on the findings of the study, the following conclusions were noted in relation to the purpose of the study. The findings revealed the likely problems that may inhibit the effective use of the device which include: capital intensive nature of the device; social cultural background; fear of job replacement; poor quality of electricity supply; students may see the device as a mere tool for play/fashion and not for serious instructional purpose; and lack of designated repair or replacement location. Therefore, Knowledge Tablet is a veritable tool in education that allows teachers to customize student' learning, it also helps students to be more prepared for the world immersed in technology. Based on these findings the following recommendations were made: Use of the tablet should be encouraged and accepted as one of the ways through which globally competitive human resources can be achieved in the state.

The use should also be extended to all high school students in both public and private schools in the state while other states should be encouraged to follow suit. Government should put in place strategies that will ensure periodic review of the system to keep abreast of the development in mobile learning application to ensure its contemporariness in order to sustain students' satisfaction with the system.

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