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ASSESSMENT OF TECHNOLOGY INNOVATIONS IN NIGERIAN CLASSROOM "A CASE STUDY OF "OPON IMO" IN OSUN STATE, NIGERIA

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Abstract
The paper assessed the use into which students put the innovation of table of knowledge called oponimo. It also determined the perspective of teachers and students about the innovation and examined the factors influencing the use of the technology. This was with a view to determining the acceptability of the technology among teachers and students of the State of deployment. A total of 552 students and 120 teachers were involved in the study. Questionnaires and content analysis were employed in the procedure for data collection. Simple percentages and t-test were the statistical tools employed for analysis. The results showed that majority of the students ranging from 63% to 85% were not using the technology for envisaged tasks like reading books, completing assignment, practicing past questions and as a device for storing important information. The results also showed that the perception of students and teachers about the technology did not vary significantly. The perceptions were that the technology was to power and that many of them were using it for watching films and other forms of relaxation.

Keywords: *Assessment, Technology and Innovations*

Background to the Study

In Nigeria, the concern over students' poor performance in public examinations and lack of interest in learning has continued to receive attention from stakeholders. Teachers now expand their teaching strategies and other classroom handling procedures and parents also continue to improve efforts at making schooling easier for their children. Government as a major stakeholder has also stepped up efforts to improve education delivery. For many years, educators and policymakers looking for strategies to close the achievement gap and improve student learning have sought solutions involving new uses of technology (Darling-Hammond, Zieleszinsky and Goldman, 2014).Sivakumaran, Garcia, Davis, Jones, Choi and Dawson (2012)and Miranda, H., & Russell, M. (2011) observed thatoutside of the educational classroom, technology comprises a great part of a student's life and so as technology advances, many educators are working at rapid pace to provide a relevant, current learning environment for students, incorporating the most advanced

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learning tools. Earlier Chen, Looi, and Chen (2009) state, "There is much consensus that technology is now an inevitable and integral part of our everyday life, work, and home experiences. Every society now strives to adopt new technology to improve the process of teaching and learning. Nigeria has continued to intensify efforts in this regard.

Nigeria is a federation comprising 36 States evenly distributed into six geopolitical zones. Osun State lies within the southwestern zone of the country. The Osun State Government, in its effort to enhance learning process in secondary schools across the State, launched a tablet of Knowledge "Opon Imo", designed in the form of a mini iPad, and distributed to the senior secondary school students free-of-charge.

Opon Imo is a portable touchscreen Android powered e-learning device, the first of its kind in Nigeria provided by the state government to equip students with knowledge and make it easier for them to pass school leaving certificates examination. It is a standalone, educational, multimedia e-learning content platform that comes with pre-loaded applications for West African Examinations Council and Joint Admission Matriculation Board approved text books.

The Opon Imo tablet provides three major content categories; Text Books, Tutorials and Practice Questions which include audio voiceovers and video tutorials. It delivers compelling self- paced standalone courses, conducted in a highly interactive computer-based learning environment and synchronized to a library of relevant e-books and a computer- based testing environment.

The Android 4.0 PC Tablet has a Dictionary, Bible, Koran and Health book. It also has development games such as chess, Sudoku and Tetris. It has 512MB of RAM and an internal storage capacity of 32GB according to the specs published on the Opon Imo website. The current version of Opon Imo has Internet deactivated to prevent the distraction this may cause to students at this level of education.

As new technology is increasingly used in learning and teaching scholarly research on the effectiveness of new and emerging technologies in learning is in its infancy, with little consensus among researchers about how to measure the effects of technology in education and how studies should be designed.

While research efforts are underway to clarify how and what children learn from their experiences with networked technology and media, Shore says studies are "scattered and fragmented." This lack of hard evidence leads some educators to question the efficacy of incorporating these new technology-based learning experiences, such as those involving digital media and online social networking, and the urgency of investment in what they consider unproven strategies. Conversely, proponents of technology investment reason that digital media are already a prevalent fixture in the lives of contemporary students, so waiting for research to confirm the promise of digital innovation before committing to expanded experimentation is unwise. To proponents, the question is not whether technology should be used in classrooms, but *how* it should be used.

There are numerous benefits of educational technology when it is integrated deliberately and comprehensively into teaching and learning. These benefits are supported by research. For instance the International Society for Technology in Education (2008) noted the following:

i. Technology supports student achievement
ii. Technology builds 21st century skills.
iii. Technology increases access to education, virtual communities, and expertise.

In addition America's Digital Schools (2006) observed that Technology engages students in learning and content creation. The Apple Inc. (2009) reported that:

i. Technology fosters inclusion.
ii. Technology facilitates differentiated instruction
iii. Technology helps prevent dropouts.
iv. Technology strengthens career and technical education
v. Technology extends the learning day
vi. Technology supports teacher quality
vii. Technology enables diagnostic, timely, and innovative assessments

However, Noveanu (2010) noted that having available technology is not the primary contributing factor to enhancing student learning. Infact, there are usually two sides to technology adoption in the classroom; the perception of the immediate stakeholders (teachers and students) and the effect of the technology on student learning. It may be too early to assess the effect of oponimo on students' performance given the fact that the introduction of the innovation was just in 2013. This study is therefore designed to assess the perception of students and teachers about the educational intervention in Osun State.

Statement of the Problem

The introduction of oponimo to senior secondary schools in Osun State was with much celebrations. While the innovation is laudable and novel, the tablets having been in the classroom for at least a term (three months) would have revealed sufficient strengths and weaknesses of the innovation that would enhance better direction of efforts. Some of the possible weaknesses may be such that cannot wait till later years when the innovation will be ripe for evaluation as the effects may be too consequential thus a monitoring study of this nature becomes necessary and urgent. The success of the innovation depends largely on the perception of the teachers and students about the technology; there is the need therefore to investigate this.

Research Objectives

The specific objectives of the study are to:

a. Assess the use into which students put the innovations
b. Determine the perspective of teachers and students about the innovations
c. Examine the factors influencing the use of Opon

Research questions

i. What common use do students put the opon imo tablet?
ii. What are the common issues with the contents of opon imo that could challenge its use?

Research hypotheses

There is no significant difference in the perception of teachers and students about the innovation

Procudure

The study adopted the survey design with senior secondary school teachers and students of Osun State as population. A record of the schools where the device has been distributed was taken to determine the spread of distribution. Out of these schools 12 secondary schools were selected to participate in the study with two schools were randomly selected from each of the 12 educational zones of the State. Forty-six students and 10 teachers were selected from each school. The students and teachers chosen cut across different subject groups and specialties. Thus 552 students and 120 teachers participated in the study. The selected students responded to Opon Imo Perception and Use Questionnaire, content analysis was done to examine the contents of the tablets.

Results and Discussion

The objectives of the study were addressed with two research questions and one hypothesis. Data collected were subjected to appropriate statistics and the summary of the results obtained are presented as follows.

Research question1: What common use do students put the oponimo tablet?

This research question was raised to find out the use of oponimo among students in relation to the intentions of the State Government bearing in mind that students might not operate on the same page with the government by using the tablet for purposes other than the ones intended for them. The result obtained is summarized in table 1

Table 1

Summary of Descriptive Analysis of the Use to which Students put Opon Imo

Use of oponimo	No and percentages of students who use		No and percentages of students who don't use		Students with no response	
	No	%	No	%	No	%
Reading subject books on oponimo tablets	84	15%	464	85%	0	0%
Completing assignments using oponimo	84	15%	464	85%	0	0%
Practicing questions on oponimo	120	22%	432	78%	0	0%
Playing games on oponimo	204	37%	340	63%	0	0%
Listening to audio lessons on oponimo	412	75%	115	21%	25	4%
Playing music on oponimo to relax	196	36%	338	61%	14	3%
Using oponimo as a storage device for important information	324	59%	232	41%	0	0%
Carrying oponimo about to boost personality among friends	256	46%	300	54%	0	0%
Using oponimo as a photograph taking tool	248	45%	308	55%	0	0%
Using oponimo as a device for watching films	440	80%	112	20%	0	0%

The results in table 1 show majority of students did not use the oponimo for the intended purpose of accessing books, using it for assignments, practicing questions/exercises on it, listening to audio lessons on it and using it to store important information. Results also show that many of the students use the device to play music, take photograph and watch films and many also use it as status enhancer by merely carrying it about that are all outside of the intended purposes.

Research question 2: What are the common issues with the contents of oponimo that could challenge its use?

This question was raised to determine the basic challenges with the use of the device based on the examination of the contents of the device and as reported by the students. Contents were examined in line with the:

i. currency of the learning materials on the device compared to the textbooks that students are familiar with at present
ii. appropriateness of the diagrams and illustrations in the learning materials
iii. ease of powering the device
iv. extent to which other applications on the device distract students attention while using it for the intended purpose

The summary of the findings is presented as follows:

i. A total of 345(62.5%) of the student respondents opined that the textbook contents of oponimo are not as current as the hard copy textbooks that they are familiar with
ii. Examination of the illustrations in the device shows a gross exaggeration of some of the diagrams especially in the science subjects. Some experimentations depicted have some apparatus that normally do not stand alone are found standing alone e.g hanging conical flask, sublimation experiment without support etc
iii. Three hundred and two making 55% of the student respondents reported that powering the device was always difficult as the battery runs down relatively fast and source of power to recharge the battery is not always available.
iv. A total of 449 (81%) of the student respondents reported that they usually end up doing other things that distract their attention while reading on oponimo.

Hypothesis: There is no significant difference in the perception of teachers and students about the innovation

This hypothesis was generated to compare the general perceptions of the students and teachers about the device and its use since both of them are the immediate users of the innovation. The responses of both categories of the uses were scored and subjected to t-test statistical analysis. Summary of the analysis is as presented in table 2

Table 2
Summary of t-test Analysis of the Difference in the Perceptions of Teachers and Students about Opon-imo

Group	N	X	s.d	t	p	Remarks
Teachers	120	35.23	2.21	1.403	0.251	Not Significant
Students	552	36.31	3.22			

Results in table 2 show that there is no significant difference in the perceptions of teachers and students about the device in terms of what the device does to students' learning, the quality of the device and the aesthetic value of the device (ease of use, portability, relevance to modern technology).

Discussion

Oponimo as a technological tool to aid learning was launched by the Osun State Government to serve as alternative to hard copies of textbooks and a source of learning materials to complete assignment and practice questions. Students' responses have confirmed that the device is actually useful for the purpose for which the government launched it. They were also of the opinion that the device assisted their learning. Studies such as International Society for Technology in Education (2008) and America's Digital Schools (2006) have earlier asserted the relevance of ipad technology to students' learning. This has been buttressed by this study.

A number of challenges have however been reported with this use of oponimo. Some of these challenges are not strange. Notable among these is the difficulty in powering the device due to non-constant supply of electricity. As at today Nigeria is still battling with generation of sufficient electric power. Students also reported distractions with some other applications on the device while using it for the intended purpose. This can also be understood because some earlier studies have reported lack of concentration on the part of students around the area of this study. So, it is not strange that a device like oponimo may be an opportunity for some of the students to divert their attentions to other non-productive things while pretending to be doing some legitimate work.

Government can only advised on a thorough review of the contents of oponimo to address the other challenges of non-current contents and incorrect diagrammatic representations and illustrations reported and observed in the device.

The assertion of Chen, Looi, and Chen (2009) that there is much consensus that technology is now an inevitable and integral part of our everyday life, work, and home experiences has been buttressed by the outcome of this study in terms of the consensus in the perceptions of both the teachers and students about oponimo. The two categories of users being the immediate stakeholders agreed on the relevance, usability and positive influence on oponimo on students' learning.

Conclusion

The study concludes that the introduction of oponimo is worthwhile and that students' and teachers' perception of the new technology is positive. The study further concludes that the State government needs to subject the contents of the device to a thorough review to address the potentials dangers that can threaten the effectiveness of the innovation.

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