Management and Utilization of Smart Board on Academic Achievement of Junior Secondary School Students in Ibeju Lekki L.G.A. of Lagos State.

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ABSTRACT

This study investigated management and utilization of smart-board on academic achievement in some selected private junior secondary schools in Ibeju- Lekki Local Government Area of Lagos State. Two research questions and the corresponding hypotheses was developed to guide the study. A descriptive survey research design was adopted for the study. The population of the study comprised all the teaching staff and students of the selected private secondary schools in the area. The target population are teachers and students from four private selected secondary school Ibeju-Lekki. Most of the core academic classrooms in Lekki schools have been equipped with smart-boards for some years now. A sample size of 95 respondents were chosen randomly, 20 students from each school and 15 teachers from the same schools. The sample size was chosen by simple random and purposeful technique. The Cronbach Alpha coefficients for all scales and sub-dimensions were calculated separately. The reliability coefficient of the scale was calculated at 0.84. The research questions were answered by the coding of 'Yes and No' while, Chi-square (X^2) and Analysis of variance (ANOVA) was employed for testing the hypothesis. The findings of the study showed that there is no significant effect between smart board utilization on academic achievement of junior secondary school students in Ibeju-Lekki. Also, there is no significant effect between the between smart board for class group presentations on academic achievement of junior secondary school students in Ibeju-Lekki. Based on these findings, it was recommended that there should be an increase in the availability, utilization and usage for class group presentations of the smart board in the secondary schools. Also, the class group presentation should be encouraged, as well as the school administrators and government making it a matter of great priority to provide adequate personnel to train the staff and teachers on the effective use of the smart board in the secondary schools.

Keywords: Smart boards, management, utilization, class group, academic achievement.

BACKGROUND TO THE STUDY

With the surge of technology usage in most organizations, there has been a quest to get different types of technologies in schools to meet up with the rapid development in the century and to keep up with this rapidly changing situation. For this reason, the need to equip educational systems with the latest technological developments has become evident**.** There have been some recent innovations in the academic field in the present age of information technology. Many technological devices help academic branches to operate in a more interactive manner and they visually enrich teaching and learning sessions. The beginning of the technological era changed the education system by making the learning process more memorable for students, while allowing teachers to access more resources. There is every possibility that academic achievement and success could be directly proportional to the quality of the teaching materials made available in the schools. Besides, this, the utilization and management of such resources, could also determine the quality of educational success.

The use of technological products such as smart-boards as a teaching aid would very likely enhance the academic achievement of students. Technology is the future of the world and need to be highly accepted in schools. If the students have ample opportunities to use new equipment and software to learn, it then implies they have been likely set up for success in the future for learning. However, technology is also changing how one learns and how lessons are implemented in classrooms. Therefore, integrating technology into classrooms and using it to teach the students is critical. The smart-board provides "a valuable method of delivering content in an interactive and meaningful context to facilitate student's engagement.

Smart boards are used to present lessons to the students, using an interactive whiteboard that uses touch detection for users input. It can be used the same way as computer with fingers instead of mouse, to edit a document, browse websites and collaborate on projects. It allows teachers and students to control the computer through touching the screen. Smart boards allows teachers work through a lesson and save it for students to view at home. The students can watch lessons at home and then come into class to work on their problems with a teacher. It improves learning experience while making teachers lives better.

According to Preston, and Mowbrey, (2008) the new tool, the smart board, entered the academic environment in recent years, and is known as the smart board, it is also known as the interactive white board, or electronic board and it is a white board. Taking a closer look at history of the smart board, one would see that the smart board manufacturer, the Smart Technologies Corporation's name inspired the transformation of the name "interactive board" to that of "smart board".

Ekici, (2008), described smart board is an electronic board connected to a computer laptop or desktop device that shows data and both the teacher and the learner can use this board as a white board by writing on it, using a special pen or fingers. Smart board allows the user multiple options by opening all computer applications and World Wide Web, and as well, work on it through touch and clicking your fingers, as well as the use of different writing and drawing tools. Smart boards allows viewing the text, images, audio and video files with various extensions. The user of smart-board can move any element on the screen with the finger of the hand, such as moving graphics, shapes, and create virtual forms with original shapes and requires students to work directly with its tools and interact with it. Through the use of smart-board, the teacher can record and replay the presentation of lessons after saving it.

Smart boards in schools have to be properly managed, well utilized and used for class group presentation. Not just being made available, but to be consistently planned on the usage, organize the usages as well as, the time and frequency of the usage, even for students' class group presentations. Also, there should be a skilled teacher who directs and reports any inconsistencies on the resource. However, a budget has to be made available for its maintenance, to make sure that everything is working on perfectly, but conversely, in some schools, this is not so. These smart boards are not well utilized and used for students' class group presentations. Proper usage of this technology may eliminate some of these barriers. The use of smart board in education will help to bring about effective learning and increase in students' academic achievement

Education is sometimes perceived as one of the most conservative social systems and public policy fields. But talking to students

on innovation gives students the opportunity for idea that will bring many changes in the society. Belskaya, Moldovanova, Rozhkova, Tsvetkova and Chervach, (2016) found that teachers and students exhibited a preference for the use of the smart board over traditional instruction. They questioned, however, as to whether the enthusiasm has led to effective methodology. They argued that though the technology is expensive, in the hands of the right teacher it could and should be used in creative and imaginative ways above and beyond that of traditional boards or projection technology. They wrote that the uniqueness of smart board technology "lies in the possibility for an intersection between technical and pedagogic interactivity.

Tercan (2012) presented the findings of a two-year study that evaluated the use of smart boards by students in two grade levels of 12-15 schools from six Local Education Authorities. The author reported that the introduction and training on smart boards were highly rated and had a strong impact on the classrooms. Teacher and student responses were extremely positive, and both groups were convinced that teaching and learning had improved. Deniz, and Tezer, (2016), designed a study to determine the impact of the London challenge portion of the schools smart board expansion project (SWE). The project was designed to equip one core subject department in each London secondary school with smart board. The result of the study, showed that smart boards integrate well into the whole class teaching environment that is preferred in classrooms, and use varies amongst different teachers and subjects. Their statistical analysis also showed no influence on student achievement in the first year of the implementation. The blackboard or whiteboard may be less motivating and attention driven enough to increase specific students' academic achievement. Students will likely enjoy the class more with the smart-board and gain greater interest in the smart-board use. The initially unmotivated students may score higher than they previously did. Smart-board increased student engagement, peer collaboration, and strengthened student's comprehension. It also gives teachers the ability to provide engaging lessons for a variety of students and diverse learners at any grade level. The smart-board enriches students learning, serves as a motivation for understanding and provides students with the skills necessary to adapt in a highly technological society.

Smith (2000) pointed out that some of the advantages of the smart-board were that the staff appeared to enjoy being on the cutting edge of technology and enjoyed impressing the students with its use. The whiteboard, seems easy to learn with, and important points could be highlighted with the pen. The smart-board could allow the teacher to keep the class together and direct instruction while providing a focus for those less computer-literate students. There are some agreement that smart-boards have a positive effect on students' motivation and achievement. It enhances students' active participation in lessons, in various kinds and grades of schools. With regards to this, instead of teacher-centered instruction, there is a process in which students are at the center, and interactive learning is in the foreground. The extent to which there is interaction with the smart-board would very likely increases motivation, attention, curiosity, behaviour and academic achievement. The smart-board renews part of teacher's enthusiasm for teaching.

Yapıcı, and Karakoyun, (2016) acknowledged that smart board technology led to an increased pace of delivery, increased use of multimedia resources and a change in whole-class teaching to one more interactive. Students became an active part of the lesson and gained confidence in their skills while demonstrating to the whole

class. The smart board lessons led the students to become more enthusiastic about using technology in their learning activities. Elaziz, (2008), found the perceptions of those involved in a study were technology was used to be visibly affected, with both teachers and students overwhelmingly convinced that the technology had a positive impact. The views were particularly strong in lesson enjoyment and engagement, but the most glaring positives were those of pupils' attention and motivation.

Statement of the Problem

Most students are not seriously engaged in the learning processes in the school. Similarly, in some secondary schools, the smart boards, that are made available, have not been used properly for the purpose it was provided. This is a total neglect to the goal of the resources that had been mapped out for teaching and assimilation by the students. Some teachers, on the other hand, have very little time to learn each new technology, particularly when its use usually leads to a change in teaching methods and classroom management, and most times, these teachers rarely uses these boards for students class group presentations, and even when teachers learn to cope with different learning tactics, there still remains a fear of a breakdown in the technology equipment, because of these uncertainties, only a few teachers at each school seem willing to take on the challenge to use the smart boards.

Integrating smart boards into the classrooms as well as using it to teach learners is critical and very crucial. The inadequate utilization of smart boards and class group presentations using smart-boards by both the students and teachers in secondary schools could be a problem in the academic achievement of the students. The rapid effect of using smart board has been a challenge to teaching and learning in some schools. The use of smart-board is intended to increase student's academic activities as a means of improved learning outcomes and raise the teacher's efficiency in teaching. However, a situation where the smart boards are available, but not well utilized or managed properly calls for attention. Educators are under increasing pressure to use technology to enhance instruction in ways that will improve student learning. It is vital that education managers finds a solution to the problems of technology integration that will provide the most benefit with accessibility, management and adaptability to both teachers and students. Teachers need to know emerging technologies especially in the field of education to augment efficiency and effectiveness in the process of teaching and learning, so as to achieve positive academic achievements. The traditional way of teaching using the blackboard might not avail the students with the opportunity to interact with the smartboard which seemingly, increases motivation, attention, behaviour and academic achievement. Based on this adduced problems, it is very imperative for the researcher to investigate the management and utilization of smart-board on academic achievement in some selected private junior secondary school in Ibeju Lekki, Local Government Area of Lagos State. Nigeria

Research Questions

The study sought to answer the following research questions.

1. To investigate the extent of smart board utilization in teaching on academic achievement of junior secondary school students in Ibeju Lekki, LGA of Lagos State?
2. What is the effect of using smart-board for class group presentations on academic achievement of junior secondary school students in Ibeju Lekki, LGA of Lagos State?

Research Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance.

1. There is no significant effect between smart board utilization on academic achievement of junior secondary school students in Ibeju Lekki, LGA of Lagos State
2. There is no significant effect between using smart board for class group presentations on academic achievement of junior secondary school students in Ibeju Lekki, LGA of Lagos State

Methods

A descriptive survey design was adopted for this study. The target population of this study consisted of all the 878 junior students that were taught with smart boards and 165 teachers in private secondary schools in Ibeju-Lekki area. A sample size of 95 respondents were chosen randomly, 20 students from each of the four schools and 15 teachers from the same schools. The sample size was chosen by simple random and purposeful technique. A researcher's self-designed questionnaire titled Smart Board and Academic Achievement of Students Questionnaire (SBAASQ) was used for the study. In the coding of the data of the responses from the respondents opinions, NO=1, YES=2, If mean is greater than 1 is agreed, if mean is less than 1, it is disagreed. (Mean >1=agreed, mean<=disagreed). The 10-item questionnaire designed by the researcher were validated by three experts in educational technology, and educational management Department of University of Lagos. Their input were effected in the final draft. Each teacher that participated in the study had extensive training in the use of the smart-board and they were selected because of their skills with the use of the smart-board and their ability to integrate technology into their lessons. Reliability was determined through calculation of Cronbach's Alpha for all scale. A reliability coefficient of 0.84 was realized when data generated were subjected to Cronbach alpha. The researcher employed two research assistants in the administration and collection of data from the respondents. The data collected were analyzed using mean and standard deviation to answer the research questions, while Chi-square (X^2) and Analysis of variance (ANOVA) was employed for testing the hypothesis. All the findings were held at 0.05% level of significance.

Results

Research Question One: To what extent does smart board utilization influence academic achievement of secondary school students in Ibeju-Lekki?

S/N	Item	N	Skewness	Mean	Std.Dev	Remark
1	Performance on our school subjects depend on usage of smart-board	91	0.732	1.753	0.725	Agreed
2	Academic achievement of students does not depend on smart-board usage in our school	91	0.602	1.254	0.475	Agreed
3	In our school, achievement of students					

	is easy by smart-board usage	91	0.732	1.342	0.525	Agreed
4	Teaching, reading and learning on smart-board is understanding and clear	91	0.534	1.283	0.545	Agreed

Source: Field Survey, 2023

In the above table, note that if mean is greater than 1, the respondents were agreed on the subject matter, however, if mean is less than 1, it shows that the respondents disagreed on the subject matter. (Mean >1=agreed, mean<=disagreed). In addition, if the standard deviation is more than 1, and skewed toward positive, it means that the respondents disagreed on the subject matter.

The above table 1 shows the descriptive analysis of research question that "To what extent does smart board utilization influence academic achievement of secondary school students in Ibeju-Lekki? Results shows that all the items on the questionnaire were accepted as they had mean greater than (1) This means that the majority of the respondent agreed on the research question to what extent does smart board utilization influence academic achievement of secondary school students on the average means scores of 1.75, 1.25, 1.34, and 1.28 respectively, which indicates majority of the respondents agreed, that there is effect of smart board utilization on students' academic achievement.

Research Question Two: What is the effect of using smart-board for class group presentation on academic achievement of secondary school students in Ibeju-Lekki?

Table 2: RQ2: Influence of using smart board for class group presentation and academic achievement

S/N	Item	N	Skewness	Mean	Std.Dev	Remark
5	Every note and images made on the smart-board are easy to learn	91	0.832	1.652	0.725	Agreed
6	Commands on the smart board are easily controlled by a touch of finger	91	0.752	1.451	0.675	Agreed
7	Students can easily document and save all the activities performed on the smart-board	91	0.702	1.712	0.525	Agreed
8	Each user can easily interact with the smart board	91	0.520	1.503	0.545	Agreed

Source: Field Survey, 2023

In the above table, note that if mean is greater than 1, the respondents were agreed on the subject matter, however, if mean is less than 1, it shows that the respondents disagreed on the subject matter. (Mean >1=agreed, mean<=disagreed). In addition, if the standard deviation

is more than 1, and skewed toward positive, it means that the respondents disagreed on the subject matter.

The above table 2 shows the descriptive analysis of research question that "What is the effect of using smart board for class group presentations on academic achievement of secondary school students in Ibeju-Lekki? Results shows that all the items on the questionnaire were accepted as they had mean greater than (1) This means that the majority of the respondent agreed on the research question that there is an effect between class group presentations on smart Board and academic achievement, with the average means scores of 1.65, 1.45, 1.71 and 1.50 respectively, which indicates majority of the respondents agreed, that there is effect of using smart board for class group presentations on students' academic achievement.

Test of Hypotheses
Table 3: Testing of Hypotheses one: There is no significant effect between smart board utilization on academic achievement of secondary school students in Ibeju-Lekki LGA of Lagos State.

Hypothesis One	Mean	$\bar{X}$	Std.Dev	N	X^2 Tab value	X^{c2}Cal value	P<0.05	Remark	Decision
HO1: There is no significant effect between smart board utilization on academic achievement	1.182	1.116	.155	91	2.231	28.65	0.000	Sig	Reject Ho1

Source: Computed researcher with SPSS 2023
Independent Variable: Utilization of smart board
Dependent Variable: Academic Achievement

Decision: From the above table 3, the chi-square computed on hypothesis one, showed that the computed value of X^{c2} 28.657 is greater than the critical value of 2.231 at d.f = 1, thus, we accept the alternative and reject null hypothesis, at p value 0.000 < 0.05 level of significance. Hence, there is significant effect between smart board utilization on academic achievement of secondary school students in Ibeju-Lekki.

Table 4: Testing of the Hypotheses two: There is no significant effect between using smart-board for class group presentation on academic achievement of secondary school students in Ibeju-Lekki LGA of Lagos State

Hypothesis Two	Mean	$\bar{X}$	Std.Dev	N	X^2 Tab value	X^{c2}Cal value	P<0.05	Remark	Decision
HO1: There is no significant effect of using smart board for class group	1.752	1.332	.725	91	3.348	32.01	0.000	Sig	Reject

presentation on academic achievement										Ho2

Source: Computed researcher with SPSS 2023
Independent Variable: Smart board/ class group presentation
Dependent Variable: Academic Achievement

Decision: The second hypothesis also show that that the computed value of X^{c2} 32.014 is greater than the critical value of 3.348 at d.f = 1, thus, we accept the alternative and reject null hypothesis, at p value 0.000 < 0.05 level of significance, therefore, there is significant effect between using smart-board for class group presentation on academic achievement of secondary school students in Ibeju-Lekki LGA of Lagos State.

Discussion of Findings
The finding showed that the means achievement remarks of the students in chi-square test are significant. This was further confirmed by the result in table 3, which revealed that method was a significant factor on students' achievement in smart-board usage. As observed in first hypothesis, there is significant effect of smart board utilization on student's academic achievement the computed value of X^{c2} 28.657 is greater than the critical value of 2.231 at d.f = 1, thus, we accept the alternative and reject null hypothesis, at p value 0.000 < 0.05 level of significance. Therefore, there is significant effect between smart-board utilization on academic achievement of secondary school students in Ibeju-Lekki LGA of Lagos State. This implies that the smart board was well utilized and more positive and effective in enhancing and facilitating students' achievement. The finding of this study seems to support the finding of previous research work by Tercan, (2012), on the effects of using the smart-board in science and technology course on students' success, and on the positive significance of the continuous utilization of smart board in

schools. Also, in agreement, Belskaya, Moldovanova, Rozhkova, Tsvetkova and Chervach, (2016) confirmed that smart board can be used in a creative way, indicating that students were involved, attentive, and motivated when lessons were taught using the smart board.

The second hypothesis also show that that the computed value of X^{c2} 32.014 is greater than the critical value of 3.348 at d.f = 1, thus, we accept the alternative and reject null hypothesis, at p value 0.000 < 0.05 level of significance. Therefore, there is significant effect between using smart-board for class group presentation on academic achievement of secondary school students in Ibeju-Lekki LGA of Lagos State. Furthermore the finding of the study is in support of Preston, and Mowbrey, (2008) who shows that inappropriate teaching techniques is one of the factors that contributes to poor achievement of students. Daniels (2004) in agreement to this study established that smart board tools keeps the students engaged and motivated in their studies, leading to academic success. Hence, using smart board for class group presentation positively influences academic achievement of secondary students in Ibeju-Lekki LGA of Lagos State.

Conclusion
Utilization and using smart boards for class group presentations in secondary schools is a necessity for the enhancement of academic achievement, especially at this stage of technology awareness. It is therefore imperative that school managers, administrators, heads of schools and

principals in secondary schools should make sure that there is an efficient and effective management and utilization of smart board for teaching in schools. Responses indicated that the Smart Board can be used in aid of academic achievement. Students' and teachers' responses were very positive on smart-board usage, indicating that students and their teachers were motivated when lessons were offered using the Smart Board rather than using other teaching method. Therefore, the study concluded that there is positive influence between smart-board management and utilization on academic achievement of secondary students in Ibeju-Lekki LGA of Lagos State.

Recommendations

The following recommendations were made:

1. There should be an increase in the availability, utilization and maintenance of the smart board in the secondary schools
2. Teachers should endeavor to use group presentation during class teaching and learning processes.
3. The school administrators and government should make it a matter of great priority to provide adequate personnel to train the staff and teachers on the effective use of the Smart Board.
4. Seminars, symposium and conferences should be conducted by the school authorities to expose the students and the teachers on the need for the use of the smart board.

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