Integration of Multimedia and Interactive Whiteboard for Quality Teaching and Learning in Nigeria Secondary Schools System.

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Abstract
The study was carried out to examine "integration of multimedia and interactive whiteboard for improving quality teaching and learning in Nigeria secondary schools system". Four research questions and corresponding hypotheses were formulated to guide the study. A Survey research design was adopted for the study. The population of the study consisted of 5820 students and 450 teachers inpublic secondary schools in Oron Local Government Area. A sample size of 400 students and 40 teachers was used for the study. Simple random sampling technique was used in selecting four secondary schools. The instrument used for data collection was Multimedia, Interactive Whiteboard Integration Questionnaire (MIWBIQ). The instrument was validated by two research expert in Educational Technology, University of Uyo. The reliability of the instrument was determined using Cronbach Alpha. The reliability co-efficient of 0.77 was obtained. The instrument was administered to 400 students and 40 teachers and the data collected were computed using Mean, Standard Deviation and independent t-test. The Mean and Standard Deviation were used to answer the four research questions while independent t-test statistic was used to test the four null hypotheses at 0.05 level of significance. It was concluded from the result of findings that Multimedia and Interactive Whiteboard integrationare highly necessary for effective teaching and learning process in secondary schools in Oron L.G.A. It was therefore, recommended among others that teachers should use varied strategies and Educational Technology gadget that would involve appropriate instructional materials while delivering lessons to the students as this would make students grasp difficult science concepts. Teachers must also have adequate knowledge of computer to be able to deliver the lesson content with the use of multimedia such as graphics and computer animations.

Keywords: Multimedia, Interactive Whiteboard, Animation and Quality teaching.

Background of the Study

Technology integration in teaching and learning process is an approach of getting things done for improved results. It is the body of knowledge or knowledge of scientific principles applied to practical tasks; for the reduction of human suffering or for the improvement of productivity. According to Itighise (2016) technology is complex integrated organization of man and machines of ideas, procedures and management". Technology has impacted almost every aspect of life today including education. Integrating technology in education is the process of analyzing, designing, developing, implementing, and evaluating the instructional environment, learning materials, learners, and the learning process in order to improve teaching and learning (Tomei, 2008). It is the light that shows the in - service teachers the right direction and method of lesson presentation which leads to successful teaching and therefore require that the students made sense out of what they are taught (Itighise&Wordu, 2018). Technology integration in education is important because it helps today's teachers to integrate new technologies and tools into their classroom. It enables teachers to engage their students in unique, innovative, and equitable ways. Teachers are also able to expand their network and connect with other teachers and educators nationally and globally. Teachers are able to upgrade and improve the learner-centeredness of their classroom (Haleem, Javaid, Qadri&Suman, 2022). With technology integrationin education teacher are move from a familiar role of classroom lecturer, presenting information to the students, who are expected to passively receive the knowledge being presented to functions as more of a coach or facilitator as students embrace a more active and collaborative role in their own learning (Lathan, 2023). This is achievable with the use of multimedia integration in teaching and learning process.

Traditionally, instructional delivery is viewed as a process of delivery all the content of the lesson to the students without any opportunity of questioning. This means that the teachers have the monopoly of knowledge acquired for change of attitude, knowledge, ideal, skill or appreciation. According to Ofem (2016) traditional teaching method are easy to adopt which involve teacher standing in front of the silent group of students while the students listen quietly. This method limits students-teacher and student-student interaction. Weak students find it difficult to assimilate the content of the lesson and most students find it difficult to keep pace with the teacher as the instruction or lesson progress. This method of instruction delivery has been seen as one of the factors affecting student' academic performance in Nigeria. Hence, integration oftechnology in teaching and learning process aims at increasing efficiency, bringing pedagogical changes for betterment of educational system.

Itighise (2016) posits that technology has been the driver, manifesting itself in simple audio-visual resources, video and televisions and lately as computer networks and the internet. The effective implementation of the technology in teaching and learning process ensure quality learning with richer content, pedagogy, valid assessments and links between in and out of classroom learning. King (2018) posit that technology integration in classroom environment include multimedia, interactive whiteboards and Computer Assisted Instruction. Multimedia integration involves the process of integration of sound, video, graphic, text and animation to assist the students' learning skills and the teacher teaching processes with modern technology. The theory of multimedia projection is based on the integration of multiple forms of media. Multimedia combines five basic types of media into the learning environment: text, video, sound, graphics and animation, thus providing a powerful new tool for education. Levine and Donitsa-Schmidt (2016) compared the traditional learning strategies with computer-based activities and discovered that the students in computer-based activities perform higher than those in traditional learning. The implication for multimedia instruction is that it provides resources for additional instruction through tutorial programs and additional practice through drill programs. Due to the advancement of new techniques and technologies, under a strong influence of computer revolution during the last decades, the traditional source of knowledge, the textbook, is slowly being pushed behind. Computers (modern instructional resources) have recently assumed their role in school teaching, thus pushing behind traditional teaching method used thus far (Ojelade&Aregbesola, 2020). Nowadays, the use of multimedia projectors in school teaching is of crucial importance.

Recently, findings from our immediate environment have shown that, an average Nigerian child/student can recall movies vividly both local and foreign with adequate description of the settings and actions in the movie. This picture can be foreseen in the classroom situation where concepts to be taught will be inform of audio-visual form for easy capturing, retention and recalling of information among these young generations (Ojelade&Aregbesola, 2020). Our generation are no longer audio learners where the teacher teaches abstract concept rather audio-visual which affix the application of multimedia integration into teaching and learning. Starting from the mid-1990s, electronic interactive whiteboards was introduced in classrooms (Manny-Ikan& Dagan, 2011). These whiteboards based on computer technologies seem to be replacing traditional black or white boards, which were once considered indispensable. Interactive whiteboards operate on the connection between a computer, a projector and a touch screen electronic whiteboard. At the heart of the interactive whiteboard lies a touch screen smart board which students can use the touch screen

whiteboard to experiment, solve, write and erase applications such as visual experiments, visuals, animations and graphics. Electronic microscopes, multimedia materials, videos, data tables, CD ROM, or the Internet may be used depending on the software programs used by these whiteboards (Akbaş&Pektaş, 2011). The increasing quality of hardware and software quality resulting from the recent production of interactive whiteboards by many different companies has attracted the interest of governments. Education ministries in many countries are now encouraging the use of interactive whiteboards in classroom. Computer literate teachers have been observed to have the ability to use this technology.

British Educational Communications and Technology Agency (2003) have listed the advantages of interactive whiteboards for students as; enhanced motivation, improved participation and cooperation, more attractive presentations, ease of use for younger children since there is no requirement for a keyboard, easier handling of complex concepts with the help of clearer, more effective and dynamic presentations, and the appeal to students with different learning styles. Itighise(2016) stated that The interactive whiteboard (IWB) has been incorporated into learning environments for over a decade and the increasing flow of research into its impact is emerging from the United States, United Kingdom, Australia and European countries such as Spain, and Turkey (Türel, 2010). As of 2010, England has the highest Interactive Whiteboard penetration rate (73%) in the world and many countries including Denmark (50%) and the USA (35%) have substantially increased IWB rates of utilization in classrooms. Interactive Whiteboards (IWB) are effective tools for initiating and facilitating the learning process and ensuring student participation.

The study focus on Use and Gratification theory (UGT) by Denis McQuail in 2010. Uses and Gratification Theory (UGT) posits that individuals have power over their media usage, rather than positioning individuals as passive consumers of media. Uses and Gratification Theory (UGT) explores how individuals deliberately seek out media to fulfill certain needs or goals such as entertainment, information, personal identity and social interaction. The theory is related to this paper in that it explains the reasons why certain media were chosen over alternative communication media and the motivators that influence particular media behaviour to occur. In Uses and Gratification theory (UGT) the intended behaviors of various media are driven by certain goals and needs of users. Thus, learners are seen as goal-oriented and the major goals or needs for determining the use of virtual communities such as interactive whiteboard, wikis, class website, blogs, computer and others are for appropriate information and interaction which in turn may affect students' academic performance.

Empirically, the study is in line withItighise and Akpan (2022) examined acquisition of literacy skill through the use of handheld devices and academic performance among Science Education student in Universities in Akwa Ibom State, Nigeria. The population of this study comprised of level 200 Science Education students which was 1080 (440 males and 640 females) in Universities in Akwa Ibom State. The sample comprised of 120 Science Education students drawn from two universities in the State. Two instruments used were: Acquisition of Literacy Skills using Handheld Devices Questionnaire, ALSHDQ (a = .70) and Computed Result Sheet (CRS). Three research questions guided the study. The data were analyzed using mean, frequency count, and percentage, t-test and Pearson Product Moment Correlation (PPMC). The results showed that level of acquisition of literacy skills through handheld devices among Science Education students was high (weighted mean, x = 3.07); Male and female Science Education students had similar performance mean sc2ores (t = .905) and Science Education students acquisition of literacy skills through Handheld Devices was positively related to their academic performance (r = .555). It was concluded that the level of literacy skills acquisition through handheld devices among Science Education students was high and that there is no difference in the performance means scores of male and female Science Education students exposed to handheld devices in acquisition of literacy skills. Hence, the use of multimedia and interactive Whiteboard for quality teaching and learning is necessary for Nigeria Secondary schools. It is against this background the study examined integration of multimedia and interactive Whiteboard for quality teaching and learning in Nigeria Secondary schools system.

Statement of the Problem

During the last few years, the number of publications examining the functions and roles of technology integration in teaching and learning process cannot be overemphasized. The effectiveness of using technology in teaching and learning is increasing rapidly. The shift of attention from the traditional method of teaching and learning for the technological driven society has brought a tremendous change in the process of teaching and learning. Teaching is one of the most challenging professions as knowledge is changing and expanding rapidly and latest technologies demand every teacher integration for improve academic performance. The question now is:Can multimedia and interactive whiteboard integration improve the quality of teaching and learning in public schools in Oron Local Government Area of Akwa Ibom State, Nigeria. It is against this background that the

research examines integration ofmultimedia and interactive whiteboard for quality teaching and learning in Nigeria Secondary schools system.

Purpose of the Study

The main purpose of this study is to investigate examines integration multimedia and interactive whiteboard for quality teaching and learning in Nigeria Secondary schools system.. Specifically, the objective of this study is to examine:

1. extent of multimedia integration for quality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria?
3. extent of interactive whiteboard integration for improvequality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria?

Research Questions

The following research question was raised to guide the researcher carry out fruitful research thus:

1. To what extent do multimedia integration improvequality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria?

2. To what extent dointeractive white board integration improvequality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria?

Hypothesis

The following null hypotheses was formulated from the research questions to guide the study

1. There is no significant difference in the mean response of teachers and students on the extent of multimedia integration for improving quality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria.
2. There is no significant difference in the mean response of teachers and students on the extent of interactive white board integration for improving quality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria.

Methodology

The study adopted a survey research design which involves collection of data from a large population. The study was conducted in Oron Local Government Area,Akwa Ibom State, Nigeria. Oron Local Government Area is found in Akwa Ibom State, South-south geopolitical zone of Nigeria. The population of the study comprised of all Senior Secondary two (SS II) students and all secondary school teachers in Oron Local Government Area. The population of the study was 5820

and 450 public secondary school students and teachers respectively in Oron Local Government Area. The sample for this study was 400 students and 40 teachers from the selected secondary schools in Oron Local Government Area. The instrument used for data collection was a structured questionnaire tagged:"Multimedia, Interactive Whiteboard Integration Questionnaire (UIWBIQ). The questionnaire was made up of two sections; section A and B. Section A consisted of items seeking the personal information of the respondents. Section B consisted of two parts. Part I was consisted of items to obtain information on the extent of Multimedia integration for quality teaching and learning. Part II contains items on the extent of Interactive White Board (IWB) integration for quality teaching and learning. The responses on the questionnaire were structured on a 5-point rating scale namely; Very Great Extent (VGE), Great Extent (GE), Moderate Extent (ME), Little Extent (LE), and Very Little Extent (VLE). The instrument was validated by two experts in Educational technology from University of Uyo. To strengthen the validity of the above instrument, the items were administered to a trial group of 30 students who were not part of the main subjects for the study but who were found to be equivalent. A reliability co-efficient of 0.77 was obtained using the Cronbach Alpha through SPSS to ascertain the reliability of the instruments for the study.The items selected for the questionnaire were typed and printed clearly. They were administered personnaly by the researcher to the four hundred (400) students and forty teachers in selected Public secondary school in Oron Local Government Area of Akwa Ibom State. Data collected were computed using Mean, Standard Deviation and independent t-test. The Mean and Standard Deviation were used to answer the two research questions while independent t-test statistic was used to test the two null hypotheses at 0.05 level of significance. All computations were carried out using Statistical Package for Social Sciences (SPSS). The boundary limits for interpreting mean scores of the questionnaire items in order to answer the research questions are as follows: Very Great Extent (VGE) = 5 points - 4.50 – 5.00, Great Extent (GE) = 4 points-3.50 – 4.49, Moderate Extent (ME) = 3 points -2.50 – 3.49, Little Extent (LE) = 2 points-1.50 – 2.49, Very Little Extent (VLE) = 1 point-0.50 – 1.49

From the above real limit, a mean of 4.50 – 5.00 was accepted as very great extent,3.50 – 4.49 was accepted as great extent, 2.50 – 3.49 was accepted as moderate extent, while1.50 – 2.49 were accepted as little extent, and 0.50 – 1.49 were accepted as very little extent.Hence, the cut-off point was 2.50 or above. Therefore, any item that scored a mean value of 2.50 or above was accepted and was judged according to the scale response option. While any item that scored below 2.50 was rejected. With respect to the hypotheses, the hypothesis is accepted if the calculated t-value of the

items is less than the table values and rejected if the calculated t-value of the items is greater than the table values at 0.05 level of significance.

Results

Research Question 1: To what extent do multimedia integration improve quality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria?

Table 1: Summary of Performance Gap Analysis of Mean Responses on extent of Multimedia Integrationfor improving Quality Teaching and Learning Process in Secondary Schoolsin Oron L.G.A.

S/N	ITEMS	XN (Teachers)	XP (Students)	XN-XP	REMARKS
1	Presentation of instructional contents in textual with projector	4.73	2.70	2.03	NS
2	Presentation of instructional contents in audio with projector	4.55	2.67	1.88	NS
3	Presentation of instructional contents in video with projector	4.48	2.68	1.80	NS
4	Presentation of instructional contents in slides with projector	4.57	2.70	1.87	NS
5	Presentation of instructional contents in animation with projector	4.42	2.68	1.74	NS
6	Multimedia projector is used in projecting assignment	4.43	2.70	1.73	NS
7	Multimedia projection is used in introducing lesson	4.47	2.71	1.76	NS
8	Multimedia projection is used in class evaluation	4.37	2.71	1.66	NS
9	Multimedia projection is used in class discussion	4.52	2.70	1.82	NS
10	Multimedia projection is used to display instructional materials.	4.57	2.73	1.84	NS
	Overall XN-XP			**1.81**	

Data presented in Table 1 reveal that the mean rating of the opinion of the respondents on extent of multimedia integration for improving quality teaching and learning process in secondary schools in Oron L.G.A. The data show that all the items have performance gap to be between 1.66 and 2.03 and are positive values indicating that students' performance level is below what is needed as overall XN-XP of 1.81 is lesser than 2.50 scale response option. Therefore, multimedia integration for improving quality teaching and learning process are highly necessary for effective teaching and learning process in secondary schools in Oron L.G.A.

Research Question 2: To what extent do interactive white board integration improve quality teaching and learning process in secondary schools in Oron Local Government Area, Akwa Ibom State, Nigeria?

Table 2: Summary of Performance Gap Analysis of Mean Responses on Extent of Interactive White Board Integration for improving Quality Teaching and Learning Process in Secondary Schools in Oron L.G.A.

S/N	ITEMS	XN (Teachers)	XP (Students)	XN-XP	REMARKS
1	Interactive whiteboard is used to present concepts in class	4.18	2.79	1.39	NS
2	Interactive whiteboard is used to illustrate concepts in class	4.18	2.76	1.42	NS
3	Interactive whiteboard is used to present lessons from the internet in class	4.75	2.81	1.94	NS
4	Interactive whiteboard is used to communicate at the level of all students in class	4.63	2.70	1.93	NS
5	It is used to scaffolds instruction to help students reason and develop problem-solving strategies.	4.20	2.79	1.41	NS
6	It is used to orchestrates effective classroom discussions, questioning, and learning tasks that promote higher-order thinking skills	4.73	2.73	2.00	NS
7	Interactive whiteboard is used to integrate a variety of learning resources with classroom instruction to increase learning options.	4.23	2.70	1.53	NS
8	Interactive whiteboard is used to integrate the application of inquiry skills into learning experiences.	4.15	2.69	1.46	NS
9	Interactive whiteboard is used to clarifies and shares with students learning intentions/targets and criteria for success.	4.30	2.67	1.63	NS
10	Interactive whiteboard is used to provide meaningful learning opportunities for students.	4.27	2.72	1.55	NS
	Overall XN-XP			**1.63**	

Data presented in Table 2 reveal the mean rating of the opinion of the respondents on extent of interactive white board integration for improving quality teaching and learning process in secondary schools in Oron L.G.A. The data show that all the items have performance gap to be between 1.39 and 2.00 and are positive values indicating that students' performance level is below what is needed as overall XN-XP of 1.63 is lesser than 2.50 scale response option. Therefore, interactive white board integration for improving quality teaching and learning process are highly necessary for effective teaching and learning process in secondary schools in Oron L.G.A.

Research Hypothesis 1: There is no significant difference in the mean response of teachers and students on the extent of multimedia integration for improving quality teaching and learning process in secondary schools in Oron L.G.A.

Table 3: Summary of t-test analysis of the difference in the mean responses experts expected performance rating and students' performance rating in extent of multimedia integration for improvingquality teaching and learning process in secondary schools in Oron L.G.A.

S/N	ITEMS	GROUP	N	X	t-cal	t-crit	REMARKS
1	Presentation of instructional contents in textual with projector	Teachers Students	40 400	4.73 2,70	10.58	1.96	S
2	Presentation of instructional contents in audio with projector	Teachers Students	40 400	4.53 2.67	9.76	1.96	S
3	Presentation of instructional contents in video with projector	Teachers Students	40 400	4.48 2.68	9.50	1.96	S
4	Presentation of instructional contents in slides with projector	Teachers Students	40 400	4.57 2.70	9.91	1.96	S
5	Presentation of instructional contents in animation with projector	Teachers Students	40 400	4.42 2.68	9.19	1.96	S
6	Multimedia projector is used in projecting assignment	Teachers Students	40 400	4.43 2.70	9.12	1.96	S
7	Multimedia projection is used in introducing lesson	Teachers Students	40 400	4.47 2.71	9.24	1.96	S
8	Multimedia projection is used in introducing lesson	Teachers Students	40 400	4.65 2.81	8.66	1.96	S
9	Multimedia projection is used in class discussion	Teachers Students	40 400	3.92 2.77	9.60	1.96	S
10	Multimedia projection is used to display instructional	Teachers Students	40 400	4.36 2.79	9.68	1.96	S

materials

The result in table 3 reveals that the difference in the responses of the two groups were statistically significant in all the items on multimediaintegration for improving quality teaching and learning process with calculated t-value ranging from 8.66 to 10.58 and critical t-value of 1.96 at 0.05 at 438 df. Since all the calculated t-values are greater than the critical t-value at 1.96 .05 alpha level, it implies that there is a significant difference in the mean responses of the teachers expected performance rating and students' performance rating, hence the null hypothesis which states that there is no significant difference in the mean response of teachers and students on the extent of multimedia integration for improving quality teaching and learning process in secondary schools in Oron L.G.A. is rejected and the alternative accepted.

Research Hypothesis 2: There is no significant difference in the mean response of teachers and students on the extent of interactive white board integration for improving quality teaching and learning process in secondary schools in Oron L.G.A.

Table 4: Summary of t-test analysis of the difference in the mean responses teachers expected performance rating and students' performance rating in extent of interactive white board integration for improving teaching and learning process in secondary schools in Oron L.G.A.

S/N	ITEMS	GROUP	N	X	t-cal	t-crit	REMARKS
1	Interactive whiteboard is used to present concepts in class	Teachers	40	4.18	7.05	1.96	S
		Students	400	2.79			
2	Interactive whiteboard is used to illustrate concepts in class	Teachers	40	4.18	7.24	1.96	S
		Students	400	2.76			
3	Interactive whiteboard is used to present lessons from the internet in class	Teachers	40	4.75	10.25	1.96	S
		Students	400	2.81			
4	Interactive whiteboard is used to communicate at the level of all students in class	Teachers	40	4.63	9.44	1.96	S
		Students	400	2.70			
5	Interactive whiteboard is used to scaffolds instruction to help students reason and develop problem-solving strategies.	Teachers	40	4.20	7.29	1.96	S
		Students	400	2.79			
6	It is used to orchestrates effective classroom discussions, questioning, and learning tasks that promote higher-order thinking skills	Teachers	40	4.73	10.45	1.96	S
		Students	400	2.73			

7	It is used to integrate a variety of learning resources with classroom instruction to increase learning options.	Teachers Students	40 400	4.23 2.70	7.72	1.96	S
8	Interactive whiteboard is used to integrate the application of inquiry skills into learning experiences	Teachers Students	40 400	4.15 2.69	7.52	1.96	S
9	Interactive whiteboard is used to clarify and shares with students learning intentions/targets and criteria for success.	Teachers Students	40 400	4.30 2.67	8.37	1.96	S
10	Interactive whiteboard is used to provide meaningful learning opportunities for students.	Teachers Students	40 400	4.27 2.72	8.06	1.96	S

The result in table 4 reveals that the difference in the responses of the two groups were statistically significant in all the items on interactive white board integration in the teaching and learning process with calculated t-value ranging from 7.05 to 10.45 and critical t-value of 1.96 at .05 at 438 df. Since all the calculated t-values are greater than the critical t-value of 1.96 at 0.05 alpha level, it implies that there is a significant difference in the mean responses of the teachers expected performance rating and students' performance rating, hence the null hypothesis which states there is no significant difference in the mean response of teachers and students on the extent of interactive white board integration for improving quality teaching and learning process in secondary schools in Oron L.G.A. is rejected and the alternative accepted.

Discussion of Findings

The result in table 3 reveals that the difference in the responses of the two groups were statistically significant in all the items on multimedia integration for improving quality teaching and learning process with calculated t-value ranging from 8.66 to 10.58 and critical t-value of 1.96 at 0.05 at 438 df. Since all the calculated t-values are greater than the critical t-value at 1.96 .05 alpha level, it implies that multimedia integration in the teaching and learning process are highly necessary for effective teaching and learning process in secondary schools in Oron L.G.A. This study is in line with the early work of Inam (2022) investigate the effect of multimedia instructional approach on students' academic performance in chemistry in secondary schools in Mkpat Enin Local Government Area. The result of findings indicated that there was a significant difference in mean performance scores of students taught the concept the of hydrocarbons using graphics and animation instructional strategies

in favour of graphics instructional strategy. The result of findings is also in accordance with the results of previous study of Ojelade andAregbesola(2020) who revealed that graphics instructional design proved superior in eliciting higher achievement and students' retention in science. Therefore, it is obvious that instructional designs encourage hands on learning and also it is vital for students' high retention and enhances academic performance in science concept.

The result in table 4 reveals that the difference in the responses of the two groups were statistically significant in all the items on interactive white board integration in the teaching and learning process with calculated t-value ranging from 7.05 to 10.45 and critical t-value of 1.96 at .05 at 438 df. Since all the calculated t-values are greater than the critical t-value of 1.96 at 0.05 alpha level, it implies that Interactive Whiteboard integration in the teaching and learning process are highly necessary for effective teaching and learning process in secondary schools in Oron L.G.A. This finding agrees with AlAdl and Ahmed (2019) who found that there was significant difference in the mean scores of students' academic performance with the use of interactive whiteboard. On the contrary Itighise (2016) found that teacher do not make adequate use of interactive Whiteboard for instructional delivery process in Akwa Ibom State University.

Conclusion

Based on the findings of the study, it was concluded that the use multimedia and interactive whiteboard integration are highly necessary for effective teaching and learning in secondary school in Oron Local Government Area. It is importance to note that Educational Technology gadget usage for instructional delivery process improvesstudents' academic performance in Secondary Schools in Oron Local Government Area.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Teachers should use varied multimedia technology while delivering lessons to the students. This would make students to easily understand difficult concepts in science.
2. The teachers should have adequate knowledge of computer to be able to carry out the teaching of the science concept using multimedia and interactive whiteboard, graphics and animations.
3. Materials with today's technology for teachers should be chosen and developed by Education Policy makers, the technological groundwork of the schools should be

improved and schools should be designed in a way to present opportunities for elearning use

4. Curriculum developers should develop instructions that would improve students' knowledge by laying more emphasis on the use multimedia and interactive whiteboard for instructional delivery process.
5. Conferences, seminars and workshops should be organized by government and schools to prepare teachers on how to include interactive whiteboard, multimedia tools such as graphics and animation in science concept teaching.

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