

Utilization of Interactive Whiteboard Model and Achievement in Social Studies Junior Secondary School Students of North Central Nigeria

¹Akpanudi Godswill Asuquo, ²John Yahaya Along, ³Danjuma Sani Usara, ⁴Joshua Garba Dodo & ⁵Mohammed M. Bawa

¹Department of Curriculum Studies and Educational Technology, School of Education

²Department of Christian Religious Studies

^{3,4&5}Department of Social Studies, School of Secondary Education, Arts and Social Science Programmes, Federal College of Education Kontagora

Article DOI:

10.48028/iiprds/esjprcd.v11.i2.03

Keywords:

Utilization, Interactive Whiteboard Model, Achievements, Social Studies, Junior Secondary School Students

Abstract

This work studied the influence of interactive Whiteboard Instructional Model Utilization on Achievement in Social Studies among JSS 2 students of North-Central zone, Nigeria. It adopted a Quasi-Experimental study with 2 x 2 x 2 x 3 fractional design, representing two groups of experimental and control, two levels of gender, and location and 5 age groups. The working population of the study was 126,895 students with 69,824 Males and 59,117 females drawn from JSS 2 classes within six North Central states. A sample group of 524 was used in the study, drawn using purposive sampling technique where one school each was selected from both rural and urban centers in four states, which were selected using simple random sampling technique. Intact classes were used after satisfying all the six (6) condition for being selected to match the purpose with four (4) contacts each teaching one of the three topics selected to be used with Interactive Whiteboard, while the fourth day was for evaluation. Data was collected using a 20 item objective test tagged "Interactive Whiteboard and Social Studies Performance Test (IWBSSPT). Split half reliability coefficient method was used to test the reliability of the instrument. Test method was used to administer the instrument. Test retest method was adopted to the four (4) hypotheses while ANCOVA was adopted to analyse the data. It was recommended among other things that Interactive Whiteboard and corresponding accessories should be provide in all schools in North-Central Nigeria to Sharpen learners' manipulative skills.

Corresponding Author:

Akpanudi Godswill Asuquo

Background to the Study

The world is witnessing great revolution in scientific and technological development. Evidence has shown that different nations and societies are experiencing the pervasive use of technologies such as the internet, social networking tools, cell phones, video games and e-mails for communication purposes. Educationally, it has been observed that there is a wider application of computers to instruction, which enhance teaching/learning and students' performance. Past technologies such as chalkboards, mass-produced textbooks, and bound notebooks have had a dramatic impact on the way teachers deliver textual information to students in Nigeria. Later, the addition of pull down maps, overhead projectors, filmstrip projectors, and tape recorders changed the way students heard and visualized information in the classroom. As technology advances, school systems introduced televisions, calculators, computers, Laser Disks, and most recently, Interactive Whiteboards to the classroom. Advances in technology have impacted on the way information is disseminated and have affected the way teachers educate school children in most secondary schools in Nigeria. With each of these educational technological facilities, teachers have been given new tools that can be used to teach and deliver contents in the classroom.

The addition of this instructional technology Interactive Whiteboard allows the teacher to establish a student-centered teaching environment since it allows students to interact and visually represent information in real-time. On the opposite end of the spectrum, some teachers have only overhead projectors with acetate slides, and the core of their instructional time is centered on teacher-driven paper and pencil activities (Peck, Cuban, and Kirkpatrick 2002). Not only is the presence of instructional technology in classrooms equally presenting the fact that many teachers may not have received training in the pedagogical use of these devices. Instructional technologies like Interactive Whiteboards, wireless tablets, and Interactive Student Response Systems (ISRS), have only become prominent in the classroom within the last three to six years because of increased funding opportunities. Very few secondary schools and even universities are now beginning to train their teachers on how to implement interactive devices, softwares, and pedagogical techniques that can be used with Interactive Whiteboards to enrich the curriculum.

An Interactive Whiteboard is a solid board with a white mat surface that looks very similar to a dry erase board. The board usually has an arm extending from it holding a digital projector that projects the image of the computer's desktop onto the mat surface. The teacher uses the large touch surface to interact with the computer and the Interactive Whiteboard software that comes with the device. An Interactive Whiteboard allows a teacher to manipulate text and images in real-time, as well as make annotated notes on projected content that can be viewed and saved for students to review later. With a large viewing surface, the Interactive Whiteboard provides a central location in the classroom for students to observe and interact with contents. This allows the entire class to focus on a singular point and promote student-centered group interactions. An Interactive Whiteboard, in conjunction with its software allows teachers to make full interactive pages that can animate, display documents, link to websites, view movies and allow annotation on documents and web pages (Koehler and Mishra, 2004). Ibe-Bassey (2012) recognizes that Instructional Whiteboard allows touch

control of computer applications; can show anything found in a computer screen. Students can draw, write, manipulate on the whiteboard. This supports the tenets and objectives of Universal Basic Education (UBE) of which Social Studies is a core component. The Objectives amongst other things are: basic literacy and numeracy, manipulative and communication skills.

Guskey (2000), observed that Interactive Whiteboards were originally developed for office settings and are a relatively new addition to education; they are referred to as Smartboards or Electronic Whiteboards. They are devices that connect to a computer, a multimedia projector and a touch screen electronic whiteboard. The user can control and manipulate the projected images through the software installed on the computer. An Interactive Whiteboard is an instructional tool that allows computer images to be displayed onto a board using a calibrating pen or digital projector. The instructor can then manipulate the elements on the board by using his finger as a mouse, directly on the screen. Items can be dragged, clicked and copied and the teacher can handwrite notes, which can be transformed into text and saved. Holmes (2014) opined that, Interactive Whiteboards are powerful tools in the classroom adding interactivity and collaboration, allowing the integration of media content into the lecture and supporting collaborative learning is its core value in the classroom. When used innovatively, they create a wide range of learning opportunities. However, in many environments, they are not being used to their full potential, and in many cases acting as glorified Chalkboards.

An Interactive Whiteboard can be a cost saver as this technology demonstrates how one computer can provide learning stimuli for a whole classroom (Merriam, Caffarella and Baumgartner (2007). This is more cost-effective than equipping an entire Information Technology (IT) room, or every student with a laptop. It promotes creative teaching and motivates students into absorbing information. Teaching with an Interactive Whiteboard allows lecturers to accommodate all the different learning styles. The teacher can call upon the students to interact with the Whiteboard by themselves. The teacher can sit on the computer, with the student on the whiteboard, and the class offering suggestions and contribution ideas (McDiarmid and Ball 2012). This technology makes the one-computer classroom a workable instructional model. Imagine taking a class on a photo safari to Africa complete with embedded videos, animal sounds and mapping software. It is against this backdrop that the study was conducted to determine the influence of Interactive Whiteboard on student Performance in Social Studies.

Statement of the Problem

Poor performances in Social Studies among the basic learners, especially in affective and psychomotor domains are very alarming. Our nation still wallows in a growing state of maladaptive behaviors of the citizenry, in spite of the efforts in Social Studies which is aimed at producing conscientious, functional and effective citizens. The subject has existed for about six decades, competing above the present average life expectancy level of Nigeria which stands at 54 in 2021 (NPC, 2021) meaning that it is no more a new discipline. Its impact on the nation can now be assessed correctly.

But worst still, the overall performances of junior secondary II Social Studies students in most north central of Nigeria states have continued to undermine the educational system and has placed most students in this zone in disadvantaged position, since students cannot measure up with their counterparts in other states of the federation. The issue of poor performances of students in Social Studies has made most teachers, parents, schools and the various communities to raise questions about the falling standard of education and achievement in Social Studies. In an apparent bid to solve the above problem, government in this zone has taken some positive steps such as: furnishing schools with functional laboratories, employing qualified and experienced teachers, providing textbooks among others.

In spite of these efforts, there is still low and poor performance. The poor performances among Junior Secondary Students have been attributed to poor instructional strategies, like poor use of chalkboards, lack of projectors and other instructional media and delivery strategies, among others. Equally, studies have provided evidence on the role of parenting styles, socio-economic status, and teacher's personality on the performances of students. However, not much work has been carried out in the area of the teachers teaching technology; especially the Interactive Whiteboard. The problem of this study put in a question is: Can the use of Interactive Whiteboard Instructional Model Influence Students' performances in Social Studies in North- Central Zone of Nigeria

Objectives of the Study

The objectives of this study are to:

1. Examine the influence of Interactive Whiteboards on students' performance in Social Studies.
2. Examine the influence of gender difference in the use of Interactive Whiteboard on students' performance.
3. Investigate the influence of school location on performance of Social Studies students taught with Interaction Whiteboard.
4. Determine the influence of students' age on the use of Interactive Whiteboard and their performance in Social Studies.

Research Questions

The following research questions are formulated for this study:

1. What is the difference in performance between Social Studies students taught with and without Interactive Whiteboard?
2. What is the difference in performance of male and female Social Studies students taught with Interactive Whiteboard?
3. What is the difference in performance of Social Studies Students from rural and urban secondary schools taught with Interactive Whiteboard?
4. What is the influence of student's age on the use of Interactive Whiteboard in relation to their performance in Social Studies?

Research Hypotheses

The following null hypotheses are formulated to guide this study:

1. There is no significant difference between Social Studies students taught with and without Interactive Whiteboard.
2. Male students do not differ significantly from female students in their performances in Social Studies when taught with Interactive Whiteboard.
3. Students from urban areas do not differ significantly from those from rural areas in their performances in Social Studies when taught with Interactive Whiteboard.
4. There is no significant relationship between age and academic performance of students taught with Interactive Whiteboard.

Research Methodology

The design of the study is quasi-experimental in nature specifically with the non-equivalent control group design. Intact classes were randomly selected so that normal class activities may not be disrupted. The study was specifically pretest post-test non-equivalent control group design.

The area of the study comprised of Junior Secondary Schools II in the North-Central zone including Federal Capital Territory (FCT) covering the six (7) states and Federal Capital Territory (FCT). The states include: Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and Federal Capital Territory (FCT), Abuja.

The population of this study comprises of all Junior Secondary school two students (JSS II) in the second year of the Upper Basic level in the six states and FCT in the North Central Zone of Nigeria comprising of 80,611 males and 70,645 females, making a total of One hundred and fifty-one thousand, two hundred and thirteen (151,213) JSS II students. Sample of was therefore drawn from four states, including: 48 from Abuja, 70 from Kogi, 77 from Kwara and 60 from plateau states. The sample of this study comprises of two (2) schools in each of the four states purposively selected from the six states of the North- Central zone of Nigeria and the FCT. 524 students were sampled, males were 275 and females 249. Coincidentally, a total of 275 students were selected across the intact classes as experimental group (those taught with Interactive Whiteboard) while 249 represented the intact classes for control (those taught without IWB) from four (4) of the six states and FCT.

A 20 item Interactive Whiteboard and Social Studies Performance Test (IWBSSPT) was designed to cater for the peculiarities of the sampled learners. The data for this study were analyzed using Mean and Standard Deviation to answer the research questions raised, while the Null hypotheses formulated for the study were tested using Analysis of Covariance (ANCOVA) at $p < 0.05$ level of significance using pre-test as covariate.

Data Analysis and Results

The data obtained in this study were analysed and the results presented in tables in this

chapter. Such results were used to answer the research questions as well as for testing the hypotheses.

RQ 1: What is the difference in academic performance of Social Studies Students taught and without Interactive Whiteboard?

Table 1: Mean (\bar{x}) Scores of students by treatment for pre and post-tests

Treatment		Pretest	Post -test	Mean gain
Experimental (Interactive White Board)	N	2.75	2.75	
	Mean (X)	6.84	10.94	4.10
	Std. Deviation	3.235	3.911	
Control (Without Interactive White Board)	N	2.49	2.49	
	Mean (X)	6.48	9.51	3.03
	Std. Deviation	3.315	3.871	

The result on table 1 shows that the pre-test mean scores for experimental and control groups are 6.84 and 6.48 respectively. However, the post-test mean scores stand as 10.94 and 9.51 for the experimental and the control groups respectively. A mean gain of 4.10 was obtained by the experimental group which is higher than 3.03 mean gain obtained by the control group. This shows that the academic performance of students taught with the use of interactive white board was better than those taught without Interactive Whiteboard.

RQ 2: What is the difference in academic performance of Male and Female Social Studies Students taught with IWB?

Table 2: Means (\bar{x}) scores of Male and Female students taught with IWB (Experimental Group)

Students	N	Means(\bar{x})	Std Dev.	Std Error	Mean df	t	Sig(2 tailed)	Mean dff
Female	154	10.78	3.959	.319	273	.777	.438	.37
Male	121	11.15	3.855	.350				

Table 2 reveals that the male students had a higher means score of 11.15 while their female counterpart had 10.78 mean score. The mean score difference is .37. This is not a significant mean score difference. This implies that the use of IWB benefited both male and female students in Social Studies. Below is the graphical representation of the male-female academic achievement presented as figure 1.

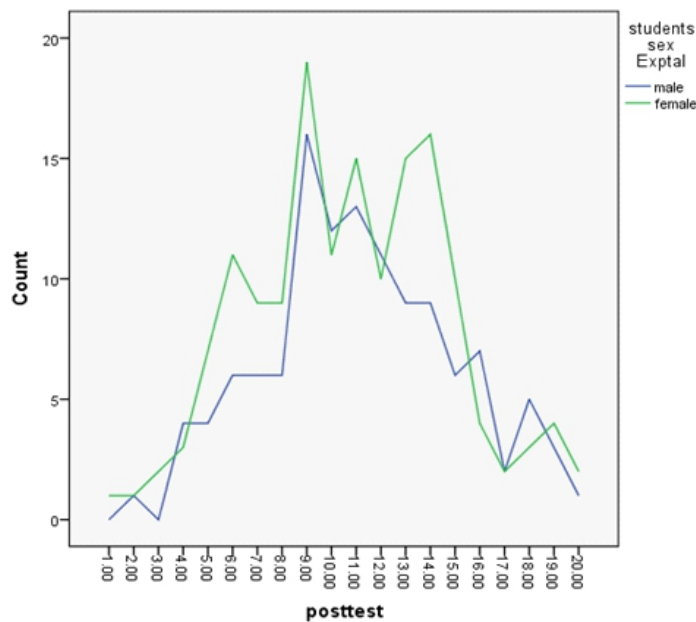


Figure 1: Mean scores of Male and Female students in IWB group

RQ3: What is the difference in academic performance of Social Studies Students from rural and urban secondary schools taught with IWB?

Table 3: Mean (\bar{x}) score of students in Urban and Rural Secondary Schools in IWB group

School Location	N	Means(\bar{x})	Std Dev.	Std Error	Mean df	t	Sig(2 tailed)	Mean dff
Urban	147	10.86	3.962	.327	273	-.777	.701	-1.11
Rural	128	11.04	3.865	.342				

Students taught with IWB in the urban secondary schools had a mean score of 10.86 while those in rural secondary schools obtained a higher score of 11.04, with a mean difference of 1.11. This shows that there was no significant mean difference in the performance of social studies students taught with IWB in both the Rural and Urban Secondary Schools. Figure 2 gives a graphical outlook of their academic performance.

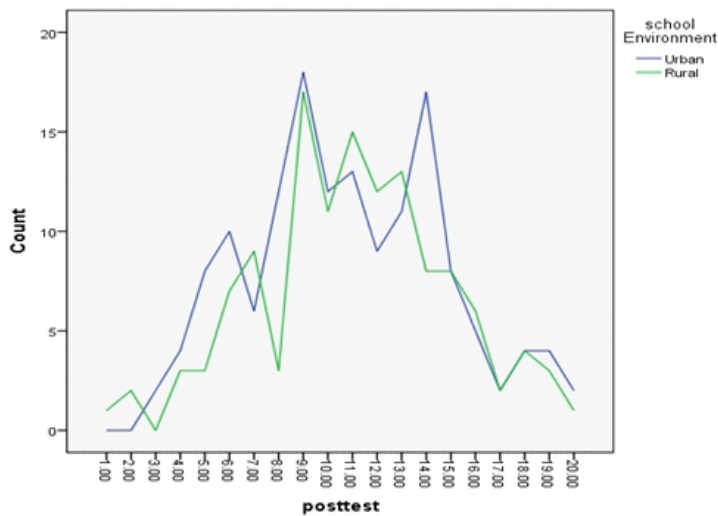


Figure 2: Mean scores of Students in Rural and Urban Secondary School

Q4: What is the influence of Age on the use of IWB in relation to students' Academic performance in Social Studies?

Table 4 reveal the summary of student's academic performance relative to their age using IWB.

Table 4: Mean (\bar{x}) scores of students relative to Age in IWB group

Students Age	N	Means(\bar{x})	Standard Deviation
12.00	51	10.75	2.915
13.00	101	11.31	4.063
14.00	72	11.41	4.031
15.00	33	10.44	3.634
16.00	18	7.67	.559

Table 5: ANOVA of students' Academic Performance relative Age

Source of Variance	Sum of Square	df	Mean Square	F	Sig Posttest at Student Age
Between Group (Combined)	84.901	4	21.225	1.388	.242
Within Groups	1804.091	118	15.289		
Total	1888.992	122			

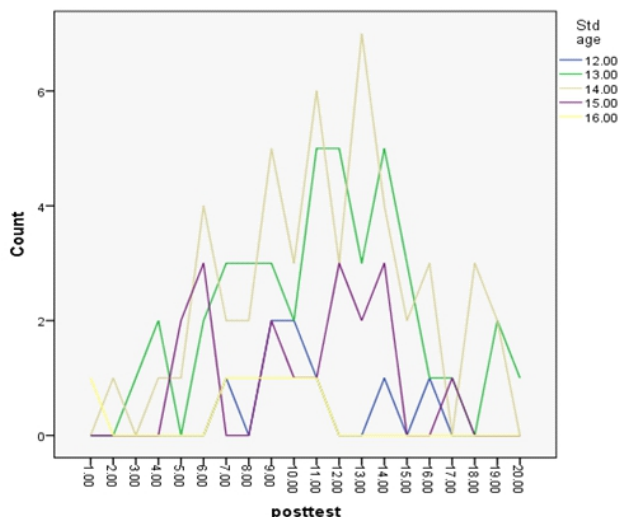
It is revealed on table 5 that the academic performance of Social Studies students taught with IWB through their mean scores has 10.75, 11.31, 11.41, 10.44 and 7.67 for age 12, 13, 14, 15 and 16 respectively.

Table 5 provides an F ratio of 1.388 at $p = .242$. This implies that there was no significant difference also in the academic performance of social studies students relative to their ages.

Figure 3 displays the spread of students' performance with age.

- Analysis - Means (\bar{x})
- t test
- ANOVA
- Graphical (line graph)

Mean



Testing of Research Hypotheses

1. There is no significant difference between the performance of students' taught with and without Interactive Whiteboard.

Table 6: Shows performance of students taught with and without Interactive Whiteboard.

Treatment		pretest	posttest
Experimental (Int Wht Brd)	Mean	6.8364	10.9418
	N	275	275
	Std. Deviation	3.23509	3.91099
Control without Wht Brd	Mean	6.4779	9.5141
	N	249	249
	Std. Deviation	3.31549	3.87101
Total	Mean	6.6660	10.2634
	N	524	524
	Std. Deviation	3.27531	3.95328

Table 6 above shows that there is a statistically significant difference between Social Studies students taught with and without Interactive Whiteboard in their performances at JSS2 level

in North-Central Nigeria. This is because the mean scores and standard deviation of Social Studies students taught with interactive Whiteboard scored 10.94 and 3.911 respectively, whereas those taught without Interactive Whiteboard scored $x = 9.51$ and $SD = 3.891$ with $t = 4.194$ at $P < .05$ ($P = .000$) hence, the null hypothesis was rejected.

2. There is no significant difference on the performance of male and female students taught with Interactive Whiteboard.

Table 7.

Gender	N	(X)	SD	Std error mean	Df	t-cal	Sig. (tailed)	Mean diff
Male	121	11.15	3.855	.350	273	.777	.436	.37
Female	154	10.75	3.959	.319				

Table 7 above shows that there is no statistical significant difference between male and female students taught with Interactive Whiteboard in their performances at JSS2 level in North-Central Nigeria. This is because the mean score and standard deviation for male students on Performance in social studies taught with Interactive Whiteboard which was 11.15 and standard deviation 3.855 did not differ significantly from that of the female students with mean score of 10.75 and standard deviation of 3.959. also, the calculated P value of .436 is greater than 0.05 level of significance, while t-calculated value of .777 is less than the t-critical value at $df = 273$. Hence, the hypothesis was accepted.

3. There is no significant difference on the performance of students in the urban and rural areas in social studies when taught with Interactive Whiteboard.

Table 8.

School Environment	N	(X)	SD	Std error mean	Df	T	Sig. (tailed)	Mean diff
Urban	147	10.86	3.962	.327	273	-.384	.701	-.18
Rural	128	11.04	3.865	.342				

The results on table 8 shows that there was no significant difference in the mean scores of the urban and rural students in their performances when taught with Interactive Whiteboard in North-Central Nigeria ($t\text{-cal} = 384$ at $p > .701$). Therefore, the hypothesis was accepted.

4. There is no significant difference in the performance of students in Social Studies when taught with Interactive Whiteboard according to Ages.

Table 9.

Source of variation	Sum of squares	(X)	SD	F	Sig
Between groups	84.901	10.86	21.225	1.388	.242
Within groups	1804.091	11.04	15.289		
Total	1888.992				

The results in table 9 shows that $F = 1.388$ at $P > .242$ which is less than alpha at significant level of .05. This reveals that there was no significant difference in the performance of students based on their age differences in Social Studies when taught with Interactive Whiteboard. This outcome is affirmed by the result on table 4.5 which indicates that student's performances in social studies had no age advantage or disadvantage. Hence, the null hypothesis of no significant difference in the performance of students in Social Studies when taught with IWB based on their ages is therefore rejected at $p < 0.05$.

Summary of Findings

Based on the analysis of the result presented in the study, the following major findings were made:

1. Interactive Whiteboard enhanced students' performance in Social Studies than traditional instructional method.
2. Interactive Whiteboard encouraged better performance in male students over the female ones in Social Studies though not significantly.
3. Interactive Whiteboard motivated students from rural areas to perform better than those in the urban areas in Social Studies though not significant. This implies that if Interactive Whiteboard is used in teaching students, their performances will be enhanced and more students will excel in examination irrespective of their location.
4. Interactive Whiteboard enhanced students' performance relative to age difference significantly conferred by Social Studies.

Conclusion

This study was carried out to investigate the influence of Utilization of Interactive Whiteboard (IWB) Instructional Model on Performance in Social Studies among JSS2 Students in North Central Nigeria. The study which was conducted on JSS2 students of 2018/2019 academic year revealed as follows:

That Utilization of Interactive Whiteboard Model enhances students' performance in Social Studies than the traditional Instructional Materials, methods and models. This agrees with the research findings of Pomy Kala (2015) in Mathematics, which 56% of the students agreed that Interactive Whiteboard is very useful, while only 11% thought they would have done better without it. Interactive Whiteboard instructional model is a haven of motivation and encourages participation of learners in the class.

Utilization of Interactive Whiteboard Instructional Model encourages better performance of male students over their female counterparts though insignificantly. This finding suggests that female students within the North Central Nigeria are not properly motivated to be at par with their male counterparts. However, since the pretest scores has also shown a general difference in the performances of both males and females, it therefore means that there was male dominance during lesson participation. This calls for more inclusive strategies in dispensing learning materials and motivation to make the females rise to such occasions. Joyce et al (1997) and Thophy (1999) support this position when they avered that teachers should theoretically be able to respond to the needs of individuals, subgroups and whole class, by drawing upon, then developing and utilizing a range of sound materials in support of logical and reasoned learning. That is the new world order which emphasizes equitable supply of cultural and economic materials and opportunities without geographical, economic, religious, gender physical or other social barriers (Okorodudu and Okorodudu, 2003)

Interactive Whiteboard utilization motivates students from rural areas to perform better than those within urban areas in Social Studies though with thin differences. Many factors can be said to affect learning in time and places. Teacher factor, environmental factor learner factor as well as channel factor among others. This result proves that there were a one or set of factors that distorted learning in the urban centers than in rural areas. Normally, one would have expected the reverse, but Akpanudi (2022) believes that Social Studies begin with affective domain (readiness, interest and motivation), its message packages must match the learners, the level to which social studies messages are internalized and used in life depends on how important the message is to their lives, future and personality as well as on the teacher's relationship with the learners, etc., and that Social Studies messages are greatly influenced by the type and manner the instructional materials are utilized. The challenges of the urban students may not be far from either or all of the above. The level of anxiety may also be a strong reason for that sharp disparity in performance in favour of rural students. Normally, urban students show less anxiety in use of gadgets than the rural ones who may have a feeling that that may be their only opportunities to use some facilities, especially as the instruction was packaged by the researchers.

Interactive Whiteboard enhances students' performance relative to age difference significantly as confirmed in this Study. Age, learning contents and materials are mutually interdependent. According to Ebong and Bassey (1997) age determines the things to love and to abhor. One may come to abhor the very things he or she liked as a child while growing. Often times, adolescence interfere with learning and motivation. The extraordinary difficult circumstances of the sampled ages 12 to 16 in the study, and the level of maturity and control of learning depend on them. Iheanacho (2002) considers these variables of age, adolescence and maturity when he said that they can make or mar learning.

Educational development has witnessed advancements, especially in the utilization of gadgets and their appropriate instructional models. Teachers of yesteryears have found themselves in a fix, emanating from their positions as immigrants in the global digital

superhighway. Even the parents and relevant governmental authorities believe that learners should be launched into the position of the natives, in same digital superhighway within the global village square. Interactive Whiteboard and its instructional model are found to be a veritable gadget to answer this questions, beginning from the basic level of learning, through the post basic, the pre-degree and even the postgraduate levels. Instructional systems designers and users have found the interactive whiteboard as useful instructional tools that not only appeal to, and compel the manipulative skills of learners, but provide a multimedia and multi-tasking platform for learning within the online environments and offline opportunities. This research work has proven that both the male and female gender, rural and urban environments as well as learners within and between the piaget's concrete (7-11) and formal (12 above) cognitive levels can find this instructional model very useful in their pursuits of productive learning, both within the North Central and the whole Nigeria.

Recommendations

From the findings above, and the conclusions reached from this study, the notable recommendations are as follows;

1. Interactive Whiteboard and corresponding accessories should be provided in all schools in North-Central Nigeria to sharpen learners' manipulative skills.
2. Government should ensure that network is constant between and among component parts of each state to allow teachers utilize the smart prospective of interactive whiteboard.
3. Workshops and seminars should be organized from time-to-time to help teachers operate and utilize the new media and corresponding applications especially, the instructional whiteboard.
4. Media manipulation and utilization should be integrated into the core of education to stem the tide of functional instruction mismatch with education, the socio-cultural and economic qualities.
5. Computers should be installed in all basic schools, and instructors trained to balance access and opportunities to gain computer literacy and transfer same knowledge to identifying and manipulating IWB icons.

References

- Akpanudi, G. A. (2022). *Social studies practicum and teaching technology: insight, materials and skills*, Federal College of Education, Okene Publishing Press, Okene, Kogi State.
- Federal Republic of Nigeria (2021). *National policy on education*
- Guskey, T. R. (2000). *Evaluating professional development*, Thousand Oaks, CA: Corwin Press.
- Holmes, M. R. (2014). Interpersonal behaviours and their relationship to the and pedagogical orientations of adult educators. *Adult Education*, 3(10), 18-29.
- Ibe-Bassey, G. S. (2012). 35th *Inaugural lecture series. Educational technology: The teaching – learning process and the falling standard of education in Nigeria*.
- Iheanacho, R. A. E. (2002). *Psychology of learning*. Owerri; G.O.C. International Publishers
- Koehler, M. J., Mishra, P., Hershey, K., & Peruski, L. (2004). With a little help from your students: A new model for faculty development and online course design, *Journal of Technology and Teacher Education*, 12(1), 25-55.
- Mayer, (2001). Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide (3rd ed.)*, San Francisco, CA: Jossey-Bass.
- Mcdiarmid, G. W. & Ball, D. L. (2012). Many moons: Understanding teacher knowledge from a teacher education perspective, *International Journal, of Education Technology*, 2(2), 23-37.
- Okam, C. C. (1998). *Readings in the social studies curriculum in Nigeria*. Jos, Deka Publications.
- Peck, C., Cuban, L., & Kirkpatrick, H. (2002). High-tech's high hopes meet student realities, *Education Digest*, 67 (8), 47-54.