International Journal of Humanities Social Sciences and Education (IJHSSE)
Volume 2, Issue 9, September 2015, PP 122-126
ISSN 2349-0373 (Print) & ISSN 2349-0381 (Online)
www.arcjournals.org

Nigerian Undergraduate Students' Attitude to the Use and Integration of Interactive Whiteboard for Instruction

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Abstract: *In most advanced countries classrooms, the interactive whiteboards have replaced the traditional whiteboards. However, the developing nations' classrooms across all levels are also catching up with this trend.*

This study investigated undergraduate students' attitude to the use and integration of interactive whiteboard for teaching and learning, after a thirteen weeks exposure to a 200 level faculty based compulsory, two-unit course. One hundred and ninety nine (199) out of three hundred and twenty two (322) students who registered for the course at Northwest University, Kano, Nigeria were randomly selected for the study. In addition, two null hypotheses were formulated and tested for this study. The findings showed that there was no significant difference in male and female students' attitude, while a statistically significant difference was recorded for those that are young and the elderly. Young students developed more favourable positive attitude to the use and integration of interactive whiteboard for learning. Recommendations were made accordingly based on the findings.

Keywords: *Attitude, Integration, interactive whiteboard, instruction.*

1. INTRODUCTION

"Necessity is the mother of invention". This maxim explains the dynamics of change in every area of life, including education. The globe is experiencing the advancement of technology, and its application in all spheres of life. Technology has made the whole world to be a global village.

Jukes (2008) pointed out that right from the early 1990s to early 2000s; the entire globe started experiencing a digital revolution which includes the pervasive use of the internet, cell phones, e-mail, video games and social networking tools. Consequently, the world became technologically super charged until this day.

The field of education, and instruction in particular had been having a great feel of these technologies. Some of the above mentioned technologies were aptly applied into instruction. Also, researches had been conducted, and is still being conducted on the effects of these technologies on teaching and learning. Educationists are greatly concerned on how these technologies could help in improving the teaching-learning process across the various levels of the educational system.

1.1. The Problem

In the higher institutions of learning, the lecture method is probably the oldest, well known and widely used method of imparting knowledge. The lecturer dominates the exercise with or without the learners' involvement (Ajelabi, 2005). This method makes teaching to be teacher centred .As a result, students are usually passive, bored and probably, not motivated to learn. Students' commitment to learning is doubtful. Interactions with lecturer and peers are minimal. At times, these disengaged learners exhibit off task behaviours such as distracting other students, playing with their mobile phones, i-pads, tablets or even chatting with their peers. Consequently, this affects their attitude to learning, and this in turn automatically affects their academic achievement**.**

1.2. Need for the Study

Since it has been discovered that lecturing makes students passive learners, and not engaged for a meaningful learning, there is a need to examine how we can modify the lecture method in higher institutions of learning with the application of modern technological devices, using the interactive board. This study is carried out to investigate how the use of technologies (interactive whiteboard)

can help learners in tertiary institutions engage in a classroom lesson, receive significant attention, commitment, as well as interact more with their lecturers, in spite of the teaching methodology, adopted by the lecturer.

There is a need to state at this juncture that though 'the first electronic interactive whiteboard was introduced in America in 1991' (Lopez and Diogo, 2011), the higher institutions in Nigeria did not experience its installation into the lecture rooms until about 2005 and beyond. Northwest University in Nigeria commenced teaching activities in 2013, and the lecture rooms were fitted with the interactive whiteboards same year, but, they were underutilized. Since the researcher is trained on, and efficient with its utilisation, it was deemed fit to use it effectively in the delivery of a course during the semester.

This study therefore is carried out to examine the attitude of the students to the use and integration of the interactive whiteboard for teaching and learning at the end of a course of study.

2. LITERATURE REVIEW

Smart Technologies (2003) refers to interactive white boards or smart boards as 'a brand of interactive white boards (IWB) that displays image(s) from the computer monitor with the surface operating as a giant touch screen....and can be mobile or wall mounted.' For its operation, one may decide to control the computer from the board or, by touching the interactive board screen either directly with the finger or one of the incorporated electronic pens.

The interactive board performs a range of tasks much more than the chalkboard. The teacher can 'write on the interactive white board's large touch-sensitive surface with the electronic pen, drag and drop images or text, interact in many ways such as pressing icons to hear pre-recorded sounds ... engage with multi-media educational activities, watch simulations and view graphics, capture texts or areas of screen and annotate with the pen as well as save notes, drawings or annotations for future use' (Smart Technologies, 2004).

Various individuals and groups in some advanced countries had carried out some researches on the application of the interactive white board for instruction. There is a need to mention that most of the researches were basically concerned with the utilisation of the equipment in teaching kindergarten, elementary and secondary school pupils. In addition, most of these works were interested in achievement, and not the attitude of learners to the technology. Also, there is a limited research carried out with the adult learners serving as subjects.

Oleksiw (2007) studied the effects of the introduction of an Interactive whiteboard on raising State test scores by enhancing motivation, attentiveness and comprehension in a grade three mathematics class. His findings were that there was statistically significant interactions between whiteboard use and grade levels. Also, the interactive board proved to be an effective tool that amplified motivation, stimulation and understanding in mathematics. Research on the use of interactive board is also extended to students with special needs. Zirkle (2003) carried out a study on the effects of the smart board on high school students with special needs in a functional mathematics class. His key finding was that the interactive whiteboard was a positive tool for assisting in the maths achievement of special needs students in a functional math class.

Furthermore, Min and Siegel (2011) reported a study exploring the influence of interactive whiteboard on students engagement and perception of classroom activities. Students perception were measured via questionnaire. Observation results revealed that effective teaching without technology, can promote above average levels of students engagement.

2.1. Hypothesises

Two null hypotheses were postulated for this study:

- There will be no statistical significant difference in the attitude of male and female students on the use and integration of the interactive whiteboard for instruction
- There will be no statistical significant difference in the attitude of the young and the elderly students on the use and integration of the interactive whiteboard for instruction.

3. RESEARCH METHODOLOGY

3.1. Subject

This study was conducted in Northwest University, Kano. It is one of the newly established state owned universities in Northern part of Nigeria. The students' population was made up mostly of Northerners (North west geo-political zone) , and few from other parts of the country. All the level 200 students with a total population of three hundred and twenty two (174 males and 148 females) with ages ranging between seventeen and forty five years constituted the study. Out of this number, a total of one hundred and ninety nine students (110 males and 89 females) whose age range between eighteen and forty two , and, who enrolled for the 2-unit, level 200 compulsory faculty course titled Media and Methods constituted the sample for the study .The subjects were randomly selected.

3.2. Instrument

The major instrument constructed by the researcher, and which was used in this study for data collection was a questionnaire titled 'Students Attitude Towards the Use of Interactive whiteboard for Learning (SATIWB)' scale .It is made up of an 18- item likert type attitude questionnaire which varies from strongly agree to strongly disagree. Nine of the items connote positive attitudes, while the rest connote negative attitudes towards the use of the interactive board for learning the course EDU 2202: Media and methods. The instrument was content validated. The reliability co-efficient was found to be 0.86.

3.3. Procedure

Prior to the resumption for the 2013/2014 academic session, the researcher organised a one-day intensive training on the use of the interactive whiteboard for all the thirty two academic members of staff. Furthermore, when it was few days to the commencement of lectures, the researcher met with four junior academic members of staff (who I do mentor) and carried out further intensive training on the use of the interactive whiteboard. After this training, the course outline of EDU212 was discussed with the rest of the team. All of them were briefed on the methodology of lesson delivery. The method adopted was basically learner-centered (a total departure from the conventional method, which was lecturing).

The students were taught the course named above for a period of 13 weeks. The researcher and four other lecturers always meet few days before the week's lecture to harmonise the lesson delivery. Thereafter, the students were met once in a week for two hours interaction. The 322 students (average of 65 in a class) were distributed into five groups, with each lecturer rotated to teach across the groups. This was done in consideration of the mode of lesson delivery. The lectures were presented via the interactive white board, and the students were kept busy with different and varying activities, based on the content of each lesson. Some of the activities included quizzes, writing and/or typing of answers on the board, selecting pictures, drawings etc from the gallery, searching into lesson activity toolkit for enhancement of lessons, solving problems, watching videos and discussing them etc.

At the end of the 13- week lectures, the questionnaire was personally administered to the randomly selected subjects by the researcher with support from two members of the team.

4. RESULTS

The results regarding the first hypothesis which states that 'there will be no statistical significant difference in the attitude of male and female students on the use and integration of the interactive whiteboard for instruction', showed that there was no significant difference as shown in table 1

Table1. *Means, Standard deviation and t-test analysis on male and female students' attitude on the use of interactive whiteboard for instruction*

Students	N	X	S.D	T – value
Male	110	60	1.3	1.23
Female	89	59.4	1.5	

Df = 197, t-calculated = 1.23, t critical at 0.05= 1.66

Since t calculated (1.23) is less than the t critical score (1.66) i.e 1.23< 1.66, we conclude that there is no significant difference. Hence, the first null hypothesis is accepted.

Regarding the second null hypothesis which states that "there will be no statistical significant difference in the attitude of the young and the elderly students on the use and integration of the interactive whiteboard for instruction ", the results showed that a significant difference was recorded as shown in table 2.

Table2. *Means, Standard deviation and t-test analysis on young and elderly students' attitude on the use of interactive whiteboard for instruction.*

Students	N	X	S.D	T – value
Young	119	63.4	2.14	7.32
Elderly	80	52.1	2.06	

Df = 197, t-calculated = 7.32, t critical at 0.05= 1.66

Since t- calculated (7.32) is greater than t-critical (1.66); it shows that there is a significant difference. Therefore, null hypothesis 2 is rejected.

5. DISCUSSION

From the findings, we can see that there was no significant difference in the attitude of male and female students to the use of the interactive whiteboard for learning. This was revealed in table 1. The students developed lots of interest in using the interactive whiteboard for learning. They were quite happy to learn this course with the use of the interactive whiteboard. This was because during their first year of study, they were taught all courses by different lecturers who adopted lecture method, without the use of any form of technology. Also, this method of learning is rarely implemented in any of the courses that they were exposed to, even at level 200. The researcher observed that the students were always excited during lessons, and always look forward to subsequent classes. Consequently, 98% of the students responded positively to the item seeking their response on "I would like to receive all my lectures from lecturers who makes effective use of the interactive whiteboard". Another factor which must have made them to develop favourable attitude was the fact that they were always busy with different activities, interacted with the lecturer and their peers as well as the advantage of having opportunities to air their views and opinions on the topic being taught. This supported the view of Preston and Mowbray (2008) who said that the interactive board provides teachers and students with a whole new interactive learning environment to share ideas, information, images, animation and videos.

On the other hand, table 2 revealed a statistical significant difference in the attitude of the young and the elderly in the use of interactive whiteboard for learning. The younger students (18 – 29 years) showed more favourable positive attitude to learning via the use of the interactive whiteboard more than the elderly (30 – 42years). What must have been responsible for this? One of the main reasons responsible for this is that some elderly students have phobia for technologies, and are finding it difficult to embrace a technological revolution change. Also, few of this elderly students are teaching in primary schools, and they are used to utilising the chalkboard. In addition, some of them are just learning how to effectively use other modern technologies like the i-pad, i-phone, laptops and other gadgets. The researcher did observe that whenever few of these elderly students are called upon to come and do one activity or the other on the interactive whiteboard, they were always reluctant to do so. As a result, the researcher had to motivate and give them more support in this area. The younger ones exhibited a more positive attitude because we can refer to them as "the next generation" which started between early 1990s and 2000s, coinciding with when some of them were born and growing up. Small and Vorgan (2008) refers to them as 'digital natives', and the elderly as 'digital immigrants'. Right from a tender age, the younger ones had integrated technology into various aspects of their lives. Consequently, they tend to process information faster than the elderly.

6. CONCLUSION

This study examined the attitude of undergraduate students to the use of interactive whiteboard for instruction. The researcher analytically discuss the perception of the students. From the discussion, one can deduce that the students (male, female, young and elderly) do develop a much favourable positive attitude to learning one of their compulsory faculty based courses with the adoption of the interactive whiteboard.

The above notwithstanding, one needs to point out that this equipment is available in some lecture rooms in Nigeria, but it is not adequately and judiciously utilised based on some of these reasons:

inadequate and lack of energy supply, lack of trained manpower to use it, laziness on the part of some lectures to prepare a quality, interactive lesson as well as lack of maintenance. Although, some Universities are yet to purchase it, some that had purchased it had turned them to whiteboard where they write on it, using permanent board markers, thereby destroying the surface.

7. RECOMMENDATIONS

Since this research had proved that Nigerian undergraduate students are keen on their lecturers utilisation of the interactive whiteboard for instruction, based on the students' favourable attitude, it is hereby recommended that lecturers should adopt the use of interactive whiteboards in the delivery of their lessons. Considering the advantages which are over and above the conventional method of lecturing, it would be of great benefit to our students if all lecturers adopt and incorporate its proper usage, as it would enhance teaching and learning. Probably, it would reduce the rate of failure in most courses.

There is a need for change in the method of instruction, thereby breaking the monotony of lesson delivery. Since the students had indicated their willingness and interest to learn through the use of interactive whiteboard, lecturers and administrators should help to bring out the potentials in our students so as to fully maximise today's technologies.

REFERENCES

Ajelabi,A. (2005) *Essentials of Educational technology*. 2nd Edition. Lagos: Raytel Publications

Jukes,I. (2008) *Understanding digital kids: Teaching and Learning in the new digital landscapes.* Available at: http://www.hmleague.org/digital 20kids.pdf. (Accessed 23rd May 2014)

Min,K and Siegel,C. (2011) Integration of smart board technology and effective teaching, *Fairfield University Magazine* ,54 (7), pp 62-68

Oleiksiw, T (2007) the effect of the interactive whiteboard on raising state test scores, *Journal of Research on Technology in Education*, 42 (3), pp285-307

Preston,C and Mowbray L (2008) Use of Smart board for teaching, learning and assessment in Kindergaten Science, *Journal of Primary Science Education* ,54 (2), pp 45-53

Small,G and Vorgan G (2008) *Brain: Surviving the Technological alteration of the modern mind.* New York, NY: Harper Collins publishers inc.

Smart Technologies (2003). From http:// www.SMARTtech.com

SMART-Technologies (2004) Interactive *whiteboards and learning; A review of classroom case studies and research literature (White paper)*

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