

EFFECTS OF E-ANIMATED INSTRUCTION ON PRIMARY SCHOOL PUPILS' ACADEMIC PERFORMANCE IN COMPREHENSION READING IN ONDO STATE, NIGERIA

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ABSTRACT

With the advancement in the field of Information Communication Technology (ICT), traditional method of teaching and learning may no longer suffice. The current generations of learners are “digital natives” and any Teachers that want to be relevant in this era must key into the current thinking of using technology to pass across knowledge. With this in mind, this paper examined the effects of E-animated instruction on primary school pupils' comprehension reading in Ondo State. The study adopted a quasi-experimental research design involving pre-test and post-test groups. The populations for the study consist of all the primary school pupils in Akoko South West Local Government Area, Ondo State, Nigeria. Two public and two private primary schools were purposively selected for the study while the sample size was one hundred (100) primary Five (5) pupils comprising forty-seven male and fifty-three female who were randomly selected into experimental and control groups. The experimental group was taught using e-animated comprehension instruction while the control group was taught with the conventional method. The research instrument used for data collection was a comprehension passage extracted from the pupils' textbook and re-invented in e-animation mode through the help of a programmer. Two research questions were raised while two research hypotheses were tested. The research questions were answered using mean and SD while t-test statistic was used to test the hypotheses at 0.05 level of significance. The findings show that e-animated instruction enhanced the academic performance of primary school pupils' comprehension reading. On the basis of these findings, it was recommended among others that teachers take advantage of the various tools provided by ICT in instruction delivery as this will set the pace for other electronic learning among pupils.

Keywords: E-animation, primary school, reading comprehension, pupils, electronic learning, ICT

INTRODUCTION

Primary education is the foundation upon which all other levels of education are built and almost all nations of the world place utmost priority on education at this level because education of the young ones can drastically transform the society in all ramifications. According to UNESCO (2012), primary school children must acquire some set of skills that will enable them adjust to and compete in the rapidly changing environment of the contemporary world. These skills

include communication, analytical and problem-solving skills for creativity, flexibility, mobility and entrepreneurship. Therefore, the educational strategies that teachers adopt must be such that focus on how learners can adjust to new lifestyle concept and corresponding skills development alongside technological innovations. Put differently, government and stakeholders in education should consider Information Communication Technology (ICT) as a significant part of early childhood education.

Information and Communication Technologies (ICTs) is an umbrella term for a wide collection of computer-based technologies including digital tools, which are exploited to support teaching and learning, communication and collaboration, self-expression, creativity, etc. This implies that ICT are used for the promotion of all developmental domains of children, and learners of any ages (UNESCO, 2012). ICT tools for learning include desktops computers, laptops, projectors, digital cameras, and video games. Digital application tools like computer animation are among the new innovative strategies that some teachers have been adopting as instructional strategies especially for both native speakers and the non-native speakers of English at the primary school levels. Corroborating this, Hammond cited in Blundell, Lee and Nykvist (2016:1) observes that the integration of digital technologies in schooling is positioned as a mechanism for educational reform via transformation of teacher practice and to actualize digital learning.

As Ofodu (2012) rightly submits, children are by nature very active and can hardly be kept and made to learn in a monotonous and boring classroom. Their experiences in the language classrooms should be fun filled and be related to real life situations. It is believed that instructional media such as digital technologies like e-animation could be deployed by teachers to facilitate learning among all categories of learners especially among primary school learners of English as a Second Language (ESL). It is believed that animated pictures provide additional information and give external support for mental simulations thereby allowing the learner to perform a higher amount of cognitive processing. Thus, effective utilization of digital tools like e-animation can contribute to clarity of instruction among other advantages mentioned above.

Given the importance of these tools in language teaching, the pertinent questions that beg for answers are: do teachers use these digital tools in ESL and reading instruction? Are computers made available in Nigerian schools? This study is set to provide answers to these questions and more.

LITERATURE REVIEW

Animation and Classroom Instructions

Animation simply refers to the pictures that appear and can move in sequences when played. According to Harrison and Hummell cited in Khalidiyah (2015: 29), animation is a quick display of a sequence of static images that create the illusion of motion. An animated film is one in which puppets or drawings appear to move. Baglama, Yucesoy and Yikmis (2018) perceive animation as a ‘ technical process that, in general, produces motion illusion in the viewer by sequencing the still images produced in the analogue or digital environment in sequence’. They

further explained that animation is included in the genre of film as the 3D animated films can be enjoyed by viewers of all ages. These scholars and many more agreed that animation facilitate instructional delivery, make a complex concept simple, motivate learners to read, increase message accuracy, make learning more enjoyable, aid retention and recall and ultimately improve learners' academic performance (Ainsworth, 2008; Shreesha & Tyagi, 2016).

A related empirical study on the use of animation in classroom pedagogy is that of Khalidiyah (2015). The study examined the use of animated video in improving 7th grade junior high school students' reading skill, with a view to determining the effectiveness of using animated video as a media in improving students' learning outcomes in reading instruction and to find out the students' responses towards the use of animated video instruction. The researcher used independent t-test to analyze the students' outcomes of reading test (pretest and posttest) and to also compare the means between the control class and the experimental class. The results showed that the use of animated video in learning reading has a great advantage as most of the subjects agreed that animated video helped them to improve their reading comprehension because the video motivated, and stimulated their interest and also raised their curiosity. The study shows a great difference in the pre-test and posttest scores of learners in the control and experimental classes. The experimental group had higher scores in post-test – Target off block time (Tobt: 20,484) than the control group (Tobt: 7,603). Thus, using animated video in reading instruction proved more effective than the conventional method.

Shreesha and Tyagi (2016) examined the efficacy of use of animation instructional material in facilitating primary school pupil's learning of three different subjects—Mathematics, Science, and Language. The subjects were streamed into experimental and control groups. The experimental group was taught with animation while the control group received placebo. The cluster sampling technique was used to select pupils in 2nd, 3rd and 5th grades from two schools in Karnataka (India) putting into consideration the learners' diversity in the geographical area, educational standard, socio-economic condition and their technological exposure. Pupils in each of the classes were divided into control and experimental groups. Animated instructional materials were prepared on the selected topics for the 3 subjects. The selected topics that the researcher used for the experimental group were covered in animation content while the control group was exposed to charts, games and chinks and talk method. One of the outcomes of the study was that students' performance in the 3 subjects improved with the use of animation. The results of learners show that those in experimental group and control groups recorded mean scores of 8.36 and 11.44 respectively, thus showing that students' performance in language was enhanced with the use of animation instructional strategy. The findings on the effect of animation on the 3 subjects revealed that students' performance was higher in Science than Mathematics. In language as a subject, the animation contents were interactive, and so, learners enjoyed the lesson and gains in language were higher than the other 3 subjects.

It is in view of the above that this study hypothesized that e-animated instruction would generate the same kind of results on pupils' reading skills. Reading is an integral part of language that cannot be over sighted. It is a key skill for learners and without it students cannot function efficiently and successfully in the world. Reading is a dynamic process in which readers network with text to reenact authors' message (Kelly, 2007). To Dechant (2006), it is a process which is complete only when comprehension is attained. In the light of this background,

therefore, the whole essence of reading is premised on readers' comprehension of authors' intents. In other words, comprehension is the only reason why we engage in reading activity. Agreeing with this, Carroll (2009) establishes that reading comprehension involves the following:

- knowledge of the language to be read
- ability to separate words into component sounds
- ability to recognize and discriminate the letters of the alphabet
- understanding of the correspondence between letters and sounds
- ability to recognize printed words from a variety of cues
- ability to comprehend text etc.

In essence, reading provides experience which on the long run expands pupils' academic horizons; identifies, extends and deals with their personal interests.

As a potent tool of instruction, reading comprehension activities could be used to examine a wide range of linguistic abilities in pupils. These abilities, according to Liles (1993), concern story structure, discourse features (e.g. coherence and cohesion), morpho-syntax, complex syntax, lexis and uniquely bilingual phenomena such as code-switching and cross-linguistic interference (Gagarina, Klop, Kunnari, Tantele, Valimaa, Balčiūnienė, Bohnacker, & Walters, 2015). It is effective in assessing pupils' language competence because, when pupils are asked to reenact what they have read in typical passages, their various linguistics deficiencies are made manifest. Hence, as Gagarina *et al* (2015) submit, asking pupils to reconstruct authors' message provides a rich source of data about a child's language use in a relatively natural context.

However, as prominent as reading comprehension is to students' learning, different encounters with primary school pupils overtime revealed that the comprehension reading aspect of language skill is an insurmountable task for primary school learners of English as a second language. In most cases, majority of them (pupils) struggle to decipher author's thoughts and consistently showed "deficits in comprehension" (Westerveld and Gillon, 2008:24). These deficits may not be unconnected with teachers' lack of digital strategies to facilitate primary school pupils' reading comprehension skills. For example, Ofodu (2012) study shows that though many teachers in the primary schools utilize instructional strategies such as play way, demonstration, storytelling and songs in their language classroom, many of them are not conversant with the use of media resources like digital technologies to facilitate instruction. It becomes expedient therefore to examine the effects of e-animated instructions on primary school pupils comprehension reading in Nigeria.

Animation and Gender

Although e-animated instruction contributes immensely to concepts comprehension, there are other variables that influence pupils' reading comprehension skills. One of them is learner's gender. In this study, gender refers to whether the pupil is a male or a female. Akabogu and Ajiwoju (2015) examined the influence of gender and school location on students' English vocabulary development in Akoko South East, Ondo State, Nigeria. Eighty six (86) students were selected from two schools. The data collected were analyzed using ANCOVA. The study reveals that gender had significant effect on students' achievement in English vocabulary. The

male students have a mean gain score of 21.40 and the female students have a mean gain of 18.09. The result shows that male students performed slightly better than their female counterparts. Against the view that female will perform better in linguistics skills, some scholars argue that there will be no significant difference in the comprehending ability of male and female students when they are exposed to the same language environment. Onyishi Mefoh and Onyishi (2019) in their study investigated the effects of reinforcement; gender and locality on children's recall ability. A total of 160 students, comprising of 80 males and 80 females participated in the study. The study reveals that there was no significant main effect of gender on the pupils' achievement. This implies that gender influence in linguistics ability is inconclusive. This study therefore seeks to establish whether gender affects pupils' reading comprehension or not particularly when animated instructional strategies are used.

The foregoing literature review shows the application of 21st century technology, especially digital tools like e-animation in the reading and writing skills (literacy skills) of primary learners. As far as the researchers are aware, none of these previous studies have investigated the effects of the use of e-animation instruction on primary school pupils' reading comprehension in Akoko South West Local Government Area, Ondo State, Nigeria. This therefore provides the rationale for this study which is carried out to fill the existing research gap.

Research Question

The study sought to provide answers to the following research questions:

- i. What is the effect of E-animated instruction on primary school pupils' comprehension reading in Akoko South West Local Government Area, Ondo State, Nigeria?
- ii. What effect does gender have on students' mean achievement in comprehension reading?

Research Hypotheses

The following hypotheses were tested in the study:

- i. There is no significant difference in the mean comprehension reading achievement score of primary school pupils' skills taught using E-animated comprehension passage and those taught with the conventional method.
- ii. There will be no significant difference in the mean achievement scores of male and female students if taught comprehension using e-animated comprehension instruction.

RESEARCH METHODOLOGY

This study adopted a quasi-experimental design. More specifically, pretest-post-test nonrandomized group design was used. Post test scores were used for this study. Intact classes were used by the researchers in order to avoid disruption of the normal academic programme of the schools. The population of the study was all the primary school pupils in Akoko South West Local Government Area, Ondo State, Nigeria while two primary schools were purposively selected for the study—one for experimental control group

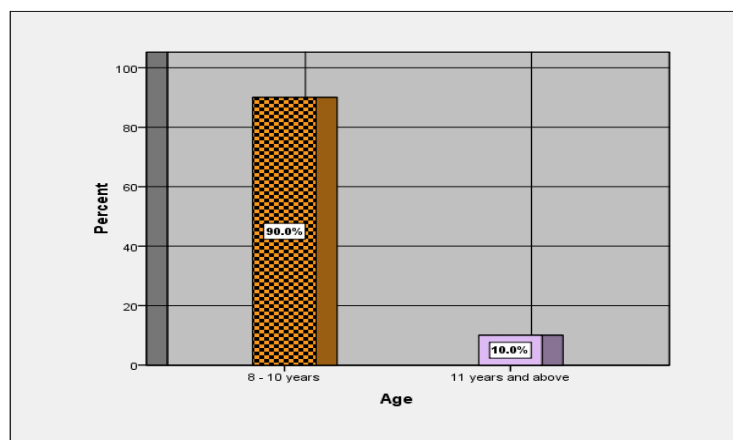
respectively. Availability of functioning computer laboratory in private schools necessitated the choice of private schools as the experimenter group while public primary school served as the control group. The sample size was 100 primary 5 pupils comprising forty-seven (47) male and fifty-three female, purposively selected from Primary five pupils because they have spent more years in school and have just a year to graduate from school. From each of the schools, fifty pupils (50) were selected to make the total of one hundred (100). The study utilized two instruments – a comprehension passage extracted from their textbooks (Macmillan English for Primary 5) for those in control group and e-animated comprehension instruction for the experimental group. Those in the control group were made to read the comprehension passage and then, answer the questions beneath the passage. The same passage was utilized for the experimental group, but this time around in e-animated mode.

Cartoon characters were created and the storylines were re-invented in E-animation mode. Pupils in the experimental group were exposed to E-animated instruction daily for six weeks. This was done to familiarize the pupils with the new method of instruction. The test was administered to both groups for practice purposes. To avoid possible bias and control Hawthorne's effect, the school teacher did the actual teaching of the control and the experimental groups. The study utilized the same lesson contents developed by the researchers for the teachers. After the period of six weeks of teaching the pupils, the subjects of this study (both the control and experimental group) were made to answer questions based on the passage. The questions were open questions; such that allow the subjects to make inputs based on their experiences. The results from the post-test were used and are discussed in this study. The research questions were answered using mean and standard deviation while the hypotheses were tested using t-test at 0.05 level of significance.

RESEARCH FINDINGS

Table 1: Frequency Distribution showing Respondents' Age

Age	Frequency	%
8 - 10 Years	90	90.0
11 Years and above	10	10.0
Total	100	100.0



The age distribution revealed that 90% of the sampled respondents were within the age groupings of 8 and 10 years, while 10% were above 10 years of age.

Table 2: Frequency Distribution showing Respondents' Gender

Gender	Frequency	%
Male	47	47.0
Female	53	53.0
Total	100	100.0

Figure 2: Bar Chart showing Respondents' Gender

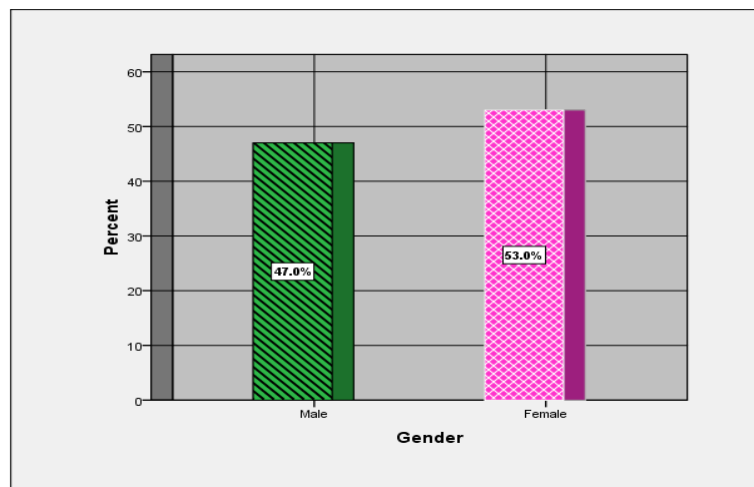
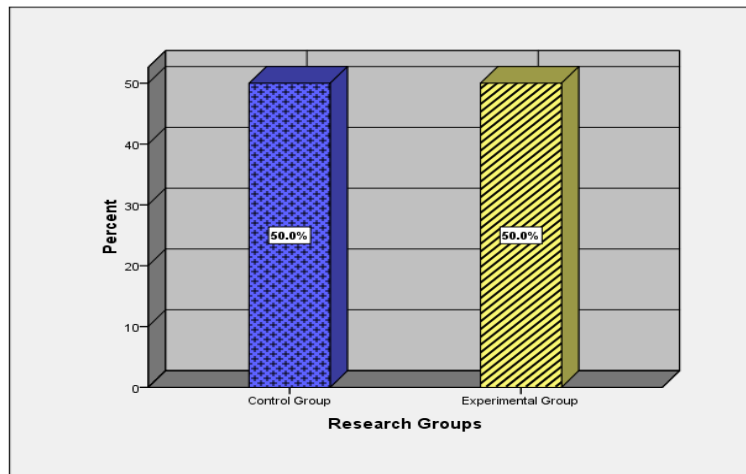


Table 2 and Figure 2 revealed that 47% of the respondents were male pupils, while 53% were females. This implied that both male and female pupils participated in the study.

Table 3: Frequency Distribution showing Respondents' Research Groups

Group	Frequency	%
Control Group	50	50.0
Experimental Group	50	50.0
Total	100	100.0



The distributions of the respondents into control group (that is that group taught with conventional method of teaching) and experimental group (that is the group taught with E-animated comprehension passage) revealed that 50% of the responding pupils were in control group, while 50% were in experimental group.

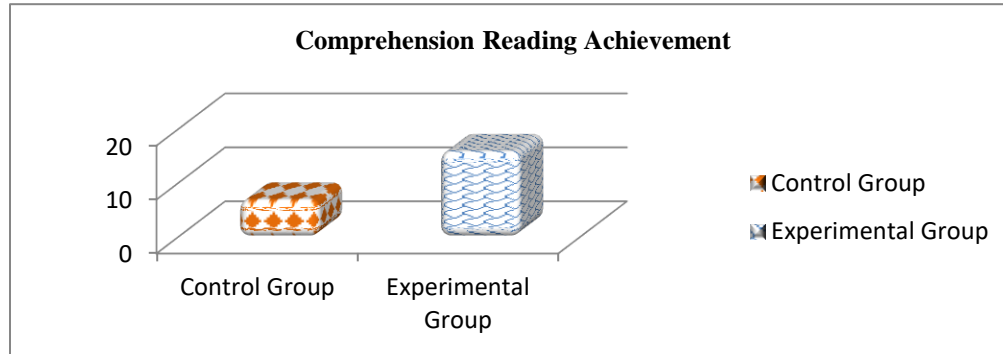
RESULTS

Research Question 1: What is the effect of E-animated instruction on primary school pupils' comprehension reading in Akoko South West Local Government Area, Ondo State, Nigeria?

Table 4: Mean and Standard Deviation showing the difference in Achievement scores based on teaching methods

Research Groups	N	Mean	Std. Deviation
Control Group	50	6.86	1.485
Experimental Group	50	15.84	2.773

Figure 4: Bar Chart showing Mean differences in Teaching Methods on Comprehension Reading Achievement



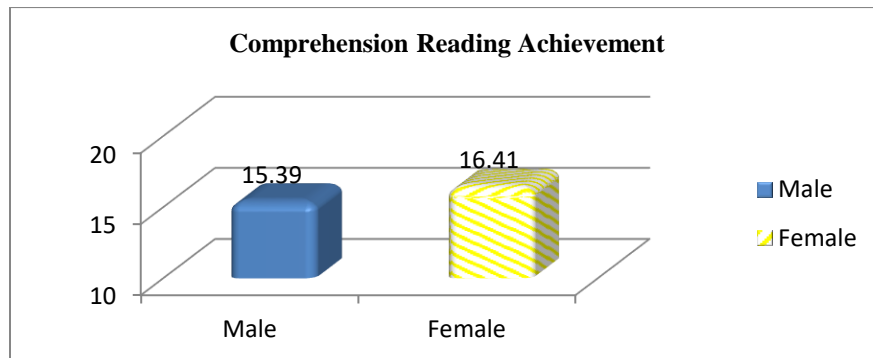
The findings revealed a large difference between the achievement of pupils in the control group and experimental group. This was in such a way that pupils who were exposed to e-animated instruction (experimental group) have higher and better post-test mean scores of ($\bar{X}=15.84$) compared to those taught with the conventional methods (Control group) ($\bar{X}=6.86$).

Research Question 2: What effect does gender have on students’ mean achievement in comprehension reading?

Table 5: Mean and Standard Deviation showing difference in achievement scores based on pupils’ gender

Gender	N	Mean	Std. Deviation
Male	28	15.39	2.615
Female	22	16.41	2.922

Figure 5: Bar Chart showing Gender Mean differences on Reading Comprehension



The result on gender differences indicated that female pupils taught comprehension reading with E-animated instruction ($\bar{X}=16.41$) performed slightly better than their male counterparts taught with same method ($\bar{X}=15.39$). This means that E-animated comprehension instruction influenced female pupils' comprehension reading than their male counterparts.

Testing of Hypotheses

Hypothesis 1: There will be no significant difference in the mean achievement scores of primary school pupils taught reading comprehension with e-animated instruction and those taught with the conventional method.

Table 7: Independent T-test showing the difference in Teaching Method on Comprehension Reading

	Research Groups	N	Mean	SD	df	T	P
Academic Achievement	Control Group	50	6.86	1.485	98	-20.189	< .05
	Experimental Group	50	15.84	2.773			

The result indicated that e-animated instruction had significant influence on primary school pupils comprehension reading [$t(98) = -20.189$, $p < .05$], as pupils that were taught comprehension reading through conventional method ($\bar{X}=6.86$; $SD=1.485$) performed below their counterparts taught with e-animated instruction ($\bar{X}=15.84$; $SD=2.773$). This implied that e-animated comprehension instruction has significant influence on the pupils' comprehension reading. Therefore, the formulated null hypothesis 1 was rejected.

Hypothesis 2: There will be no significant difference in the mean achievement scores of male and female students if taught comprehension reading using e-animated instruction

Table 8: Independent T-test showing the difference in Comprehension Reading based on Gender

	Gender	N	Mean	SD	Df	T	P
Academic Achievement	Male	28	15.39	2.615	48	-1.295	> .05
	Female	22	16.41	2.922			

Table 8 indicated that gender had no significant effect on pupils' comprehension reading [$t(48) = -1.295$, $p > .05$]. This implied that male pupils with a mean score of 15.39 ($SD=2.615$) do not significantly differ from female pupils with mean score of 16.41 ($SD=2.922$). This confirmed null hypothesis 2 and it was accepted.

DISCUSSION

The result of the study revealed that there is significant difference in the comprehension reading of pupils (control and experimental) prior to the use of e-animated instruction strategy. As revealed in the findings of the study, pupils in the experimental group grasped the ideas, ideologies and concepts typified after being exposed to e-animated instruction. This result is in agreement with the findings of Khalidiyah (2015) who found out in his studies that the use of animated video improved 7th grade junior high school students' reading skill. E-animated instructions are effective in teaching owing to their ability to capture and hold attention as well as provide direct interaction of pupils with what is learnt. The use of animation instruction is effective and resulted to more learning in short time and makes the students remember what is learnt. E-animation instructional package provides experience not easily obtained through other media; contribute to the efficiency and variety of learning. In the same vein, the findings of this study is in consonance with the findings of Shreesha and Tyagi (2016) who examined the efficacy of use of animation instructional material in facilitating primary school learners' learning of three different subjects—Mathematics, Science, and Language. The results of their study show that students' performance in language was enhanced with the use of animation instructional material.

Furthermore, the study also shows that gender had no significant effect on pupils' comprehension reading. The result of this study is in dissonance with the findings of Akabogu et al (2015) whose study reveals that gender had significant effect on students' achievement in English vocabulary. However, the findings of this study is in line with the findings of Onyishi *et al.* (2019) who found out that there was no significant main effect of gender on the pupils. Hence, pupils' gender has no significant effect on pupils' comprehension reading.

CONCLUSION

The need for teaching the new emerging societies reading with innovative devices cannot be under emphasized, most especially in the new normal. Reading opens the windows of information to pupils and it is the major channel through which pupils learn. This study further strengthened the argument for effective utilization of ICT paraphernalia in the teaching enterprise. The study indicated that the use of E-animated instruction in teaching primary school pupils enhanced their comprehension reading. In the same vein, the results of the findings indicated that gender had no significant effect on pupils' comprehension reading.

RECOMMENDATIONS

On the basis of the findings of the study, the following recommendations were made: Reading comprehension should be made a subject in elementary schools given the understandable roles in formal education. In the same vein, Teachers should be encouraged to present some of their instructions in animated modes. By so doing, learning would appeal and become interesting to the learners, most especially those at the elementary schools. Furthermore, government should

ensure equitable distribution of modern learning resources to schools, especially public schools in rural areas for effective learning and teaching. Teacher education curriculum should make educational technology a compulsory course in the teachers' training programme.

ACKNOWLEDGEMENT

My gratitude goes to Emmanuel, Isaac Friday, my supervisee and also my research assistant who enthusiastically handled the experimental group during the course of this study. Thank you, may God bless you.

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