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THE EFFECT OF COMPUTER ANIMATED INSTRUCTIONAL PACKAGE ON THE LEARNING OUTCOMES OF STUDENTS OFFERING CITIZENSHIP EDUCATION IN FEDERAL POLYTECHNIC, IDAH KOGI STATE

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Abstract.
The study examined the effect of animated instructional resources on tertiary students' achievement and interest in Citizenship Education in Nigerian educational system. Three null hypotheses were drawn to guide the study. The study adopted a pretest, post-test, and control group quasi-experimental design. Purposive sampling techniques were used to select the sample size of 110 participants of two intact classes that form the control and experimental groups. The instruments used for data collection was an adopted Citizenship Education Achievement Test (CEAT). Data collected were statistically analyzed with Mean and Standard Deviation, Analysis of Covariance (ANCOVA) and T-test at 0.5 significant levels. Findings from the study revealed that, there was significant difference in the pre-test and post- test mean score of students exposed to computer animated instructional package and then those exposed to conventional method. There was significant difference between the academic achievements of students taught using computer animated instructional package and then those taught using the conventional method. Based on the findings, it was recommended that computer animated instructional packageshould be used for teaching Citizenship Education in Nigerian polytechnic educational sector.
Keywords: Computer, Animation, Tertiary Institution, Instructional Technology, Citizenship Education

Introduction

Nigeria is highly endowed with both human and material resources, and this can be enough to propel the nation's socio-economic and political development. The state had great prospects at independence and was looked up to as leading other African countries out of underdevelopment, poverty, illiteracy and technological dependency. However, the Nigerian State has been finding it difficult to grapple with her footing towards the path of sustainable development since obtaining her Political Independence in 1960. Instead of being a model to other African countries, Nigeria State remains largely a country with high level of economic

backwardness, political instability, high rate of illiteracy and technological dependence with high indexes of corruption, resources mismanagement, misappropriation of funds, terrorism, political manipulation, banditry, kidnapping, cybercrime, farmers/herdsmen conflict, abuse of fundamental human rights and lack of democratic principles (Akinbi, 2017) . All these were as a result of poor leadership, nepotism and systemic mismanagement which have become pervasive in the nation's national life.

In order to address these challenges facing the Nigerian State, the country must be interested in ways and manners its young ones views are prepared for citizenship, and how they learn to take part in civic life. As a course of study, Citizenship Education has become an increasingly important means to educate citizens about their country's history, participatory democracy, good governance, rights, duties and responsibilities (Olawepo, 2017). The introduction of civic education in Nigerian schools came immediately after independence to create the needed awareness of individual person and develop love for the country (Tannenbaum, 2016). To achieve this, the government later introduced the course Citizenship Education in universities, colleges of education and polytechnics in the year, 1992. Nigeria being the largest populated, and one with the most diverse country in Africa, needs to encourage peaceful co-existence among the citizens with different ethnicity, culture, religion and political backgrounds to support the unity of the country (Akinbi, 2017). Government agencies and civil organizations have made concerted efforts to inculcate patriotism, rule of law, human rights, democracy and national consciousness in the minds of the citizens, but they achieved little success (Agbor & Ogbunwezeh, 2017). The aim in introducing Citizenship Education is to teach the youths the spirit of national consciousness and patriotism for their country. In the same vein, Agbor & Ogbunwezeh further revealed that, the objectives for the inclusion of Citizenship Education in the school curriculum are: To re-orientate and educate Nigerian youths on their rights, duties and obligations. It also aims to prepare the youths for leadership roles and further promote national unity, integration and consciousness; to sustain Nigerian democracy and national building; to promote good fellowship among Nigerians; and to build a strong and progressive nation(Agbor & Ogbunwezeh, 2017).

Curriculum is a systematic packaging of learning experiences in terms of knowledge, skills and attitudes provided by the school to achieve pre-determined objectives (Olori, 2007). Curriculum is a document geared towards provision of values and learners to acquire knowledge through organized learning experiences both formal and informal settings. A good curriculum plays significant role in lifelong learning abilities, skills and values such as tolerance, peaceful coexistence, and respect for human rights, democratic principles, citizens' duties, obligations, nationalism, gender equality and social justice (Adepoju, 2011). With the introduction of Citizenship Education in tertiary institutions, studies have shown that students still face with the challenges of understanding the concepts of the subjects, and this showed in their performance in the examinations. Students found some concepts in Citizenship Education so abstract and difficult for easy comprehension, and this could be as a result of poor methodology employed by the teachers (Adelakun, 2015).

It is interesting to note that many students do not have deep understanding of some concepts in Citizenship Education. There are cases in which students do not really have any understanding of some topics in the school curriculum because they are presented by their teachers in abstract instead of concrete, or rather representational mode that leads to real and purposeful experience. This is in line with Mayer (2005), observation that most times, the major reasons students find some topics difficult to comprehend are their perceived neglects, attitude, poor teaching methods and non-use of relevant instructional materials on the part of teachers.

Animation is discovered to be very important package in the teaching and learning process. It provides a learning environment that will help learners to be more active. Steward (2002), stated that the role of animation in the teaching and learning process is rapidly becoming one of the most learning friendly and widely used in classroom. Animation is a Latin word which means to revive or bring life anew. Animation is a process, stripped and detailed form of computer package.

The comprehension need of contemporary students of this computer age can no longer be completely fulfilled by conventional learning framework alone as it has not kept pace with the latest teaching pedagogy (Atadoga and Onalapo, 2008). Thus, Iravani and Delfechresh (2011), affirmed that for effective learning to take place in the tertiary institutions, the conventional teaching should be supplemented with computer animation package. In the same vein, Rias and Zaman (2011), stated that those animation instructions are much better at representing ideas which involve changes over time because of its ability in creating imaginary thinking. Therefore, animation concretizes abstract ideas and increases students' academic potentials. Animated instructional resources reduced the abstract nature of most school subjects, especially in higher institution where students learn with fun, and reduced tensions created in some course work (Sousa, 2011). Animation gives extra interest to students and help for mental recreations; permitting them to perform higher measure of subjective task. The quality of education can be leveraged with the inclusion of animated resources. Animated resources have made it possible for any concept to be presented lively and visually (Adeyemi, 2008).

Through animated instructions, students retain what they learnt for a long period of time compared to oral memorization (Akor, 2011). Furthermore, animated educational resources like videos etc could take away boredom from learners. The limited attention span or lack of concentration from which most students suffer, could be overcome. Rias and Zaman (2011), noted that tertiary students take great delight in watching and sharing memes, videos and animation on social media sites. This implies that animated content deposits a deep-rooted impression on the malleable intellect of students.

The role of animated resources in promoting interest for learning in students, as well as solving societal problems is paramount. It is imperative that teachers and other stakeholders should promote the cause of including animation in tertiary institution's curriculum, most especially in the Nigerian polytechnic system which can be used to enhance the comprehension needs of the students, and which is supported with a documented study (Bezimo, 2018). He submitted that computer animated instructional resources can be used to re-orientate the tertiary students who are always easy and willing tools in the hands of both politicians, and other key players that cause havoc and crime in the society.

Basuki and Anita (2017), opined that students' interest and achievements are enhanced in the combination of asking questions, offering feedback with additional commentary of the teacher. Studies have also shown that the use of animated resources have improved achievement and students' interests (Pumama, Munadi and Miftah, 2014). Animated resources have given every one the opportunity to access the internet, become self-teachers, and have their own television and radio stations. Animation could have positive and negative effects on students.

Positively, It could help students understand difficult lessons by providing videos and memes that give tutorial, techniques and easy way to find a solution to students' problems. However, if not properly guided, students could become addictive to animation. Munir, Pumam and Sadiman (2017), noted that educating students using animated instruction and other visual

aid, have strengthened the component of many tertiary education courses including Civic Education; and today's educators are taking steps to include the animation and other media based tools to improve participation and learning in students. Animation enables inexpensive creation and distribution of academic and educational content. Hashida and Haron (2014), established that students remember only 10% of what they read, 20% of what they hear, 30% of what they see and 50% of what they hear and see (animation).

Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished a specific goals that were the focus of activities in an institutional environment, especially polytechnics colleges and universities. The academic achievement of students is determined to an extent, on many factors for instance, age, environment and instructional method. Students' interest is the state of curiosity or concern about a set objective and the driving force or forces responsible for initiating persistent direction and vigor for goal-directed behavior.

However, it is interesting to note that high level of interest and concentration of students in a particular instructional method of teaching (animated instruction) may not guarantee high achievement ability. Thus, students out of excitement could develop high interest for the novel teaching, and may be carried away by the euphoria, not careful enough to internalize the major facts of the lesson. This could lead to poor achievement event when interest is high. Students develop interest for different reasons which may not be for academic achievement, such as leisure, peer influence, fun and novelty of the method (animation). Therefore, social media tools like animation should not be left out to students' total control as supplementary instructional tools. Teachers need to find out how best to make use of it for the benefits of students.

Objective of the study

The goal of this study was to determine the extent computer animated instructional package can enhance Citizenship Education, students' achievement and interest. Specifically, the study sought to determine:

1. The effectiveness of animated instruction in enhancing tertiary students' achievement in learning Citizenship Education.
2. The effectiveness of animated resources in enhancing tertiary students' interest in Citizenship Education.

Research Question

The study was guided by the following research questions:

1. What is the effect of animated instruction in enhancing tertiary students' achievement in Citizenship Education?
2. What is the effect of animation in enhancing tertiary students' interest in Citizenship Education?

Hypotheses

The following null hypotheses guided the study, and were tested at 0.05 level of significance

Ho_1: There is no significant difference in the mean achievement of students based on computer animated instructional methods.

$H0_2$: There is .no significant difference in the mean interest of students based on computer animated instructional methods.

Research Method

The study adopted a quasi-experimental research design involving two intact groups; one experimental group and the other control group. The study was carried out in Kogi State. The population of the study is made up of 3,456 Citizenship Education students in the Federal Polytechnic, Idah, Kogi State. Purposive sampling techniques was used to sample 110 students from five schools with similar characteristics, while simple random sampling involving balloting, withdrawal and replacement was used for assigning the sampled school for control and experimental groups. The method of instruction employed was animated instructional package and conventional method of teaching Citizenship Education. A simple random technique was used to select intact classes. The sample size was based on the number of students in the intact classes from the sampled schools. One Citizenship Education lecturer from the sampled schools was exposed to the use of animated instruction in implementing Citizenship Education contents, while the other was exposed to the use of conventional method in implementing Citizenship Education contents. The researcher made use of two instruments which were; student achievement questionnaire (SAQ) and student interest questionnaire (SIQ). Two experts, one from Measurement and Evaluation and the other from Social Science Education validated the instrument.

The instrument of Citizenship Education Achievement Test (CEAT) was reviewed by experts for construct and content validity. To establish the reliability of the test items, it was trial-tested on ten ND1 students. Two students from each of the five (5) schools of the Federal Polytechnic, Idah, Kogi State, were selected to participate in the study on the subject of the study. From the students' responses, a reliability coefficient of 0.71 was established using split-half method. Three instructional guides (one for each topic) were prepared based on the ND1 curriculum of Citizenship Education for polytechnic education in Nigeria. The trained research assistants (teachers) in the two schools, strictly followed the instructional guide for the purpose of uniform standard.

Presentation of Results

Table 1: Mean rating and standard deviation of the effect of animated instructional resources in enhancing students; achievementon Citizenship education

	Methods means deviation	**Pre-test mean Deviation**	**Standard Post-Test difference**	**Standard Means**	**Methods means deviation**
Conventional	1.27	0.72	2.64	0.61	1.56
Animated	1.33	0.65	3.51	0.37	2.18

The data above in Table 1, shows the grand mean and standard deviation of the respondents on the effect of animated resources in enhancing students' performance in Citizenship Education in tertiary education in a class where conventional method was employed, students had a grand mean of 1.27 at pre-test with standard deviation of 0.72; whereas at post-test, they had a grand mean of 3.51 with standard deviation of 0.37. The lower standard deviation of students taught Citizenship Education with animated resources shows that, the variability's of their individual mean rating were close to their group mean score compared to their counterpart in the conventional class. Also, the mean difference of 2.18 for the animated resources class and 1.56 for the conventional class, shows that students taught Citizenship Education gained more achievement than their counterparts.

Table 2: The mean rating and standard deviation of the effect of animated resources in enhancing students' interest in Citizenship education

Methods mean	**Pre-test deviation**	**Standard Post-test mean deviation**	**Standard Mean difference**
Conventional	1.79 0.872.11	0.75	0.29
Animated	1.640.893.64	0.381.86	

The data in Table 2 shows the grand mean and the standard deviation of respondents on the effect of animated resources in enhancing students' interest in Citizenship Education. At pre-test, the conventional class had a grand mean rating of 1.79 and standard deviation of 0.87; while at post-test, the conventional class had a grand mean of 2.11 with standard deviation of 0.75. In the class where animated instruction was employed, students had a grand mean of 3.64 and standard deviation of 0.38. The lower standard deviation of students taught Citizenship Education using animated instruction shows that the variabilities of their individual mean rage were close to their group mean score compared to their counterparts in the conventional class. Therefore, the mean difference of 1.86 for the animated resources class and 0.29 for the conventional class, showed that students taught Citizenship Education using animated instruction, developed more interest than their counterparts.

Hypothesis One: There is no significant difference in the mean rating of students' achievement based on instructional methods.

Table 3: t-test of the significant difference in the mean rating of students' achievement based on instructional methods

	Methods means	**Pre-test Deviation**	**Standard Post-Test Deviation**	**Standard Means Deviation**
Conventional	2.86	0.78	3.546	0.018
Animated	**3.62**	**0.37**	**3.51**	**0.37**

The data in Table 3, is the t-test of no significant difference in the mean rating of students' achievement based on instructional methods. The result shows that there was a significant difference in the mean rating of students in conventional class (M = 2.86, SD= 0.78) and animated class (M = 3.62, SD = 0.37); t = (3.546) and p = 0.018. Therefore, the null hypothesis of no significant difference was rejected. Hence, there is a significant difference in the mean rating of students' achievement exposed to Civic Education content using animated package.

Hypothesis Two: There is no significant difference in the mean rating of students' interest based on instructional methods.

Table 4: t-test of the significant difference in the mean rating of students' interest based on instructional methods

	Methods Mean Deviation	**Standard t.df**	**Sig (2-tailed)**	**Remarks**
Conventional	2.75	0.53	2.573	0.036
Animated	3.53	0.38	3.51	0.37

The data in Table 4 above, shows the instructional methods. The result shows that t-test of no significant difference in the mean are so significant difference in the mean rating of students' interest based on the rating of students in the conventional class (M = 2.75, SD = 0.53); and animation class (M = 3.53, SD = 0.38), t = (2.573), p = 0.036. Thus, the null hypothesis of no significant difference was rejected. Hence, there is a significant difference in rating of students exposed to Citizenship Education using animated instructional resources.

Discussion of the Findings

The study revealed that students taught Citizenship Education using animated instructional resources performed highly compared to their counterparts. More so, a further statistical test showed that there was significant difference in the mean of rating students' achievement in support with students taught with animated resources. The success of animated instruction in enhancing students' achievement could be attributed to its ability to use sound and visual, and at the same time, capturing students' sense of hearing and perception. Therefore, integrating animated instructional package, especially in the tertiary institutions will be highly impactful as it will enable students to increase interest and achievement. The finding of this study is in conformity with the findings of Aluko and Beyers (2016), which revealed that the use of animated instructional resources, images, videos and sounds attracted students' attention and increased their interest. The effectiveness of animated instruction could be attributed to its features such as sound and videos that attract students' interest. In the same vein, Atabang & Umanah (2024), reported that students taught through the use of animation showed a remarkable gain in academic performance compared to those in the same course, taught in traditional lecture format. The higher academic performance obtained from the use of computer animated instructional package might be due to their appeal to students' visual abilities, motivation of learners and inducing students' active participation in instructional processes, which ultimately enhanced the retention of lesson content.

Conclusion

The study interrogated the effect and worth of computer animated package in enhancing students' academic achievement. Students exposed to computer animated instructional package in Citizenship Education performed significantly better than those exposed to conventional method of instruction. Therefore, incorporating computer generated animation as a teaching mode is recommended for the improvement of teaching and learning of Citizenship Education in tertiary institutions, most especially in polytechnic educational system in order to promote spirit of nationalism, civic engagement,human rights and participatory governance among the citizens.

Recommendations

(1) Since this study shows improved students' academic achievement when exposed to computer graphics, its application as a teaching strategy should be encouraged by the government, curriculum designer and policy makers among Citizenship Education teachers in Nigerian Polytechnic Educational system.

(2) Research organizations such as Nigerian Educational and Research Development Council (NERDC) should carry out seminars, workshops and conferences to intimate teachers on how to integrate computer animated instructional packagesin the teaching of Citizenship Education.

(3) The Federal and State Ministry of Education should sponsor Citizenship Education teachers for training and re-training on design, selection, and utilization of computer animated instructional package.

(4) Citizenship Education teachers should have more access to computer for instructional delivery, especially in this 21st century digital age.

(5) Computer assisted instruction, which is a sophisticated extension of programmed instruction must be integrated in the school curriculum

Example

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