



EFFECT OF VIDEO CLIPS AND STUDENTS' ATTITUDE ON SENIOR SCHOOL STUDENT' PERFORMANCE IN PHYSICS IN ILORIN, NIGERIA

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Abstract

The significance of the physics at the senior secondary school level cannot be overstated. In spite of the importance of physics to the growth of the nation, the attainment of students in the subjects has remained constantly poor over the years. Many teaching techniques have been developed to improve the performance of students in the physics. One of such techniques involves the use of video clips. Therefore, the objectives of this study were to (i) examine the effect of video clips on students' performance; (ii) determine influence of senior school students' attitude towards their performance when taught physics using video clips. The study was a quasi-experimental, non-equivalent and non-randomised control group design. Two secondary schools with two intact classes of students were purposively engaged. Two instruments were used to gather data in this study, they were; Science Performance Test (SPT) and Science Students' Attitude Questionnaire (SSAQ) and the stimulating instrument was Video clips instructional package. The reliability coefficients of the two instruments were 0.88 and 0.71 respectively. Mean and standard deviations were used to answer the two research questions raised, while t-test analysis was used to test the hypothesis at 0.05 significance level. Findings of the study showed that there was a significant difference in the performance of students when taught science using video clips and those taught without using video clips $t_{(2,113)}=2.71p<0.05$ in favour of those taught using video clip. Also students were of the views that video clips instruction had positive influence on their attitude towards science. It was recommended that teachers should expose students to video clips to emphasise physics concepts

Keyword: Video clip, Attitude, Performance, Effect

Introduction

Physics is a branch of science that deals with the interaction between matter and its energy in space. It is sometimes referred to as the science of measurement and its knowledge has contributed greatly to the production of instruments and devices of tremendous benefits to the human race. According to Adeyemo (2010) physics promotes the acquirement of specialized science knowledge and skills that explains the natural phenomena of life in the society. This subject developed with civilization as man's need for quantitative increased. Physics became unique among other science subjects as it provides practical solution to technological development and made life for human kind comfortable.

According to Omosewo and Akanbi (2013) Physics adds to the technological infrastructure and provides trained individual that will be needed to take advantage of scientific discoveries and advances. It is an important element in the education of computer scientists, chemists and engineers and other science practitioners. It is the

increasing understanding of physics, that lead to the electric power industries, television, radio and other means of electrical and electronics communication. Though, physics as a science oriented subject is known for its non-concrete nature (Adeyemo, 2010). At times the physics teachers do not have sufficient knowledge and have to fall on thoughts that lead to contradictions with what the physics theory meant or says. Learners are therefore left alone, even when ready to read, the textbook materials are not available, and where materials are available in the library, most of them are out-dated. These materials include journals, textbooks, research publications and many. Learners' interest and desire to pursue physics as a discipline could be frustrated due to the misconceptions held against physics by students that carrier choices are limited with a degree in physics. In some cases, frustration comes in and learners drop physics for another subject, which they can handle, therefore, learners forsaking science class to commercial or art class, (Adeyemo, 2010).



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Teaching profession is occupied with innumerable opportunities to enhance the students academically, while some ideas and educational aims will be easily achieved by the students, some will entail critical and creative thinking making sure that the significance of learning purposes are met (Akram & Malik, 2012). Yusuf (2005), stated that the field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research. UNESCO (2011) opined that teachers need to use teaching methods which are appropriate for evolving knowledge societies. Students need to be enabled not only to acquire an in-depth knowledge of their school subjects but also to understand how they themselves can generate new knowledge, using ICT as a tool. Yusuf (2007) described ICT as an electronic technology used for accessing, processing, gathering, manipulating, presenting and communicating information. Mudashir and Shah (2015) stated that the use of ICT as a tool during lessons conducted in classes has improved the learning outcomes of the students and therefore the contribution should be recognized by all teachers in order to enhance students' achievement in academic.

The use of ICT in education, has enabled online education programmes to be realistic across the globe. The ICT in education includes the use of (radio sets, television sets, video clips, personal computers, Internet, audio visual material or print material) to deliver a instruction to learners. The UNESCO stated different forms of ICT- enabled distance education, which include:

- i. Internet-based distance learning;
- ii. CD-ROM or DVD-based self-learning in which the pupils interacts with computer content stored on a CD-ROM or DVD;
- iii. Tele course or broadcast-based education, in which content is delivered via radio or television;
- iv. Mobile devices-based learning where the students access content of the course stored on a mobile device or through a wireless server; and
- v. Integrated distance learning, combining live versus recorded delivery modes, (UNESCO 2010).

Brush, Glazewski and Hew (2008) considered ICT as a tool for students to

discover learning topics, solve problems, and provide solutions to the problems in the learning process. Information and Communication Technology enhances instruction clarifies abstract concepts and makes knowledge acquisition more accessible to learners when they are actively engaged with the application of ICT in classroom instruction.

Video clips are the most effective instruments for developing perfect communication and interaction between the learners, content and the teacher. Video clips are significant in the system of education. Audio visual aids are devices used in the classrooms to stimulate teaching and learning process whereby making it interesting and easier. According to Mishra and Yadav (2014) Audio visual instruction is a supplementary way of making learning objective effective, actual and achievable. It contributes towards the clarification of abstract better understanding and permanent learning. Akram and Malik (2012) stated that audio-visual aids make lesson more stimulating and an unforgettable experience not only for learners but also for teachers. These aids help in developing and arousing curiosity, creativity and motivation. It also stresses on the comprehension of knowledge and concept. Human beings have five senses which are the entrance for effective learning, especially hearing, seeing and touching brings maximum knowledge for the individual, research has revealed that people remember, 80% of what they see and do, 20% of what they read and 10% of what they hear (Lester, 2012). Video clips stimulate the active involvement of the five senses in the learning process of the learners. It is fact that we receive knowledge through our senses. Visual senses help retention in learners so it means that the use of audio visual aids make teaching and learning process more efficient.

According to Rasul, Bukhsh and Batool (2011) audio visual material is one of the best tools for making teaching efficient and spreading of knowledge. Audio visual aids offer the students with accurate understanding that capture their attention and assist in the understanding of the historical occurrences. They appeal to the mind through the visual and auditory senses. Akram and Malik (2012) concluded that the use of audio



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visual aids gave encouraging and productive transformation in the learning attainments of the learners, also the appropriate use of audio-visual aids by the tutors makes abstract concepts and difficult ideas very clear to the learners and they took deep interest in the classroom teachings.

In a study conducted by Kosterelioglu (2016), on the effect of the use of video clip in instruction, the students emphasized on the positive effect of using video clip as arousing interest, concentration in class, improving memory and enhance intelligence. The use of video clips in teaching is one of the ways to boost lesson plans and offer students extra ways to process subject facts. Audio visual aids actualize the knowledge to be presented and assist in making learning experience very real, alive and dynamic. They complement the work of the teacher and aid students in the study of learning material such as text books. (Rasul, Bukhsh & Batool, 2011).

Attitude is an inclination to turn towards or against something in the environment that reflects a negative or positive value. Ballah and Ugwumba (2015) observed that there was a significant positive correlation between senior school students' attitude and their academic performance in physics. Rakhee and Sharma (2013), study shown that female students have high positive attitude than male, it also makes very clear that no male or female lie in average or negative attitude group. Therefore, there was no significant difference in the attitude of male and female students towards practical work at senior secondary level. Ballah and Ugwumba (2015) investigated the influence of attitude on senior secondary school students' academic performance in physics in Nigeria. The result showed that there is a significant positive correlation between students' attitude and their academic performance in physics. Olusola & Rotimi (2012) examined the attitudes of students towards the study of Physics in College of Education Ekere, Ekiti State, Nigeria. The study showed that students have high favourable attitudes towards physics.

The main purpose of this study was to investigate the effects of the use of video clips on senior school students' performance

in physics in Ilorin, Nigeria. Specifically, the study investigated the:

1. effect of video clips on students' performance in Physics;
2. influence of students' attitude towards their performance when taught Physics using video clips

The following research questions were raised and answered to guide the focus of the study.

1. What is the effect of video clips on students' performance in Physics?
2. What is the students' attitude towards using video clips?

The following hypothesis were tested in this study:

H₀₁: There is no significant difference in the performance of the students taught secondary school physics using video clip and those taught without using video clips.

Methodology

This study employed the quasi experimental type, non-equivalent and non-randomised control group design. The target population was all senior secondary school one (SSS I) Physics students in Ilorin. The choice of the SSSI students was considered appropriate for the study because the concepts of Motion, Force and Friction were slated to be taught in the first year of the senior school Physics curriculum. Purposive sampling technique was used to select two co-educational senior secondary schools with functional computer laboratory. Students in two intact classes of the two schools selected participated in the study. A total of 114 students in the intact classes were randomly assigned an experimental group (79) and a control group (35).

Instruments

Two instruments were used to gather data in this study, they are; Physics Students' Attitude Questionnaire (PSAQ) and Physics Performance Test (PPT), as well as a stimulating instrument named Video clip instructional Package. The experimental groups were exposed to the video clips and control group was taught without using the video clips instructional package for the period of three weeks. Video clips instructional Package was adapted from from



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DVD science instruction on Motion, Force and Friction. The video was edited and packaged into 2minutes clips to explain physics concepts through audio visual approach. These clips were played intermittently to students in the experimental group to explain further the concept of the topic and sub-topic during the lesson. Students in the two groups were pre- tested before introducing the experimental group to the video clips. Post-test was administered to

both groups after being taught the concepts of Motion, Force and Friction for three weeks.

Results

Research Question1: What is the effect of video clips on students' performance in Physics?

Table 1 presents the scores of students exposed to video clips and those taught without video clips. Students' post-test scores for both control and experimental groups improved with experimental having benefitted most as shown in table 1.

Table 1: Pre-test and post-test of the experimental and control groups

Treatment Group	Pretest		Post-test		Gain Score Mean
	Mean	SD	Mean	SD	
Experimental	47.02	11.14	64.05	8.93	17.03
Control	45.95	10.77	59.05	8.78	13.10

Research Question:2 What is the students' attitude towards learning with video clips?

Table 2 shows frequency and percentage distribution of students' response on their attitude towards learning with video clips in enhancing teaching physics. The results clearly revealed that 87.72% agreed

that video clips had influence on students' attitude in learning physics. While 12.28% agreed that video clips could not influence their attitude towards learning of physics. This implies that majority of respondents were of the view that video clips has influence on their learning of physics.

Table 2: Students' Attitude towards video clips on Learning Physics

	Frequency	Percentage
Strongly Agree	796	46.55
Agree	704	41.17
Disagree	189	11.05
Strongly Disagree	21	1.23
Total	1710	100%

Research Hypothesis 1: There is no significant difference in the performance of the senior school students taught using video clips and those taught without using video clips.

Table 3 reveals that the calculated t value is 2.71 computed at 2, 113 degrees of freedom. Since the p-value 0.01 is less than the table value 0.05 level of significance. It

means that there is significant difference in the performance of students who were taught physics using video clips and those who were taught without video clips. Therefore hypothesis 1 is rejected. This implies that there was an improvement in students' performance in physics when taught with video clips.

Table 3: t-test of students' scores taught using video clips and those taught without video clips

Treatment	N	Mean	SD	Df	t	Sig (2-tailed)
Experimental	79	64.05	8.93	113	2.71	0.01
Control	35	59.05	8.78			

p<0.05



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Discussion

The finding revealed that there was a significant effect of the treatment in the post test scores of the students exposed to video clips instructional package. It means that the use of video clips instructional package proved to be effective in teaching and learning of physics among senior secondary school students in Ilorin. This finding is in line with the work of Adewole (2015) and Akram, & Malik (2012) who concluded that the use of audio visual improved students' academic performance and the work of Mudashir and Shah (2015) and Adeyemo (2010) who concluded that the use of ICT improved students' performance

The result of the finding also showed that video clips had influence on students' attitude towards learning of physics. This result is in line with the work of Ballah and Ugwumba (2015), Rakhee and Sharma (2013) and Olusola and Rotimi (2012) in their different works established that there is a significant positive correlation between students' attitude and their academic performance

Conclusion

The study concluded that, video clips instructional package improved secondary school students' performance in physics in Ilorin. Also, video clips assisted senior school students who had positive attitude to improve their performance in physics in Ilorin.

Recommendation

Based on the findings, the following recommendations are hereby proposed;; teachers should expose students to video clips while delivering classroom instructions, teachers should encourage students to develop positive attitude toward learning with video clips.

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