

The Relevance Of Multi Media Skills In Teaching And Learning Of Scientific Concepts In Secondary Schools In Lagos State, Nigeria

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ABSTRACT

This study investigated the relevance of multi media skills in teaching and learning of scientific concepts in secondary schools. Self constructed questionnaire was administered to 120 students randomly selected in four secondary schools in Ojo Local Government Area of Lagos state. Data generated were analyzed using chi-square statistical instrument. The findings of the study revealed that the acquisition of relevant skills in multi media will improve teaching and learning of scientific concepts in secondary schools. Based on the findings, recommendations were proffered to inculcate knowledge of multi media skills in improving teaching of science.

Key words: Scientific concepts, Multimedia, Skills and Data

Introduction

Science is the foundation upon which the bulk of present day technological breakthrough is built. Nowadays, nations all over the world including Nigeria are striving hard to develop technologically and scientifically, since the world is turning scientific and all proper functioning of lives depend greatly on science.

Owolabi (2004) defined science as an integral part of human society. Its impact is felt in every sphere of human life, so much that it is intricately linked with a nation's development. Science as a field of study has done a lot for mankind. For instance, life has been made a lot easier for man as a result of the advancements in science. It has reduced human, needs to the barest minimum.

Consequently, (Oshinaike and Adekunmisi 2012) suggested that the mastery of scientific concepts cannot be fully achieved without the use of multi media as instructional learning materials. Also Onasanya and Omosewo (2011) concluded that without learning materials the teaching of scientific concept will certainly result to poor performance in science subjects which are biology, chemistry and physics.

Therefore, multimedia could be defined as the combination of various digital media such as text, images, sound and video, into an integrated multi-sensory interactive application or presentation to convey a message or information to an audience, (Oshinaike and Adekunmisi 2012).

Ogunbote and Adesoye (2006) expressed that multimedia technology adds new dimension to learning experiences because concepts were easier to present and comprehend when the words are complemented with images and animations. Stating further that it has been established that learners retain more when a variety of senses are engaged in impacting knowledge; and the intensity of the experience aids retention and recall by engaging social, emotional and intellectual senses.

Statement of the Problem

Teacher's instructional strategy has been criticized due to the fact that it is not always supported by relevant teaching resources. It's usually based on 'chalk' and 'talk' methods and no teaching material for adequate illustration to assist the learner in mastery of scientific concept.

Most teachers are not teaching with instructional material because they are expensive and lack the skills to improvise these resources materials. Therefore, this study is carried out to investigate acquisition of relevant skills of multimedia resources and its effect in the teaching and learning scientific concepts in secondary schools.

Research Questions

The study among other things sets to find answer to the following questions:

- i. Are teachers in secondary schools acquiring relevant skills in teaching and learning of science in secondary schools?
- ii. Will the use of multimedia skills relevant for effective teaching of science in secondary schools?
- iii. Will attitude of teacher affects teachers' use of multimedia in teaching of scientific concepts?

Research hypotheses

- i H_{01} : There is no significant relationship between teacher acquisition of multimedia skills and teaching of scientific concepts.
- ii H_{02} : There is no significant relationship between teacher acquisition of multimedia skills and its role in effective teaching of scientific concepts.
- iii H_{03} : There is no significant relationship between teachers' attitude and acquisition of multimedia skills in teaching resources.

Research Design, Sample and Sampling Techniques

The descriptive survey research design was adopted for this study. One hundred and twenty (120) respondents were randomly selected from the following schools: Ajangbadi High School, Ajangbadi, Government Senior High School, Ijanikin, Government Senior Model College, Ojo, Otto-Awori Senior Grammar School, Otto. Thirty students were randomly selected from each school using their class register and in all a total of one hundred and twenty students were selected and participated in the study.

Research Instrument

The only instrument used in this study was questionnaire. The instrument was self developed, structured questions which were based on the variables in the generated hypotheses.

Validity and Reliability of the Instrument

The instrument was given to expert in the field of test administration who determines the content validity and removes items which are irrelevant. The instrument was later administered to fifty students in school selected for reliability. Their response was tested using test retest method and determining its reliability with correlation coefficient it yielded 0.65

RESULT AND DATA ANALYSIS

Hypothesis One: There is no significant relationship between teacher acquisition of multimedia skills and teaching of scientific concepts.

Table 1: Showing relationship between teachers acquisition of multimedia skills and teaching of scientific concepts

S/N	SA	A	D	SD	TOTAL	DF	P	CAL	TAB	DEC.
1	42	48	18	12	120	12	0.05	63.86	21.03	Rejected
2	54	30	18	18	120					
3	30	48	12	30	120					
4	60	18	30	12	120					
5	42	42	30	6	120					
Total	228	186	108	78	600					

Table 1 above revealed that the table value of 21.03 is less than the observed (χ^2) value of 63.86 at 12 degree of freedom and 0.05 level of significance. Thus the hypothesis was rejected. This shows that there is significant relationship between teacher acquisition of multimedia skills and teaching of scientific concepts.

Hypothesis Two: There is no significant relationship between teacher acquisition of multimedia skills and its role in effective teaching of scientific concepts.

Table 2: Showing relationship between teacher acquisition of multimedia skills and its role in effective teaching of scientific concepts.

S/N	SA	A	D	SD	TOTAL	DF	P	CAL	TAB	DEC.
6	36	60	0	24	120	12	0.05	100.96	21.03	Rejected
7	30	48	24	18	120					
8	54	42	18	6	120					
9	24	78	18	0	120					
10	36	30	30	24	120					
Total	180	258	90	72	600					

Table 2 showed that the table value of 21.03 is less than the observed (χ^2) value of 100.9 at 12 degree of freedom and 0.05 level of significance. Thus the hypothesis was rejected. This shows that there is significant relationship between teacher's acquisition of multimedia skills and its role in effective teaching of scientific concepts

Hypothesis Three: There is no significant relationship between teachers' attitude and acquisition of multimedia skills in teaching resources.

Table 3: Showing relationship between teachers' attitude and acquisition of multimedia skills in teaching resources.

S/N	SA	A	D	SD	TOTAL	DF	P	CAL	TAB	DEC.
11	42	30	30	18	120	12	0.05	62.29	21.026	Rejected
12	54	30	24	12	120					
13	24	60	24	12	120					
14	24	42	36	18	120					
15	48	54	18	0	120					
Total	192	216	132	60	600					

The result (Table 3) showed that the table value of 21.03 is less than the observed (χ^2) value of 62.29 at 12 degree of freedom and 0.05 level of significance. Thus the hypothesis was rejected. This shows that there is significant relationship between teachers' attitude and acquisition of multimedia skills in teaching resources.

Analysis of Results

The study showed that there is a significant relationship between teacher acquisition of multimedia skills and teaching of scientific concepts. This implies that when science teacher develop skills in multimedia and teaching of scientific concepts. It also aids learners to learn at their own pace and takes care of individual differences among the students. This findings is in line with the submission of Ubogu (2006) that use of multimedia resources facilitate access to all human knowledge, anytime and anywhere in a friendly, multi-

modal, efficient and effective way, by overcoming barriers of distance, language and culture and by using multiple internet-connect devices.

Also the study shows that there is a significant relationship between teacher acquisition of multimedia skills and its role in effective teaching of scientific concepts. This implies that teachers are always faced with mastery of how to use multimedia skills in classroom teaching. This significantly affects the way they deliver their lesson and ability to bring about effective teaching of their subject. This finding is in agreement with of Aina (2013) that teacher's disposition to the use of computer is compulsory in the use of multimedia resources in science education. It also agree with Ekpo-Eloma et al., (2013) that use of multimedia is in line with the attitude of the teacher and must be considered in any educational programme.

In conclusion, the study showed that there is no significant relationship between teachers' attitude and acquisition of multimedia skills in teaching resources. This implies that teachers' attitude to use of multimedia skills is poor and this affect teaching of the scientific concepts. Many teachers don't use multimedia resource to illustrate their teaching just because they lack the skills and have not been taught during their pre-service years. This finding confirm the submission of Adeyanju (2005) that teachers constitute a significant variable in the teaching-learning process and effective of school and that quality teaching depends on their academic standing and more importantly their attitudinal disposition towards instruction. It also agree with the suggestion of Hofman (2001) that attitude is one of the factors affecting teachers use of multimedia resources in teaching.

Conclusion

This study was carried out to investigate the relevance of multimedia resources in teaching of scientific concept in secondary schools. The study showed that when teacher teach with multimedia resources instruction is made easy and well understood by the students.

However, teachers don't teach with multimedia resource material because they are not readily available and they lack the skills to make them available by improvising them. This shows that the use of multimedia resources in our secondary schools in teaching and learning is inevitable. It will also go a long way to improve and make teaching and learning to be effective.

Recommendations

Based on the findings of the research study the followings recommendations were made;

- Science teachers are enjoined to engage more in multimedia resource for teaching of scientific concept.
- Science teacher should continue to have positive attitude and perception towards multimedia resources.
- Science teachers should endeavour to attend seminars and workshops on multimedia to improve their knowledge and skills
- Multimedia skills should be included in the curriculum of undergraduate students and Colleges of Education.
- Funds should be made available in education to support and encourage multimedia resources in teaching, regular workshops, seminars, incentives and allowances for teachers.

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