

EFFECT OF MULTIMEDIA UTILIZATION ON SECONDARY SCHOOL STUDENTS' PERFORMANCE IN HOME ECONOMICS

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Abstract

This study investigated the utilization of multimedia strategies on secondary school students' performance in Home Economics in Port Harcourt City Local Government Area, Rivers State. Five research questions were raised and answered. Five hypotheses were formulated to guide the study. A quasi-experimental design was adopted. The population of the study consisted of all the JSS 2 students in the Junior Secondary Schools in PHALGA. The sample size comprised two hundred and fifty-five (255) JSS 2 students from three selected secondary schools. A researcher-made achievement test titled Home Economics Achievement Test (HEAT) was used for data collection. Mean and standard deviation were used in answering the research questions while ANCOVA was used in testing the hypotheses. The findings revealed that there was a significant difference in the performance of students taught Home Economics using multimedia (recorded video and computer animation) and those taught Home Economics using the demonstration method (traditional method) with computer animation showing the most effect on the performance of students. Also, the study showed that the multimedia strategies used in the study were not gender biased, this manifested in the Home Economics performances of male and female students which did not differ significantly. The study concluded that multimedia utilization in teaching enhances students' learning, which eventually results in better academic performance. The study therefore recommended that multimedia gadgets should be made available and effectively utilized in the teaching Home Economics so as to complement the traditional methods. Also, teachers should be adequately trained in the use of multimedia in order to enhance the teaching and learning of Home Economics in public schools.

Keywords: Multimedia, Academic performance, Secondary school, Home Economics

1.0 Introduction

The need to improve performance among secondary school students has been a major concern for both the government and educational stakeholders. There is a consensus about the declining standard of education; in every discipline, which if not urgently addressed, will affect the nation's future quality manpower. Most students in secondary schools lack enthusiasm in certain subjects and this is apparent in their performances in such subjects. Many researchers have sought reasons for this mediocre trend in the academic performance of students. Uwameiye (2015) opined that educators have seen the pressing need to reconsider the techniques and methods of instructional delivery in Nigerian secondary schools. Stakeholders in education have also identified an urgent need for a paradigm

shift from the existing teacher-centred learning environments to learner-centred learning environments, where learning is enhanced by technological tools and gadgets like the multimedia tools.

Home Economics as a subject, was introduced in the Nigerian curriculum because of its usefulness in addressing the skill needs of students and to ensure that all secondary school leavers are more productive, independent and self-reliant in their future endeavours. However, the main challenge facing the teaching and learning of Home Economics in Nigerian secondary school education is the lack of interest most students show in the subject after their junior secondary school education. In the senior secondary school, very few students continue with it because they just endured and tolerated their junior secondary school Home Economics teachers, who do not use technology-based methods that are more supportive of the present 21st century learning environments. Some students even outrightly fail the subject in their Basic Education Certificate Examination (BECE). Concerns have also sprung up over the years about interventions that can improve the performance of students in secondary school subjects including Home Economics.

The importance of Home Economics cannot be over emphasized. It is needed by every individual, irrespective of the person's profession. For anyone striving to be self-reliant and independent, the knowledge of Home Economics is necessary. Unfortunately, students' interest and performance in the subject have not been encouraging especially at the secondary school level. Secondary school level is the intermediary level between the primary and the tertiary, where systematic and organized education is offered. It is believed that at this level of education, desired attitudes, skills and knowledge should be obtained by the recipients.

Home Economics is the only school subject which primarily aims at preparing students for everyday life and teaches students nutritional knowledge and practical food skills with a focus on increasing self-efficacy in cooking. Home Economics is unique in its systematic, integrative approach and problems of everyday life are addressed in a holistic manner.

Home Economics has been seen to contribute to life in different ways. As an aspect of vocational and technical education, it plays a significant role in the growth and development of the national economy through improved teaching and learning of income yielding skills. Furthermore, as an aspect of vocational education, it is a skill oriented subject that requires the contributions of both human and material resources for its implementation and effectiveness.

Consequently, methods of teaching school subjects; like Home Economics, aimed at improving performance and effectiveness are constantly changing. Newer and better approaches for teaching keep evolving especially in the 21st century learning environments. Such environments give teachers access to sufficient technological tools like the multimedia devices. These can facilitate learning and improve performance. Unfortunately, a subject like Home Economics taught in secondary schools as Uwameiye (2015) stated is not sufficiently taking advantage of the prevailing multimedia strategies for teaching in the 21st century classrooms. Some teachers do not want to let go of their usual storytelling methods of teaching which are typical of the traditional brick-and-mortar learning environments because they did not receive their trainings in the present 21st century learning environment. However, as suggested by Uwameiye (2015), curriculum improvement efforts should be encouraged by the government to ensure a successful integration of Information and Communication Technology (ICT) gadgets such as the multimedia devices into the teaching and learning processes in Nigerian schools in Home Economics. Spoken words are not sufficient for in-depth teaching. Multimedia devices serve as channels through which messages, information, ideas and knowledge are disseminated easily especially in subjects that require practical demonstrations like Home Economics.

Multimedia may be defined as any electronic application combined as text, voice, picture or video utilized to teach or educate students on a specific subject matter. Multimedia materials use both words and pictures. Multimedia use in the classroom allows instructional content to be presented in a more artistic, inspiring and engaging way.

The use of multimedia enables teachers to include text, animation, graphics and other instructional materials in a single package to present comprehensive information to effectively achieve learning objectives.

Multimedia resources help increase students' awareness of the subject matter, enhance their understanding of the topic, and foster the depth of their understanding. Multimedia instruction had been viewed positively over the traditional methods of instruction. It has been regarded as a powerful aid that enhances teaching and learning in various disciplines.

The availability of the different technological resources in schools, such as audio-visual aids, arouses students' interests towards learning and ultimately has a positive effect on performance. Audio-visual technological devices include tape recorders, radio broadcasts, public address systems, overhead and opaque projectors. As teaching resources, they are useful for the presentation and clarification of information. Moreover, the emergence of new technologies has resulted in increased use of multimedia for teaching and learning in education. Multimedia technologies have always thrilled educationists because of their ability to communicate complex concepts in simple

ways. With the presence of more sophisticated computers having multimedia capabilities, the need to use multimedia has also grown tremendously. Computer-based instruction has several advantages in a teaching and learning environment. These include self-paced learning, self-directed learning, the exercising of various senses and the ability to represent content in a variety of media.

Secondary school students' performance from the foregoing is very vital and needs serious attention. Studies have been carried out in the use of multimedia in assessing performance of students in various subjects. Literature review has revealed that not much has been done in Home Economics in Nigeria in spite of its importance as a subject that is applicable to the home and the society. The researcher has therefore seen the need to investigate the effect of the utilization of multimedia gadgets like the recorded video and computer animation on secondary school students' performance in Home Economics against the traditional demonstration method.

Statement of the Problem

Home Economics is a subject taught in Nigerian secondary schools that has made a significant contribution to the national economy. It equips students with income yielding skills that enable them become productive, independent and self-reliant members of the society. However, in recent times there has been a declining performance of secondary school students in Home Economics. A closer look at the prevailing teaching methods showed that the Home Economics teachers are using teacher-centred traditional methods of teaching. Furthermore, a few studies have highlighted the efficacy of multimedia strategies on students' learning outcomes. There is however, no evidence of an existing study on the likely effect of the utilization of multimedia strategies for improving students' performance in Home Economics. It is on this note that the research sought to investigate whether the use of multimedia can enhance secondary school students' performance in Home Economics. Posed in a question form therefore, the statement of problem of this study is: To what extent will the utilization of multimedia strategies enhance students' performance in Home Economics?

Research Questions

The following research questions were raised in this study;

1. What are the effects of recorded video on the performance scores of students taught Home Economics?
2. How do the performance scores of male students taught Home Economics using recorded video differ from the performance scores of female students taught Home Economics using recorded video?
3. What are the effects of computer animation on the performance scores of students in Home Economics?
4. How do the performance scores of male students taught Home Economics using computer animation differ from the performance scores of female students taught Home Economics using computer animation?
5. What are the effects of recorded video, computer animation and demonstration method on the performance scores of students in Home Economics?

Hypotheses

The following hypotheses were formulated for the study.

H₀₁: There is no significant difference in the performance scores of students taught Home Economics using recorded video and those taught Home Economics using the demonstration method.

H₀₂: There is no significant difference in the mean scores of male and female students taught Home Economics using recorded video

H₀₃: There is no significant difference in the performance scores of students taught Home Economics using computer animation and those taught Home Economics using the demonstration method.

H₀₄: There is no significant difference in the mean scores of male and female students taught Home Economics using computer animation.

H₀₅: There is no significant difference in the effect of recorded video, computer animation and demonstration method on students' performance in Home Economics.

2.0 Methodology

Research Design: The research design adopted for this study was the quasi-experimental design using non-randomized, non-equivalent, pre-test and post-test experimental group design. This was because true randomization was not possible but intact classes were purposively assigned to the experimental and control groups.

The design is represented schematically as follows:

s/n	Groups	Pre-test	Treatment	Post-test
1	Experimental 1	O ₁	IMRV	O ₂
	Experimental 2	O ₃	IMCA	O
2	Control (IDM)	O ₄	O ₆

Where

O₁ = Pre-test for Experimental group 1

O₂ = Post-test for Experimental group 1

O₃ = Pre-test for Experimental group 2

O₅ = Post-test for Experimental group 2

O₄ = Pre-test for Control group

O₆ = Post-test for Control group

IMRV = Instruction with Multimedia Recorded Video

IMCA = Instruction with Multimedia Computer Animation

IDM = Instruction with Demonstration method

..... = Intact class

Population: The population of this study comprised 5,241 JSS2 students in the entire Junior Secondary Schools in Port Harcourt City Local Government Area.

Sample and Sampling Techniques: A purposive sampling technique was adopted in selecting 3 schools out of the 15 public junior secondary schools in PHALGA. This was because the researcher needed to use schools with electricity and facilities that could support multimedia learning and also have intact classes of boys and girls. In each of the selected schools, an intact class of JSS 2A students was used. The groups comprised a total of 255 participants made up of 109 male students and 146 female students in the intact classes of JSS2.

Research Instrument: The instrument used for data collection was a researcher-made-test which was titled Home Economics Achievement Test (HEAT). It contained 25 tests items which were graded at 4 marks each to give a total of 100 marks. The HEAT was used as a pre-test to ascertain equivalent ability of the students as well as a post-test after treatment to determine the effect of the intervention on their academic performances. The instrument was given to two experts in education and Home Economics teachers to establish the face validity of the instruments. Their corrections were followed in selecting the items included in the instrument. Field testing was carried out by administering the instruments on some students from an intact class of a co-educational secondary school different from the selected schools used for the study. Test retest method was used to generate 2 set of scores for the students. The scores were subjected to correlation in order to determine the reliability of the instrument. The reliability coefficient of the instrument was found to be 0.79.

Procedure for Data Collection: This was done in phases. In the first phase, the researcher visited the chosen schools to seek for permission in using the students as well as some facilities in the schools. This was followed by the administration of the HEAT as a pre-test to the students in the two experimental groups and the control group to ascertain the equivalence in ability of the students. In the second phase, the treatments were introduced to the experimental groups. Students in experimental group A were taught using Multimedia Recorded Video (MRV) , those in experimental group B were taught using Multimedia Computer Animation (MCA) while the control group C were taught using the Demonstration Method (DM). Two topics (Food Nutrients and Deficiency Diseases) were taught concurrently in all the three schools using the appropriate treatment in each school for a period of four weeks. Then the HEAT was administered to the three groups as post-test.

Method of Data Analysis: The data generated from the pre-test and post-test were collated and analyzed using mean for the research questions and ANCOVA for testing the hypotheses formulated for the study, at 0.05 level of significance.

3.0 Results:

Research Question One: What is the effect of recorded video on the performance scores of students taught Home Economics?

Table 1: Mean on the performance of students taught Home Economics using recorded video and those taught Home Economics using the demonstration method

S/NO	STRATEGY	PRE-TEST \bar{X}	POST-TEST \bar{X}	MEAN GAIN
1	Demonstration Method	30.19	56.50	26.31
2	Recorded Video Method	37.53	65.94	28.41
	AVERAGE	33.86	61.22	27.36

From table 1 above, the average score of students who were taught Home Economics using demonstration method is 26.31, while the average score of students who were taught Home Economics using recorded video is 28.41. This implies that students who were taught using recorded video performed better in Home Economics than students that were taught using demonstration method.

Research Question Two: How do the performance scores of male students taught Home Economics using recorded video differ from the performance scores of female students taught Home Economics using recorded video?

Table 2: Mean on the performance scores of male students taught Home Economics using recorded video differ from the mean performance scores of female students taught Home Economics using recorded video

S/NO	GENDER	PRE-TEST \bar{X}	POST-TEST \bar{X}	MEAN GAIN
1	Male Students	39.76	64.19	24.43
2	Female Students	35.82	66.96	31.14
	AVERAGE	37.79	65.58	27.36

From table 2 above, the average score of male students who were taught Home Economics using recorded video was 24.43, while the average score of female students who were taught Home Economics using recorded video is 31.14. This implies that female students who were taught using recorded video performed better in Home Economics than male students who were taught using recorded video.

Research Question Three: What is the effect of computer animation on the performance scores of students in Home Economics?

Table 3: Mean on the performance of students taught Home Economics using computer animation and those taught Home Economics with the demonstration method

S/NO	STRATEGY	PRE-TEST \bar{X}	POST-TEST \bar{X}	MEAN GAIN
1	Demonstration Method	30.19	56.50	26.31
2	Computer Animation Method	34.16	68.49	34.33
	AVERAGE	32.18	62.50	30.32

From table 3 above, the average score of students who were taught Home Economics using computer animation was 34.33, while the average score of students who were taught Home Economics using demonstration method is 26.31. This implies that students who were taught using computer animation performed better in Home Economics than students who were taught using demonstration method.

Research Question Four: How do the performance scores of male students taught Home Economics using computer animation differ from the performance scores of female students taught Home Economics using computer animation?

Table 4: Mean of the performance scores of male students taught Home Economics using computer animation differ from the mean performance scores of female students taught Home Economics using computer animation

S/NO	GENDER	PRE-TEST \bar{X}	POST-TEST \bar{X}	MEAN GAIN
1	Male Students	38.90	71.00	32.10
2	Female Students	30.29	66.45	36.16
	AVERAGE	34.60	68.73	34.13

From table 4 above, the average score of male students who were taught Home Economics using computer animation was 32.10, while the average score of female students who were taught Home Economics using computer animation is 36.16. This implies that female students who were taught using computer animation performed better in Home Economics than male students who were taught using computer animation.

Research Question Five: What are the effects of recorded video, computer animation and demonstration method on the performance scores of students in Home Economics?

Table 5: Mean and Standard Deviation on the performance of students taught Home Economics using recorded video, computer animation and demonstration method

GROUP	MEAN	STD. DEVIATION	N
RECORDED VIDEO	65.94	13.01	94
COMPUTER ANIMATION	68.49	13.24	97
DEMONSTRATION METHOD	56.50	8.77	64
TOTAL	63.64	11.67	255

Table 5 shows the mean scores of the students in the recorded video, computer animation and the control groups (demonstration method) as 65.94, 68.49 and 56.50 respectively. This indicates that the performance of the students exposed to computer animation is the best among the three groups.

Hypothesis One: There is no significant difference in the performance of students taught Home Economics using recorded video and those taught Home Economics using the demonstration method.

Table 6: Summary of ANCOVA Analysis on the performance of students taught Home Economics using recorded video and those taught Home Economics using the demonstration method

Variables	N	\bar{X}	SD	Level of sig	df	F-value	P-value	Decision
Recorded Video	97	65.94	13.01	0.05	159	25.833	0.000	Significant(Reject Ho ₁)
Demonstration Method	64	56.50	8.77					

Data on table 6 revealed the summaries of subject, mean, standard deviation and ANCOVA of difference between the performance of students taught Home Economics using recorded video and those taught Home Economics using the demonstration method. The calculated F-value used in testing hypothesis stood at 25.833, using 159 degree of freedom at 0.05 level of significance.

At 0.05 level of significance and 159 degrees of freedom, the calculated P-value of 0.000 is less than the Sig level of 0.05 (P<0.001). Hence there is a significant difference between the methods of teaching. Consequently, the null

hypothesis was rejected and it was concluded that there is a significant difference in the performance of students taught Home Economics using recorded video and those taught Home Economics using the demonstration method.

Hypothesis Two: There is no significant difference in the mean scores between the male and female students performance when taught Home Economics using recorded video.

Table 7: Summary of ANCOVA Analysis on the mean scores between the male and female students performance when taught Home Economics using recorded video

Recorded Video	N	\bar{X}	SD	Level of sig	df	F-value	P-value	Decision
Male Students	42	64.19	12.83	0.05	95	1.757	0.188	Not Significant (Accept H_{03})
Female Students	55	66.62	12.97					

Data on Table 7 revealed the summaries of the subject, mean, standard deviation and ANCOVA of difference between in the mean scores between the male and female students performance when taught Home Economics using recorded video. The calculated ANCOVA value used in testing hypothesis stood at 1.757, using 95 degree of freedom at 0.05 level of significance

At 0.05 level of significance and 95 degrees of freedom, the calculated P-value of 0.188 is greater than the Sig level of 0.05 ($P > 0.05$). Hence there is no significant difference between their performances. Consequently, the researcher accepted the null hypothesis, and concluded that there is no significant difference in the mean scores between the male and female students performance when taught Home Economics using recorded video.

Hypothesis Three: There is no significant difference in the performance of students taught Home Economics using computer animation and those taught Home Economics using the demonstration method.

Table 8: Summary of ANCOVA Analysis on the performance of students taught Home Economics using computer animation and those taught Home Economics using the demonstration method

Variables	N	\bar{X}	SD	Level of sig	df	F-value	P-value	Decision
Computer Animation	97	68.49	13.24	0.05	159	39.922	0.000	Significant (Reject H_{03})
Demonstration Method	64	56.50	8.77					

Data on the Table 8 revealed the summaries of subject, mean, standard deviation and ANCOVA of difference between in the performance of students taught Home Economics using computer animation and those taught Home Economics using the demonstration method. The calculated F-value used in testing hypothesis stood at 39.922, using 159 degree of freedom at 0.05 level of significance.

At 0.05 level of significance and 159 degrees of freedom, the calculated P-value of 0.000 is less than the Sig level of 0.05 ($P < 0.001$). Hence there is a significant difference between the methods of teaching. Consequently, the researcher rejected the null hypothesis, and concluded that there is a significant difference in the performance of students taught Home Economics using computer animation and those taught Home Economics using the demonstration method.

Hypothesis Four: There is no significant difference in the mean scores between the male and female students performance when taught Home Economics using computer animation.

Table 9: Summary of ANCOVA Analysis on the mean scores between the male and female students performance when taught Home Economics using computer animation

Computer Animation	N	\bar{X}	SD	Level of sig	df	F-value	P-value	Decision
Male Students	42	71.00	12.58	0.05	95	0.133	0.716	Not Significant(Accept H_{04})
Female Students	55	66.45	13.54					

Data on the Table 9 revealed the summaries of subject, mean, standard deviation and ANCOVA of difference in the mean scores between the male and female students performance when taught Home Economics using computer animation. The calculated ANCOVA value used in testing hypothesis stood at 0.133, using 95 degree of freedom at 0.05 level of significance.

At 0.05 level of significance and 95 degrees of freedom, the calculated P-value of 0.716 is greater than the Sig. level of 0.05 ($P > 0.05$). Hence there is no significant difference between their performances. Consequently, the researcher accepted the null hypothesis, and concluded that there is no significant difference in the mean scores between the male and female students performance when taught Home Economics using computer animation.

Hypothesis Five: There is no significant difference in the effects of recorded video, computer animation and demonstration method on students' performance in Home Economics.

Table 10. ANCOVA of the performance of students taught Home Economics using recorded video, computer animation and the demonstration method.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	104.958a	3	34.986	11.495	0.000	0.330
Intercept	438.313	1	438.313	144.009	0.000	0.673
Group	102.920	2	51.460	16.907*	0.000	0.326
Pre-test	10.606	1	10.606	3.485	0.066	0.047
Error	213.055	70	3.044			
Total	3367.000	255				
Corrected Total	318.014	254				

*sig. at $p < 0.05$

Table 10 shows the ANCOVA of the students' scores in the three groups ($F = 16.907$, $p < 0.05$). The result suggests a statistical significant effect of the approaches on students' academic performance in Home Economics.

Table 11. Pair-wise Comparisons of students' scores.

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.b	95% Confidence Interval for Differenceb	
					Lower Bound	Upper Bound
MRV	MCA	-2.050*	0.567	0.002	-3.441	-0.659
	Control	1.191*	0.455	0.032	0.075	2.307
MCA	MRV	2.050*	0.567	0.002	0.659	3.441
	Control	3.241*	0.559	0.000	1.871	4.612
Control (DM)	MRV	-1.191*	0.455	0.032	-2.307	-0.075
	MCR	-3.241*	0.559	0.000	-4.612	-1.871

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons

The results in table 11 showed that the mean difference between the computer animation (MCA) group and recorded video (MRC) groups (2.050) was lower the mean difference between the computer animation and control group

(Demonstration method) (3.241). This points to the difference in effect of three approaches in improving students' performance in Home Economics with computer animation showing the highest effect followed by the recorded video and then the demonstration method. Since the computer animation improves students' academic performance in Home Economics than recorded video and the demonstration method, the null hypothesis is rejected. Therefore, the alternative hypothesis is hereby established that there is significant difference in the effect of recorded video, computer animation and demonstration method on students' academic performance in Home Economics.

4.0 Discussion

Performance of students taught using multimedia strategies and demonstration method.

The findings of the study revealed that significant difference does not exist in the performance of students in Home Economics before they were taught using recorded video, computer animation and the demonstration method. This suggests that the three groups were quite homogenous at the start of the study. It implies that students used for the study have relatively equal background knowledge of Home Economics.

The results of the study revealed further that students who were taught using recorded video performed better in Home Economics than students that were taught using the demonstration method. Also, students who were taught using computer animation performed better in Home Economics than students who were taught using the demonstration method. This implies that the multimedia method of teaching enhances students learning, which eventually results to better performance. Also the result showed that the students in the computer animation group performed better than those in the recorded video group and then the control group

The result of this study agrees with the findings of William and Maureen (1997) who examined the effects of integrated video media on student achievement and attitudes in high school Chemistry. Their study explored the effects of an integrated video media curriculum enhancement on students' achievement and attitudes in a first-year general high school Chemistry course within a multi-culturally diverse metropolitan school district. The results revealed significantly higher achievement scores on standardized measures of achievement as well as on micro unit researcher-designed, criterion-referenced quizzes for the treatment students who experienced a general Chemistry course enhanced with an integrated use of a structured Chemistry video series.

This study is also in line with the study of Owolabi and Oginni (2013) who investigated the effectiveness of animation and multimedia teaching on students' performance in science subjects. The study examined the effect of animation and multimedia teaching on academic performance of students in sciences. The results were analysed using t-test, three hypotheses were postulated. The findings revealed that there was a significant difference in the performance of students exposed to cartoon style multimedia teaching and those that are conventionally taught. All these studies concur with the present study and point to the fact that the use of multimedia enhances students understanding in any subject compared to traditional methods.

Gender performance in the use of multimedia method of teaching

The findings of this study on gender revealed that was no significant difference between the performance scores of male and females students taught Home Economics using recorded video as well as computer animation. This implies that the multimedia teaching strategies used were not gender biased

The above finding contradicts the discovery of Akpoghol, Ezeudu, Adzape and Otor (2016) who investigated the effects of Lecture Method Supplemented with Music (LMM) and Computer Animation (LMC) on senior secondary school students' academic achievement in electrochemistry in Makurdi metropolis. The results of their study revealed that there was no statistically significant mean effect ($p > 0.05$) for instructional methods on mean achievement score of students taught electrochemistry. Females taught electrochemistry had higher achievement score (40.45 ± 3.42) than their male counterparts (39.29 ± 4.25).

5.0 Conclusion and Recommendations

Based on the findings of the study, it is concluded that multimedia utilization in teaching enhances students' learning, and consequently, results in a better academic performance. The study had been able to show that computer animation is more effective in improving the academic performance of students in Home Economics when compared with recorded video and demonstration method. It was also revealed that the multimedia strategies used in the study were not gender biased.

Based on the findings of this study and the conclusion reached, the following recommendations are made:

1. The use of multimedia gadgets while teaching Home Economics should be encouraged so as to complement the traditional method.
2. Teachers should be trained and equipped to use multimedia gadgets in their day-to-day classroom teaching.
3. Following the findings of this study that computer animation significantly improved learning, it is recommended that Home Economics teachers should adopt the strategy and other hands-on strategies during instruction so that learners could be guided to learn meaningfully
4. The government should provide adequate educational multimedia resources and adequate technical support for the integration of multimedia resources in teaching and learning in public schools.

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