



## **Activity-Based Strategy and Academic Performance of Students in Home Economics in Warri South**

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### **ABSTRACT**

The study investigated activity-based strategy and academic performance of students in Home Economics in Delta State. Three research questions were stated and corresponding hypotheses formulated that guided the study. Quasi-experimental research design was used in the study. The population of Home Economics students was 3,669. Multi stage sample technique was used to draw 105 students for the three groups. Instrument for data collection was through teachers made test, evaluation and assignment were given to test the students' performance. The instrument was validated by my supervisor and two other experts in test development and the coefficient of reliability established was 0.81. Mean and standard deviation were used to answer the research questions while analysis of covariance (ANCOVA) was used to test the hypotheses at 0.05 alpha level. The results revealed that students exposed to simulation and group discussion teaching strategies had higher students' academic performance than those exposed to lecture method. Female students had higher performance with group discussion while male students had higher performance with simulation in lecture method. Activity-based strategy jointly and separately had higher students' academic performance than the lecture method. The test of hypotheses for simulation and group discussion teaching strategies showed a significant mean difference while the gender did not show a significant mean difference. Based on these findings, the study concluded that the activity-based teaching strategies had a positive significant mean difference in this study. Hence, it is recommended that government at all levels should collaborate with ministry of education and all the Home Economics teachers to include activity-based teaching strategies as an innovative idea to improving students' academic performance in junior secondary schools in Delta State.

**Keywords:** Activity- Based Learning Strategy, Academic Performance, Home Economics.

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### **Introduction**

In the field of education, teaching and learning go side by side. Education is the only tool that aims to equip and empower its learners with the right knowledge. This knowledge also works towards acquiring various competences and skills that are required for any citizen to capture good employment opportunities and have a positive impact on the society. However, the most important element to gain these advantages is the teachers. In order to provide the youth and masses with the correct information, the teachers are the focal figure and have to set standards accordingly for their students. They are required to be competent enough and must possess the knowledge of the subject matter. This knowledge must be passed on to the students in the most neutral and creative way to enable the students to develop a clear insight along with stimulating critical thinking skills. This is because effective learning in the classroom depends on the teacher's ability to maintain the interest that brings students to the study in the first place (Kaya,2012).

The essence of these activities is to get students out of being passive audience and observers and to keep the students into the learning-teaching phenomenon in person. Thus, the educational experience of the student became more permanent with mental transformation and social experiences and individual gains are enriched with the formation of new ideas (berry,2018). Activity based learning involves reading, writing, discussion, practical activities and engagement in solving problems, analysis, synthesis, and evaluation. Active learning is also defined as any strategy that involves students in doing things and thinking about things they are doing (Ahmad,2015)

Home Economics Education in recent times has become one of the strongest pillars of national economic revival through its vocational programmes. As a vocational discipline, it is useful for both adult and youth, rich and poor, educated and uneducated for improving the lives of the family, community or nation through engaging deliberately in some of the programmes it offers. These programmes have been highlighted and explained in National Policy on Education of the fundamental need for acquisition of appropriate skills, abilities and competencies; both mental and physical, as a pre-requisite for the individual to contribute to the meaningful development in the society (FRN, 2014).

Home Economics is an aspect of Vocational Education, a skill-oriented subject that can offer learners acquisition of skills for enhancing their capability for self-employment. Home Economics draws its knowledge from the sciences, humanities and arts. It uses human and material resources for positive effect on homes and families. The objective of teaching Home Economics is to help individuals live a purposeful and satisfying life through wise

use and management of their human and available material resources. As a field of study, it offers numerous occupational opportunities for self-reliance. Home economics is taught at the junior secondary level in the Nigeria educational level system under the universal basic educational program, as an integrated subject which comprises of food and nutrition clothing and textile and home management at the secondary level, food and nutrition, clothing and textile and home management are taught as separate subjects.

Caraher and McCloat (2016) described home economics as a problem-solving-oriented discipline that addresses people's practical, real-world concerns in a socially responsible manner. Okadigwe and Rhoda (2019) refer to home economics as a skill-oriented subject that can offer learners the acquisition of skills for enhancing their capability for self-employment. Home economics education program comprises vocations related to clothing and textiles, foods and nutrition, home management, family relationship, and child development (Uwameiye, 2019).

Agbenyeku (2017) argued that students' motivation by engaging them in interactive-activities is an effective and useful method for teaching complex concepts in home economics. Also, giving students adequate chances to perform well is likely to improve the cognition, affective and psychomotor domains respectively. Learning via experimentation and discovery is possible with activity-based learning.

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## Statement of Problem

Activity-based strategy is an innovative learning employed in this modern time in many secondary schools to improve students' academic performance and to build a united, strong and self-reliant nation is one among the five national goals of the Nigerian State. The attainment of this all-important national goal, especially the self-reliance aspect of it, no doubt, can be made possible when students are adequately and effectively taught vocational and long-life coping skills especially at the early stage in life. Home Economics as a core subject at the Junior Secondary School level has a rich curriculum content and learning experiences that can make this ideal attainable. It helps students to have a healthy life, self-employed and sustains them economically, that is food provision, acquisition of skills etc.

However, despite the rich curriculum content and learning experiences of Home Economics, the academic performance of JSS3 students in the subject, especially in Warri South, Delta State has confirmed to decline in every internal and public examination (i.e. Junior Secondary School Certificate Examination) in recent times.

What then, could be responsible for the abysmal students' performance especially in public examination in the subject. Could it be as a result of the confirmed use of the conventional lecture method in teaching the subject, instead of the use of such innovative or activity teaching strategies like simulation or group discussion? Could it be that, Home Economics teachers, teaching in Warri South, Delta State have not been trained on how to make use of these strategies in the teaching/learning process especially in the Home Economics classroom. The problem of this study therefore, is to investigate the effect of activity based strategy on the academic performance of Home Economics students in Delta State.

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## Aims and Objectives of the Study

The aim of this study was to investigate the effect of activity-based strategy on students' academic performance in public secondary schools in Home Economics: Delta State. In this research study, the objectives are as follows:

1. Investigate the effect of simulation learning strategy on students' mean performance scores in Home Economics.
2. Determine the effect of group discussion strategy on students' mean performance scores in Home Economics.
3. Determine the effect of lecture teaching strategy on students' mean performance scores in Home Economics.

## Research Questions

The research questions for this study are as follows:

1. What is the effect of simulation learning strategy on students' mean performance scores in Home Economics?
2. What is the effect of group discussion on the mean performance scores of Home Economics students?
3. What is the effect of lecture teaching strategy on students' mean performance scores in Home Economics?

## Hypotheses

The following null hypotheses are formulated to guide the study:

1. There is no significant mean difference between the academic performance scores of Home Economics students taught using simulation learning strategy, those taught using group discussion strategy and those taught using lecture methods.
2. There is no significant mean difference between the academic performance scores of Home Economics students taught using group discussion teaching strategy.

3. There is no significant mean difference between the effect of lecture teaching strategy and students' mean performance score in Home Economics.

## Methodology

The study adopted a quasi-experimental design. The design is considered appropriate because it was applied in a situation which is not purely experimental. Nwankwo (2013) defined quasi experimental design as a study in which same treats to validity cannot be properly controlled because unavoidable situation associated with the study when human beings used for experimental study. The population of the study consisted of three thousand six hundred and sixty-nine (3,669) JSS 3 Home Economics students in the seventeen (17) public junior secondary school Warri South Local Government Area, Delta State (Delta State Universal Basic Education Board, 2022). The sample for this study comprised one hundred and five (105) Junior Secondary School 3 Home Economics students drawn from three intact classes in Warri South Local Government Area, Delta State using multistage sampling procedures. The instrument for the study was an objective test titled "Home Economics Performance Test (HEPT)" constructed by the researcher. The instrument was validated by three experts. The internal consistency (reliability) of the Home Economics Performance Test (HEPT) was determined through test-retest method as a measure of the internal consistency of the instrument. The process involved administering the test instrument to the students and after two weeks, the test was re-administered and analyzed using Pearson product moment correlation to obtain the reliability coefficient of 0.83. The instrument for data collection in this study was Home Economics Performance Test (HEPT) was administered to the two groups of students by the researcher and assistance of research assistants, Home Economics teachers in the sampled school. Scores obtained at this stage served as the pre-test scores.

Thereafter, treatment was administered by the regular teachers of the students in their respective schools and classes. Those in experimental group one was taught by their teacher using simulation strategy and group discussion was used for experimental group two, while group three was taught using the lecture method. The data obtained were analyzed using mean, standard deviation and ANCOVA. Mean was used to answer the test questions while analysis of covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. This was done using SPSS version 23.0.

## Results

**Research Question One:** What is the effect of simulation learning strategy on students' mean performance scores in Home Economics?

**Table 1: Effect of simulation learning strategy on students' mean performance scores in Home Economics**

Group	Strategy	N	Pre-testMean	SD	Post test Mean	SD	Mean gain score
Experimental 1	Simulation Learning Strategy	35	29.76	4.63	54.90	11.05	25.14
Control	Lecture Method	35	22.98	10.50	32.09	4.88	9.11

Results in Table 1 show that the mean gain scores of students exposed to simulation learning strategy is 25.14. The students in the control group obtained a mean gain score of 9.11. It could therefore be deduced that the students exposed to simulation learning obtained the higher mean gain those in the control group had low mean gain score.

**Research Question Two:** What is the effect of group discussion on the mean performance scores of Home Economics students?

**Table 2: Effect of group discussion on the mean performance scores of Home Economics students**

Group	Strategy	N	Pre-testMean	SD	Post test Mean	SD	Mean gain score
Experimental 2	Group Discussion	35	23.16	7.77	70.54	10.46	47.38
Control	Lecturer Method	35	22.98	10.50	32.09	4.88	9.11

Results in Table 2 shows that the mean gain scores of students exposed to group discussion (activity-based method) is 47.38. The students in the control group obtained a mean gain score of 9.11. It could therefore be deduced that the students exposed to exposed to group discussion (activity-based method) obtained higher mean gain scores while those in the control group had the low mean gain score.

**Research Question Three:** What is the effect of lecture teaching strategy on students' mean performance in Home Economics?

This research question was answered using mean, standard deviation and percentage. The results obtained were presented in Table 3.

**Table 3: Effect of lecture teaching strategy on students' mean performance in Home Economics**

Group	Strategy	N	Pre-test Mean	SD	Post test Mean	SD	Mean gain score
Experimental 2	Group discussion	35	23.16	7.77	70.54	10.46	47.38
Experimental 1	Simulation	35	29.76	4.63	54.90	11.05	25.14
Control	Lecture Method	35	22.98	10.50	32.09	4.86	9.11

Results in Table 3 shows that the mean gain scores of students exposed to group discussion is 47.38, those in simulation group is 25.14 while the students in the control group obtained a mean gain score of 9.11. It could therefore be inferred that the students exposed to group discussion obtained the highest mean gain scores, followed by those in simulation group while those in the control group had the least mean gain score.

**Hypothesis 1:** There is no significant mean difference between the academic performance scores of Home Economics students taught using simulation learning strategy and those taught using lecture methods.

To test the null hypothesis, analysis of covariance was employed. The results were presented in Table 4.

**Table 4: Summary of ANCOVA on the effect of simulation learning strategy on students' mean performance scores in Home Economics****Tests of Between-Subjects Effects**

Dependent Variable: postest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9474.491 <sup>a</sup>	2	4737.246	69.120	.000	.674
Intercept	7641.904	1	7641.904	111.502	.000	.625
pretest	362.465	1	362.465	5.289	.025	.073
group	6476.733	1	6476.733	94.501	.000	.585
Error	4591.924	67	68.536			
Total	146493.467	70				
Corrected Total	14066.415	69				

a. R Squared = .674 (Adjusted R Squared = .664)

Table 4: shows that the calculated F-value for group is 94.501 at degrees of freedom of 1 and 67 at  $p < 0.05$ . The calculated F-value was significant at  $p < 0.05$  which is less than 0.05 level of probability ( $F = 94.501$ ,  $df = 1/67$ ,  $p < 0.05$ ). Hypothesis one was therefore rejected. This shows that there is significant difference between the mean scores of students exposed to simulation learning and those in control group. Also, the table reveals partial eta square of 0.585 which depicts large effect size. This implies a high practical utility of simulation learning strategy on students' mean performance scores in Home Economics.

**Hypothesis 2:** There is no significant mean difference between the academic performance scores of Home Economics students taught using group discussion teaching strategy.

A two-way analysis of covariance was employed in testing the null hypothesis. The results obtained are presented in Table 5.

**Table 5: Summary of 2-way ANCOVA on effect of group discussion on students' performance in Home Economics****Tests of Between-Subjects Effects**

Dependent Variable: postest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	27547.465 <sup>a</sup>	2	13773.733	322.399	.000	.906
Intercept	14315.934	1	14315.934	335.090	.000	.833

pretest	1665.808	1	1665.808	38.991	.000	.368
group	25751.642	1	25751.642	602.763	.000	.900
Error	2862.421	67	42.723			
Total	214730.800	70				
Corrected Total	30409.886	69				

a. R Squared = .906 (Adjusted R Squared = .903)

Table 5 shows that the calculated F-value for group is 42.723 at degrees of freedom of 1 and 67 at  $p < 0.05$ . The calculated F-value was significant at  $p < 0.05$  which is less than 0.05 level of probability ( $F = 42.723$ ,  $df = 1/67$ ,  $p < 0.05$ ). Hypothesis two was therefore rejected. This shows that there is a significant difference between the mean scores of students exposed to group discussion and those in control group. The table also reveals that group discussion affect management of truancy behaviour among school adolescents at partial eta square of 0.900. This indicates a very large effect size.

**Hypothesis 3:** There is no significant mean difference between the effect of lecture teaching strategy and students' mean performance in Home Economics.

A two-way analysis of covariance was employed to test the null hypothesis. The results were presented in Table 6.

**Table 6: Summary of 2-way ANCOVA on the effect of lecture teaching strategy and students' mean performance in Home Economics**

#### Tests of Between-Subjects Effects

Dependent Variable: postest

Source	Type III Squares	Sum of df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	27651.578 <sup>a</sup>	3	9217.193	129.155	.000	.793
Intercept	15271.803	1	15271.803	213.995	.000	.679
pretest	1469.199	1	1469.199	20.587	.000	.169
group	25768.345	2	12884.172	180.539	.000	.781
Error	7207.876	101	71.365			
Total	324386.467	105				
Corrected Total	34859.454	104				

a. R Squared = .793 (Adjusted R Squared = .787)

Table 6 shows that the calculated F-value for group is 180.539 at degrees of freedom of 1 and 101 at  $p < 0.05$ . The calculated F-value was significant at  $p < 0.05$  which is less than 0.05 level of probability ( $F = 180.539$ ,  $df = 1/101$ ,  $p < 0.05$ ). Hypothesis three was therefore rejected. This shows that there is a significant difference between the mean scores of students exposed to the experimental group and those in control group. Consequently, the finding indicates that the control group has little effect on students' mean performance in Home Economics.

## Discussion of Findings

The finding therefore revealed that the students who were exposed to simulation learning strategy obtained higher mean gain performance. the test of hypothesis showed that there is a significant mean difference between the simulation learning strategy and lecture method in this study. Thus, this finding is in agreement with Anikweze (2018) who deduced from the definition given that simulation is a selective representation of reality containing only those elements of reality that the designer deems relevant to his purpose. Simulation is a real-life situation, events or problems which usually involve issues, beliefs, interactions, points of view, attitudes; decisions and the resolution of problems. This is supported by Anwer (2019) determined the effects of activity-based teaching on student motivation and academic achievement. The results showed that majority of students' scores increased in experimental group as compared to the control group. The mean value indicated that participants from experimental group showed more achievement in post-test 15.6 while the control group students scored 10.7. The post-lesson survey showed that the majority students found the activity-based teaching to be more interesting than lecture-based teaching. The desire is further strengthened by the revelation of Akinsola and Animashun (2017) that experimentation with realistic simulation gives the students great insight that is very difficult to conceptualize by conventional teaching methods. Some essential learning skills inherent in simulation instructional strategy include; communication, Students must communicate with members of their small groups, write up their group results, present group results, discuss questions, invite audience response and also write for assessment; critical and creative thinking; students

must analyze, differentiate and discern; personal and social values and skills; students must reflect on the importance of competition and cooperation, learn how to invite members of their group to discuss their ideas as well as the audience and also how to present to an audience. Students are often more deeply involved in simulations than other activities because since they are “living” the activity, the opportunity therefore exists for increased engagement.

The result of the study revealed that the students who were exposed to group discussion learning strategy had higher mean performance than those taught with lecture method in this study. The test of hypothesis showed that there is a significant mean difference between the group discussion learning strategy and lecture method. This finding is in line with Ayogu, (2012) who investigated the effects of two instructional methods on secondary school students' attitudinal change to Home Economics. The two instructional methods investigated are concept mapping and an instructional model (PEDDA) with five steps comprising Prior-conception (P), Exploration (E), Discussion (D), Dissatisfaction (D) and Application (A). The findings of the study revealed that both PEDDA and concept mapping enhanced students' achievement in Home Economics and influenced students' attitudinal change to Home Economics. However, PEDDA showed superiority over concept mapping in enhancing students' achievement in Home Economics while concept mapping showed superiority over PEDDA in influencing students' attitudinal change to Home Economics. The reviewed work showed the efficacy of concept mapping on students' achievement and its superiority over PEDDA in influencing students' attitudinal change to Home Economics. It also applied mean, standard deviation and ANCOVA for the data analysis which were employed in this study. Odu (2006) also confirmed that the study defined Home Economics as the study of laws, conditions, principles and ideals which dealt with man as a social being and took cognizance of his interaction with his immediate physical environment. It stressed the importance of Home Economics to both sexes in improving the standard of living of families. It gave the five main concept areas of study in Home Economics as food and nutrition, home management and family economics, human development and the family, housing, textiles and clothing and delimits the three content areas for secondary school level. It identified some methods for teaching and pointed out the importance of demonstration method for aiding the students in acquiring laboratory experience which was an integral part of the discipline. A sample lesson notes was given and some defects in teaching are listed with suggested solutions. Listed also were the specific qualities of a good Home Economics teacher. This was supported by Lai and Lum (2012) who concluded that the study discussed an action research study using a wiki as a course platform for teaching and learning Home Economics in secondary schools. A secondary Home Economics teacher observed that dessert recipes were too wordy and that students generally felt bored and were not eager to read them in full. An action research approach was adopted in the study and the teacher tried to improve his teaching strategies to enhance interactions between the participants and improve students' learning outcomes. Furthermore, the teacher also attempted the integrating of assessment activities with wiki-based learning activities to support students' learning in his class.

The result obtained from the study revealed that among the lecture methods used, group discussion teaching strategy had the highest mean performance followed by simulation teaching strategy and the least among them was the lecture method. The test of hypothesis showed that there is a significant mean difference among the group discussion teaching strategy, simulation and lecture method in this study. This is in agreement with Ganyaupfu (2013) who investigated the differential effectiveness of teaching methods on students' academic performance. The results demonstrated that teacher-student interactive method was the most effective teaching method, followed by student-centered method while the teacher-centered approach was the least effective teaching method. In supporting the finding, Usman, Musta'ámal, Muhammad and Mohammed (2020) determined the effects of place-based and activity-based learning approaches on students' achievement, interest and retention in technical education. The study revealed that students taught technical education using the place-based education instructional approach had a higher mean score than students taught using the activity-based learning teaching method in cognitive achievement test, psychomotor achievement test and test for retention of learning. This finding is not in agreement with Uwameiye (2015) who examined students' perception of their home economics classroom learning environment. Findings indicated that home economics teachers do not have good method of teaching, since they were unable to make home economics lessons attractive and interesting to students, teachers of home economics were unable to encourage, support and give room for individual differences in the course of teaching their subject. Finally, home economics laboratories were not functional, equipment were not enough and those available were not maintained, no good lighting and students sometimes bring in equipment from home for home economics practical.

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## Conclusion

Activity based strategy is an innovative idea that is contributing more to students' academic performance especially in Home Economics. This is relevance only when the teachers are ready and willing to engage themselves with the students to ensure that they cause significant improvement in students' performance. The results showed that simulation and group discussion teaching strategies jointly and separately improve students' performance in Home Economics in secondary schools in the study.

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## Recommendations

Based on the findings, the research makes the following recommendations:

1. Federal, state and local government should agree to introduce a functioning innovative teaching strategy in junior secondary schools to cause positive improvement in the teaching of Home Economics.
2. Teachers at all levels should ensure that the idea of innovative teaching strategy is incorporated in their daily teaching to improve students' academic performance in home economics.
3. All teachers of Home Economics should consider using group discussion teaching strategy in order to improve students' performance.

4. In most cases the idea of innovative teaching strategy like group discussion and lecture method in relation to gender should be considered to check mate the performance level in Home Economics.
5. Innovative teaching strategy like simulation in relation to gender should also be considered to check mate the performance level in Home Economics.
6. The innovative idea should be used jointly by the teacher to effect and improvement in students' performance especially in Home Economics.

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