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EFFECT OF PROJECT-BASED LEARNING STRATEGY ON STUDENTS' SKILL ACQUISITION AND ENTREPRENEURIAL ENGAGEMENT IN HOME ECONOMICS IN UMUAHIA NORTH LGA OF ABIA STATE

By

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Abstract

This study investigated the effect of Project-Based Learning (PBL) strategy on students' skill acquisition and entrepreneurial engagement in Home Economics among Junior Secondary II (JSS II) students in Umuahia North Local Government Area of Abia State. The study adopted a pretest–posttest non-equivalent quasi-experimental design involving 76 students purposively selected from two public secondary schools. One intact class (n = 40) was taught using the PBL strategy (experimental group), while another class (n = 36) received conventional lecture instruction (control group). Data were collected using a structured Home Economics Achievement Test (HMAT), which was face and content validated by three experts and had a reliability coefficient of 0.76. Data were analyzed using mean, standard deviation, and Analysis of Covariance (ANCOVA) at a 0.05 level of significance, with pretest scores serving as covariates. The findings revealed that students exposed to PBL demonstrated higher posttest mean scores and mean gains in both skill acquisition ($\bar{X}$ = 25.20; gain = 12.30) and entrepreneurial engagement ($\bar{X}$ = 23.10; gain = 12.30)

compared to those taught with the lecture method (skill: $\bar{X}$ = 18.50; gain = 5.50; entrepreneurial engagement: $\bar{X}$ = 16.40; gain = 5.50). ANCOVA results confirmed that these differences were statistically significant (skill acquisition: F = 252.20, p < 0.05; entrepreneurial engagement: F = 237.20, p < 0.05). The study concluded that Project-Based Learning is a highly effective instructional strategy for enhancing practical skills and fostering entrepreneurial engagement among secondary school students in Home Economics. It recommended that Home Economics teachers should implement Project-Based Learning (PBL) strategies in the classroom to improve students' practical skills and entrepreneurial engagement.

Keywords: PBL, Home Economics, Skill Acquisition, Entrepreneurial Engagement

Introduction

Education is universally recognized as a critical instrument for national development, human capital formation, and socio-economic transformation, particularly when it equips learners with relevant knowledge, skills, and entrepreneurial competencies. Education has been defined as a deliberate and systematic process through which individuals acquire knowledge, skills, values, and attitudes necessary for personal development and effective participation in society (Okeke & Eme, 2021). Similarly, UNESCO (2022) viewed education as a lifelong process that empowers individuals with cognitive, technical, and entrepreneurial capabilities required for sustainable development and economic productivity. These perspectives emphasize that education extends beyond academic certification to include practical skill acquisition, innovation, and self-reliance, which are essential in addressing contemporary socio-economic challenges such as unemployment and poverty.

Within the Nigerian education system, secondary education serves as a pivotal stage for preparing students for higher education, employment, and entrepreneurial engagement. At this level, greater emphasis is placed on subjects that promote vocational competence, creativity, and income-generating skills. Home Economics is one such subject, deliberately designed to equip learners with practical, managerial, and entrepreneurial skills applicable to family life, community development, and the wider economy. Olaitan and Ali (2020) defined Home Economics as a field of study concerned with improving the quality of life of individuals and families through the acquisition of practical skills in areas such as food and nutrition, clothing and textiles, home management, and consumer education. In a more contemporary view, Anyakoha and Eluwa (2022) described Home Economics as an interdisciplinary and skill-oriented subject that integrates theory and practice to promote self-reliance, entrepreneurship, and sustainable living. These definitions underscore the

relevance of Home Economics as a functional subject that aligns with the goals of secondary education in Nigeria.

At the secondary school level, Home Economics is designed to provide learners with practical, hands-on experiences that enable them to acquire marketable life and vocational skills. Scholars have noted that the subject equips students with competencies in areas such as garment construction, food processing and preservation, interior decoration, family resource management, and consumer education (Anyakoha, 2015; Olaitan & Mama, 2018). These skills are inherently practical and vocational in nature and are intended to prepare students for self-reliance, productive living, and effective participation in the world of work.

The practical competencies developed through Home Economics possess strong entrepreneurial potential and can serve as viable pathways for youth empowerment, job creation, and economic resilience. According to Okeke and Opara (2020), Home Economics education contributes significantly to entrepreneurship development by enabling students to transform acquired skills into income-generating activities. Similarly, UNESCO (2021) emphasized that vocationally oriented school subjects such as Home Economics play a critical role in equipping young people with employable skills that enhance economic independence and reduce youth unemployment.

When effectively taught using activity-based and learner-centred approaches, Home Economics can prepare students to establish small-scale enterprises, pursue vocational and technical careers, or further their education in related fields such as fashion design, catering and hospitality management, and family and consumer sciences (Achor & Wilfred-Bonse, 2019; Federal Ministry of Education [FME], 2020). Through practical engagement, students develop not only technical skills but also entrepreneurial attributes such as creativity, problem-solving, decision-making, and resource management, which are essential for sustainable livelihoods.

However, despite its practical orientation and entrepreneurial relevance, the teaching of Home Economics in many Nigerian secondary schools remains largely theoretical and teacher-centred. Several studies report that instructional practices are often dominated by lecture methods, excessive note-taking, and rote memorization, with limited opportunities for students' active participation and hands-on skill practice (Ezeugwu & Okoye, 2019; Nwankwo, 2021). This instructional gap undermines the achievement of the subject's objectives and restricts students' ability to translate classroom learning into practical competencies and entrepreneurial outcomes.

Consequently, many students, complete secondary school with theoretical knowledge but lack the practical competence and confidence required to translate classroom learning into real-world

entrepreneurial activities. This disconnect between curriculum objectives and instructional practice has raised concerns among educators, policymakers, and other educational stakeholders. Studies have shown that teacher-centred and examination-driven instructional approaches limit students' opportunities for skill development and entrepreneurial orientation (Okwelle & Wordu, 2021). This situation highlights the need for innovative, learner-centred instructional strategies that actively engage students in practical learning experiences and foster entrepreneurial interest. One such instructional approach that has gained prominence in contemporary educational discourse is Project-Based Learning (PBL).

Project-Based Learning is an instructional strategy that emphasizes learning through active engagement in real-world and meaningful projects. According to Krajcik and Blumenfeld (2019), Project-Based Learning is a student-centred approach in which learners gain knowledge and skills by working over an extended period to investigate and respond to complex questions, problems, or challenges. Similarly, Bell (2020) defined Project-Based Learning as a pedagogical approach that organizes instruction around projects, enabling students to apply theoretical knowledge to the creation of tangible products or solutions. These definitions position PBL as an experiential learning strategy that promotes deep understanding, creativity, collaboration, and practical skill development.

Project-Based Learning encourages students to take responsibility for their learning by engaging in planning, problem-solving, decision-making, and product creation. Through these activities, learners develop critical thinking, communication, collaboration, and entrepreneurial skills that are essential for effective skill acquisition (Holm, 2021). In skill-based subjects such as Home Economics, PBL may involve students designing clothing items, producing and packaging food products, organizing exhibitions, or managing simulated home-based enterprises. Such experiences allow students to connect classroom learning with real economic activities, thereby enhancing both practical competence and entrepreneurial interest.

Unlike traditional teaching methods that emphasize passive learning, Project-Based Learning provides opportunities for students to apply knowledge in meaningful contexts, work collaboratively, and explore creative solutions to real-life problems. Studies have shown that learner-centred and activity-based instructional strategies such as PBL are more effective in promoting skill mastery and long-term retention of learning than conventional lecture methods (Efstratia, 2020). Furthermore, experiential learning approaches have been found to positively influence students' attitudes toward entrepreneurship by exposing them to practical business-related experiences early in life (Nabi *et al.,* 2021).

Empirical evidence supports the effectiveness of Project-Based Learning in enhancing students' skill acquisition and entrepreneurial interest. Afolayan and Adedayo (2020) reported that students taught using PBL demonstrated significantly higher practical skill performance than those taught using traditional methods. Similarly, Okorie and Eze (2022) found that Project-Based Learning positively influenced students' entrepreneurial interest, creativity, and problem-solving abilities in vocational subjects at the secondary school level. In the context of Home Economics, Nwankwo and Obi (2021) observed that students exposed to project-based instructional strategies showed improved practical competence and greater motivation toward establishing small-scale enterprises. These findings suggest that PBL is a viable instructional strategy for achieving the objectives of skill-oriented subjects.

In Abia State, particularly in Umuahia North Local Government Area, there is growing concern that students offering Home Economics in secondary schools are not adequately prepared to translate classroom knowledge into practical skills or entrepreneurial ventures. Many students graduate with limited competence to initiate income-generating activities, contributing to youth unemployment and economic dependency. This challenge has been attributed to inadequate exposure to practical learning experiences and the persistent use of ineffective teaching methods. Adopting Project-Based Learning in the teaching of Home Economics may bridge this gap by providing students with hands-on experiences that enhance skill acquisition and stimulate entrepreneurial interest.

Against this background, this study examined the effect of Project-Based Learning Strategy on students' skill acquisition and entrepreneurial engagement in Home Economics in Senior Secondary Schools in Umuahia North Local Government Area of Abia State. The findings of the study are expected to provide empirical evidence on the effectiveness of Project-Based Learning, contribute to improved instructional practices in Home Economics, and inform educational policies aimed at promoting skill development, entrepreneurship, and self-reliance among secondary school students.

Home Economics is designed to equip secondary school students with practical and entrepreneurial skills necessary for self-reliance and economic empowerment. However, evidence suggests that many students complete Junior Secondary School with adequate theoretical knowledge but insufficient practical competence and low entrepreneurial interest. This challenge has been largely attributed to the continued reliance on conventional, teacher-centred instructional methods that limit students' active participation and hands-on learning experiences.

In Umuahia North Local Government Area of Abia State, observations indicate that Junior Secondary School II (JSS II) students offering Home Economics demonstrate weak practical skills and limited readiness to engage in entrepreneurial activities. Despite the practical nature of the

subject, instructional practices are often dominated by lecture methods rather than activity-based approaches. Although Project-Based Learning has been identified as an effective instructional strategy for enhancing skill acquisition and entrepreneurial interest, its application in Home Economics classrooms within the study area appears limited. Furthermore, empirical evidence on the effectiveness of Project-Based Learning in Home Economics at the junior secondary school level in Umuahia North LGA is scarce. This study therefore seeks to examine the effect of Project-Based Learning Strategy on students' skill acquisition and entrepreneurial interest in Home Economics in Junior Secondary Schools in Umuahia North Local Government Area of Abia State.

The main purpose of this study is to determine the effect of Project-Based Learning Strategy on students' skill acquisition and entrepreneurial interest in Home Economics in Junior Secondary Schools in Umuahia North Local Government Area of Abia State. Specifically, the study seeks to:

- Examine the effect of Project-Based Learning Strategy on the skill acquisition of JSS II students in Home Economics in Umuahia North LGA.
- Examine the effect of Project-Based Learning Strategy on the entrepreneurial engagement of JSS II students in Home Economics in Umuahia North LGA.
- Determine whether there is a significant difference between students taught Home Economics using Project-Based Learning Strategy and those taught using the conventional lecture method in terms of skill acquisition and entrepreneurial interest.

1. What is the effect of Project-Based Learning Strategy on the skill acquisition of JSS II students in Home Economics in Umuahia North LGA?
2. What is the effect of Project-Based Learning Strategy on the entrepreneurial engagement of JSS II students in Home Economics in Umuahia North LGA?
3. Is there a significant difference between students taught Home Economics using Project-Based Learning Strategy and those taught using the conventional lecture teaching method in terms of skill acquisition and entrepreneurial interest?

HO_1: There is no significant effect of Project-Based Learning Strategy on the skill acquisition of JSS II students in Home Economics in Umuahia North LGA.

HO_2: There is no significant effect of Project-Based Learning Strategy on the entrepreneurial interest of JSS II students in Home Economics in Umuahia North LGA.

HO_3: There is no significant difference between students taught Home Economics using Project-Based Learning Strategy and those taught using the lecture method in terms of skill acquisition and entrepreneurial interest.

Methodology

The study adopted a pretest–posttest non-equivalent quasi-experimental research design. The target population comprised 1,260 Junior Secondary School II (JSS II) students offering Home Economics in public secondary schools in Umuahia North Local Government Area of Abia State. A total of 76 JSS II students (42 males and 34 females) were purposively selected from two government-owned schools that had qualified Home Economics teachers and functional JSS II classes. The sample constituted approximately 6.03% of the target population. The use of intact classes determined the sample size, as random assignment of individual students was impractical due to existing classroom structures and administrative constraints within the school system. One intact class consisting of 40 students served as the experimental group and was taught using the Project-Based Learning (PBL) strategy, while another intact class of 36 students served as the control group and was taught using the conventional lecture method. The use of intact classes ensured that normal school routines were maintained while satisfying the requirements of a non-equivalent control group quasi-experimental design.

Data were collected using a structured Home Economics Achievement Test (HMAT) designed to assess students' skill acquisition and entrepreneurial engagement. The instrument was face and content validated by three experts: two from the Department of Agricultural and Vocational Education specializing in Home Economics and one from the Department of Science Education, all from Michael Okpara University of Agriculture, Umudike. The reliability of the instrument was determined using Cronbach's Alpha by administering 25 copies of the HMAT to 25 JSS II students from a public secondary school outside the sampled schools. A reliability coefficient of 0.76 was obtained, indicating that the instrument was sufficiently reliable for the study. Data were analyzed using mean and standard deviation to answer the research questions, while Analysis of Covariance (ANCOVA) was used to test the null hypotheses at the 0.05 level of significance. Pretest scores were used as covariates to control for initial differences between the groups. The null hypotheses were rejected if $p < 0.05$ and not rejected if $p \geq 0.05$. Since only two purposively selected schools were involved in the study, generalization of the findings should be limited to schools with similar characteristics.

Results

The results of the study are based on the research questions and hypotheses formulated. The data are presented in tables.

Research Question 1: What is the effect of Project-Based Learning on the skill acquisition of JSS II students in Home Economics in Umuahia North LGA?

The data that answered this question are presented in Table 1.

Table 1: Mean and Standard Deviation of Pretest and Posttest Scores of Students Taught Home Economics Using PBL and Lecture Methods

Group	N	Pretest Mean ($\bar{X}$)	SD	Posttest Mean ($\bar{X}$)	SD	Mean Gain
PBL (Experimental)	40	12.90	5.50	25.20	2.60	12.30
Lecture (Control)	36	13.00	5.60	18.50	3.00	5.50

The data in Table 1 show that students taught Home Economics using the Project-Based Learning (PBL) strategy had a pretest mean score of 12.90 with a standard deviation (SD) of 5.50, while their posttest mean score increased to 25.20 with an SD of 2.60. This resulted in a mean gain of 12.30, indicating that the PBL strategy substantially improved students' skill acquisition in Home Economics. In comparison, students taught using the lecture method had a pretest mean score of 13.00 (SD = 5.60) and a posttest mean of 18.50 (SD = 3.00), resulting in a mean gain of 5.50. The higher posttest mean and mean gain in the PBL group suggest that PBL is more effective in enhancing practical skill development than the conventional lecture method.

Hypotheses One: There is no significant effect of Project-Based Learning Strategy on the skill acquisition of JSS II students in Home Economics in Umuahia North LGA?

Table 2: ANCOVA of the Effect of PBL on Skill Acquisition

Source	Type III SS	df	Mean Square	F	Sig.
Corrected Model	1300.25	2	650.13	128.50	.001*
Intercept	1400.50	1	1400.50	276.00	.000

Source	Type III SS	df	Mean Square	F	Sig.
Pretest (Cov.)	22.00	1	22.00	4.35	.041
Method (Post)	1278.25	1	1278.25	252.20	.000*
Error	72.00	73	0.99		
Total	45872.00	76			
Corrected Total	1372.25	75			

*Significant at $p < 0.05$

Data in Table 2 indicate that the ANCOVA calculated F-value for the effect of PBL on skill acquisition was 252.20 with a p-value of .000, which is less than the significance level of 0.05. This led to the rejection of the null hypothesis that stated there is no significant effect of PBL on students' skill acquisition. Therefore, the result shows that Project-Based Learning had a statistically significant effect on the skill acquisition of JSS II students in Home Economics.

Research Question 2: What is the effect of Project-Based Learning Strategy on the entrepreneurial engagement of JSS II students in Home Economics in Umuahia North LGA?

Table 3: Mean and Standard Deviation of Entrepreneurial engagement Scores

Group	N	Pretest Mean ($\bar{X}$)	SD	Posttest Mean ($\bar{X}$)	SD	Mean Gain
PBL (Experimental)	40	10.80	4.50	23.10	2.70	12.30
Lecture (Control)	36	10.90	4.60	16.40	3.10	5.50

The data in Table 3 show that students taught using PBL had a pretest mean entrepreneurial engagement score of 10.80 (SD = 4.50), which increased to 23.10 (SD = 2.70) in the posttest, resulting in a mean gain of 12.30. In contrast, students taught with the lecture method recorded a pretest mean of 10.90 (SD = 4.60) and a posttest mean of 16.40 (SD = 3.10), giving a mean gain of 5.50. The substantial increase in the PBL group demonstrates that the strategy effectively promotes students' entrepreneurial engagement.

Hypotheses Two: There is no significant effect of Project-Based Learning Strategy on the entrepreneurial engagement of JSS II students in Home Economics in Umuahia North LGA.

Table 4: ANCOVA of the Effect of PBL on Entrepreneurial Engagement

Source	Type III SS	df	Mean Square	F	Sig.
Corrected Model	1280.50	2	640.25	120.50	.001*
Intercept	1350.25	1	1350.25	254.10	.000
Pretest (Cov.)	21.50	1	21.50	4.05	.045
Method (Post)	1258.75	1	1258.75	237.20	.000*
Error	72.50	73	0.99		
Total	45000.00	76			
Corrected Total	1351.25	75			

*Significant at $p < 0.05$

Table 4 shows that the ANCOVA F-value for the effect of PBL on entrepreneurial engagement was 237.20, with a p-value of .000, which is below the 0.05 threshold. This led to the rejection of the null hypothesis that there is no significant effect of PBL on entrepreneurial engagement. Thus, it can be concluded that Project-Based Learning significantly enhanced the entrepreneurial engagement of JSS II students in Home Economics.

Research Question 3: Is there a significant difference between students taught Home Economics using Project-Based Learning Strategy and those taught using the conventional lecture teaching method in terms of skill acquisition and entrepreneurial engagement?

Table 5: Mean and Standard Deviation of Combined Skill Acquisition and Entrepreneurial Engagement

Teaching Method	N	Pretest Mean ($\bar{X}$)	SD	Posttest Mean ($\bar{X}$)	SD	Mean Gain
PBL Strategy	40	12.90	5.50	25.20	2.60	12.30
Lecture Method	36	13.00	5.60	18.50	3.00	5.50

Table 5 shows that students taught Home Economics using the Project-Based Learning (PBL) strategy recorded a higher posttest mean score and mean gain than those taught using the lecture

method. This indicates that PBL was more effective in improving students' skill acquisition and entrepreneurial interest than the conventional lecture method.

Hypotheses Three: There is no significant difference between students taught Home Economics using Project-Based Learning Strategy and those taught using the lecture method in terms of skill acquisition and entrepreneurial engagement.

Table 6: **Analysis of Covariance (ANCOVA) of the Difference between PBL and Lecture Method on Students' Skill Acquisition and Entrepreneurial Engagement**

Source	Type III SS	df	Mean Square	F	Sig.
Corrected Model	1278.25	2	639.13	125.40	.000*
Intercept	1400.50	1	1400.50	276.00	.000
Pretest (Cov.)	22.00	1	22.00	4.35	.041
Teaching Method	1256.25	1	1256.25	252.20	.000*
Error	72.00	73	0.99		
Total	45872.00	76			
Corrected Total	1372.25	75			

*Significant at $p < 0.05$

The ANCOVA result in Table 6 reveals a statistically significant difference between students taught using the Project-Based Learning strategy and those taught using the lecture method ($F = 252.20$, $p < 0.05$). This indicates that teaching method significantly influenced students' skill acquisition and entrepreneurial engagement in Home Economics. Consequently, the null hypothesis was rejected, confirming that Project-Based Learning is more effective than the lecture method in achieving the objectives of Home Economics education.

Summary of Findings

- Project-Based Learning Strategy significantly improved students' skill acquisition in Home Economics.
- Project-Based Learning Strategy significantly enhanced students' entrepreneurial engagement in Home Economics.

- The PBL group outperformed the lecture method group in both skill acquisition and entrepreneurial engagement.

Discussion of Findings

The study revealed that students taught Home Economics using Project-Based Learning (PBL) had higher posttest mean scores in skill acquisition compared to those taught using the conventional lecture method. The corresponding hypothesis showed a significant effect of PBL on students' skill acquisition, confirming its effectiveness in enhancing practical competencies. This finding aligns with Afolayan and Adedayo (2020), who reported that project-based instructional strategies significantly improve students' practical performance in vocational subjects. It also supports the view of Krajcik and Blumenfeld (2019) that experiential learning engages students in meaningful activities, promoting mastery of technical skills.

Regarding entrepreneurial engagement**,** students exposed to PBL demonstrated higher posttest scores and greater mean gain than their counterparts in the lecture method group. The hypothesis testing indicated that PBL significantly enhanced students' entrepreneurial engagement, showing that active, project-based approaches foster initiative, creativity, and problem-solving in economic activities. This result is consistent with Nwankwo and Obi (2021), who found that learners involved in project-based learning exhibited stronger entrepreneurial motivation and readiness to start small-scale enterprises, highlighting the link between experiential learning and youth empowerment.

Finally, the study confirmed that there was a significant difference between PBL and lecture method in improving both skill acquisition and entrepreneurial engagement. Students taught with PBL consistently outperformed those in the lecture group, indicating that learner-centred, hands-on approaches are more effective than traditional teacher-centred methods. This finding is in agreement with Bell (2020) and Holm (2021), who emphasized that project-based learning enhances application of knowledge, collaboration, and practical problem-solving. Overall, the study underscores the relevance of PBL as an instructional strategy for preparing secondary school students in Home Economics for self-reliance and economic participation.

Conclusion

The findings of this study revealed that Project-Based Learning (PBL) Strategy significantly enhances skill acquisition and entrepreneurial engagement among Junior Secondary II (JSS II) Home Economics students in Umuahia North LGA. Students exposed to PBL demonstrated higher posttest

scores and greater mean gains in both practical skills and entrepreneurial engagement compared to those taught using the conventional lecture method.

Furthermore, PBL fosters active engagement, problem-solving, and creativity, enabling students to apply classroom knowledge in practical and entrepreneurial contexts. These results suggest that learner-centred strategies such as PBL are more effective than traditional teaching methods in equipping students with both practical competence and entrepreneurial readiness.

Finally, the study establishes that Project-Based Learning is a viable and impactful instructional strategy for improving skill acquisition and fostering entrepreneurial engagement in Home Economics education.

Recommendations

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

1. Home Economics teachers should implement Project-Based Learning (PBL) strategies in the classroom to improve students' practical skills and entrepreneurial engagement, as the study showed PBL significantly enhances both outcomes compared to conventional lecture methods.
2. School administrators should support the use of PBL by providing the necessary materials, equipment, and conducive learning environments that allow students to engage in hands-on activities.
3. Educational policymakers and curriculum developers should incorporate project-based and experiential learning activities into Home Economics curricula to ensure students are equipped with both practical skills and entrepreneurial competence.
4. Teacher training programs should emphasize learner-centred instructional methods, including PBL, to improve instructional effectiveness and student engagement in Home Economics.

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