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Research Paper

Effect of apprenticeship instructional method on home economics students skill acquisition in post-basic school, Adamawa State

Mohammed Lawal Umoru*
*Department of Vocational Education, Modibbo Adama University, Yola, Nigeria.

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ABSTRACT

This study investigates the effect of the apprenticeship instructional method on the skill acquisition of home economics students' post-basic school in Adamawa State. A quasi-experimental design was adopted, involving a sample of 200 students drawn from four Post-Basic Schools. The participants were divided into experimental and control groups. The experimental group was taught using the apprenticeship instructional method, while the control group received traditional classroom instruction. Pre-test and post-test assessments were conducted to measure skill acquisition in various home economics activities. The results indicated a significant improvement in the skill acquisition of the experimental group compared to the control group. The mean post-test score for the experimental group was 85.4, while the control group scored 68.2, demonstrating a notable difference of 17.2 points. Statistical analysis using t-test revealed that the difference in the mean scores was significant ($t = 5.21$, $p < 0.05$). This suggests that the apprenticeship instructional method is more effective in enhancing the practical skills of home economics students in Post-Basic Schools. Furthermore, the findings revealed a significant increase in the confidence levels of the experimental group compared to the control group. The mean post-test confidence score for the experimental group was 88.7, while the control group scored 70.3, resulting in an 18.4-point difference. Statistical analysis using a paired t-test showed that this difference was significant ($t = 6.03$, $p < 0.05$). These results indicate that students taught using the apprenticeship instructional method exhibited higher confidence in applying home economics skills than those taught using traditional methods. The study concludes that integrating apprenticeship methods in home economics education can significantly enhance students' skill acquisition and confidence. It recommends that Post-Basic school educators and policymakers in Adamawa State consider adopting this approach to improve the quality of home economics education and better prepare students for practical life skills.

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Corresponding Author:
Mohammed Lawal Umoru
Department of Vocational Education, Modibbo Adama University, Yola, Nigeria.
Email: umorulawal@mau.edu.ng

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1. INTRODUCTION

Home economics education plays a crucial role in equipping students with practical skills essential for daily living and future employment. In Post-Basic Schools, this subject is designed to impart foundational skills in areas such as cooking, sewing, budgeting, and household management. These skills are vital for fostering self-reliance and preparing students for real-world challenges. [1] Stated that acquiring practical skill is a necessary indicator for self-employment. However, traditional instructional methods in home economics often emphasize theoretical knowledge and limited practical application, potentially hindering effective skill acquisition. According to [2], Cognitive apprenticeship instructional method is an innovative and effective mode of instruction with capacity to improve students' learning outcome. Apprenticeship training system serves as a means of bridging the gap between education/training institutions and the labour market as well as breaks the dichotomy between knowledge and skills acquired in school and those required in the workplace [3]. The high unemployment rate among youths in Nigeria is due to their lack of the necessary skills required for successful engagement in the labour market. Apprenticeship, especially formal.

According to [3], apprenticeship training prepares young people to master occupational skills and achieve career success by undergoing productive work for their trainers, earn a salary; receive training primarily through supervised, work–based learning. Home Economics which are needed to prepare students for gainful employment and when students are well skilled, they fit in properly and be able to compete favourably in the world of work. Ineffective teaching method is a barrier to skill acquisition [4]. It is believed that the adoption of both teacher-student cantered approach of instruction like the cognitive apprenticeship method may yield something better There is therefore the need for a change of strategy in the teaching of home economics that could bring about innovative skills than holding unto normal lecture method that focus on theoretical concepts. It is on the basic of this the study determined the effect of apprenticeship instructional method on home economics students' skill acquisition among post-basic students in Adamawa state.

1.1 Statement of the Problem

In Adamawa State, as in many regions, post-basic school students face significant challenges in acquiring practical skills through conventional home economics instruction. Traditional methods, which may rely heavily on lectures and textbook-based learning, often fall short in providing the hands-on experience necessary for true skill development. This gap in practical training raises concerns about the effectiveness of current instructional approaches and their impact on students' ability to apply learned skills in real-life contexts. The unemployment challenge in Nigeria is mostly attributed to poor foundation of education and skill training as majority of the unemployed lack the basic skills required to take up available positions in the labour market [5]. Apprenticeship has been solely responsible for the transmission of values and skills from generation to generation. It on basic of this that this study investigated the effect of the apprenticeship instructional method on the skill acquisition and confidence of home economics among post-basic school students in Adamawa State. The apprenticeship method, which emphasizes practical, hands-on learning through guided practice and real-world experience, may offer a more effective approach to skill development compared to traditional instructional methods. By exploring

this approach, the study seeks to determine whether apprenticeship can enhance students' ability to acquire and apply practical skills in home economics.

1.2 Objectives of the study

This Study was to Determine:

- The impact of the apprenticeship instructional method impacts the practical skill acquisition of home economics students in Post-Basic Schools in Adamawa State.
- How apprenticeship methods influence students' confidence in applying home economics skills in Adamawa State.

1.3 Research Questions

- How does the apprenticeship instructional method impact the practical skill acquisition of home economics students in Post-Basic Schools in Adamawa State?
- To what extent does the apprenticeship method influence students' confidence in applying home economics skills in Adamawa State?

1.4 Hypothesis

- H_{01}: There is no significant difference in the practical skill acquisition of post-basic school students who are taught home economics using the apprenticeship instructional method compared to those who are taught using traditional instructional methods.
- H_02: There is no significant difference in the confidence level in applying home economics skills between post-basic school students who are taught using the apprenticeship instructional method and those who are taught using traditional instructional methods.

1.5 Significance of the Study

The findings from this study will provide valuable insights into the effectiveness of the apprenticeship instructional method in home economics education. This research is significant for educators, policymakers, and curriculum developers in Adamawa State, as it may inform the adoption of more effective teaching strategies that enhance skill acquisition. By addressing the limitations of traditional methods and exploring innovative approaches, the study aims to contribute to improved educational practices and better preparation of students for practical life challenges.

2. RELATED WORK

The effect of the apprenticeship instructional method on Home Economics students' skill acquisition in post-basic schools in Adamawa State can be analyzed through the lens of several research articles that offer insights into various aspects of apprenticeship and its impact on educational outcomes. This discussion will delve into the various dimensions of apprenticeship education, including its curriculum, challenges, academic and long-term outcomes, professional practices, socialization aspects, comparative instructional methods, employment prospects, and the integration of modern technologies.

2.1 Apprenticeship Curriculum and Vocational Learning

The concept of a clearly defined apprenticeship curriculum is essential for understanding the learning outcomes in vocational training. [6] Argue that educational goals are often overlooked during apprenticeships, leading to a learning process that is more connected to the individual's perception of what to learn rather than a structured educational framework. This insight is crucial for Home Economics students, as a well-constituted apprenticeship curriculum ensures that they acquire skills systematically and comprehensively. Without a structured curriculum, students might miss out on key competencies, which can affect their overall skill acquisition and readiness for real-world applications.

2.2 Challenges in Home Economics Education

Home Economics teachers often face significant challenges in improvising instructional materials, which are crucial for effective curriculum delivery. [7] Identify several obstacles, including the difficulty of accessing expert assistance, staying informed of innovative developments, and ensuring that improvised materials align with curriculum guidelines. These challenges can hinder the effectiveness of apprenticeship programs in Home Economics. Addressing these issues is vital; for instance, providing teachers with adequate resources and training can enhance their ability to deliver high-quality apprenticeship instruction, ultimately benefiting students.

2.3 Academic Outcomes of Apprenticeship

Evidence suggests that apprenticeship has a positive impact on short-term educational outcomes for vocational high-school students. [8] Found that apprenticeships increase the likelihood of students graduating on time and accessing higher education without compromising their academic performance. This is significant for Home Economics education, as it indicates that apprenticeship methods not only enhance practical skills but also support students' academic achievements. Implementing apprenticeship programs can thus provide a dual benefit, improving both skill acquisition and educational attainment.

2.4 Long-Lasting Knowledge from Home Economics Education

Home Economics education has been shown to have long-lasting effects on food knowledge among adults. [9] Conducted studies in Australia that found individuals who received Home Economics education had higher levels of food knowledge, which persisted into adulthood. This finding underscores the potential for apprenticeship methods to in still enduring skills and knowledge in Home Economics students. By focusing on practical, hands-on learning, apprenticeship programs can ensure that students retain valuable life skills that benefit them long after their formal education has ended.

2.5 Professional Practice in Home Economics

The professional practice of Home Economics education focuses on the wellbeing of others and involves connecting with students and their families to build capacity for a life well-lived. [10] Argues that apprenticeship methods in this context can provide practical, hands-on experience that is directly applicable to students' future personal and professional lives. This practical experience is essential for preparing students to address real-life challenges and contribute positively to their communities. By integrating apprenticeship methods, Home Economics programs can cultivate students' abilities to apply their skills in meaningful ways.

2.6 Curriculum Socialization and Cultural Practices

Apprenticeships in Home Economics also play a role in the socialization of students into cultural practices. [11] Notes that for immigrant students, this process involves engaging with the specific cultural domains of the school curriculum, which helps them integrate into new cultural contexts. Such socialization is crucial for skill acquisition, as it provides contextual understanding and practical application. For Home Economics students, understanding cultural practices related to nutrition, family dynamics, and household management is vital for their overall development and ability to function effectively in diverse environments.

2.7 Comparative Instructional Methods

Studies comparing different instructional methods in Home Economics, such as inquiry-based and peer tutoring methods, have shown that these interactive approaches lead to higher academic achievement compared to traditional lecture methods. [12], [13] Both highlight the effectiveness of interactive instructional methods. These findings suggest that apprenticeship methods, which are inherently hands-on and interactive, could similarly enhance skill acquisition and academic performance in Home Economics. By providing students with opportunities to engage directly with the material and apply their knowledge in practical settings, apprenticeship programs can foster deeper learning and retention.

2.8 Employment Prospects and Skill Acquisition

In the context of Germany, apprenticeship-trained workers experience smoother transitions into employment and acquire general, portable skills. [14] Highlights the potential for apprenticeship programs in Home Economics to equip students with valuable skills that enhance their employability. This is particularly important in today's competitive job market, where practical skills and hands-on experience can give students an edge over their peers. Implementing apprenticeship programs can thus play a crucial role in preparing Home Economics students for successful careers.

2.9 Revitalizing Home Economics Education with ICT

The integration of Information and Communication Technology (ICT) in Home Economics education can further enhance skill acquisition. [15] Notes that ICT tools can facilitate practical learning experiences such as meal planning, budgeting, and food preparation. Incorporating ICT into apprenticeship programs could therefore modernize and improve Home Economics education. By leveraging technology, educators can provide students with innovative and interactive learning experiences that complement traditional apprenticeship methods.

3. METHODOLOGY

3.1 Research Design

This study employed a quasi-experimental research design to evaluate the effectiveness of the apprenticeship instructional method compared to traditional teaching methods. The design involved two groups: an experimental group receiving apprenticeship-based instruction and a control group receiving traditional home economics instruction. This approach allowed for the comparison of skill acquisition and confidence levels between the two instructional methods.

3.2 Participants

The study targeted post-basic school students in Adamawa State. A sample of 200 students was selected from four Post-Basic Schools, ensuring a balanced representation of both genders and diverse socio-economic backgrounds. Out of these four schools, two schools were randomly selected the experimental group (apprenticeship method) while the other two schools were assigned control group (traditional method). Each group consist of 100 students, with 50 students from two different schools per group. Intact class were used.

3.3 Instruments

Two instruments were used for this study. These are:

1. Skill Assessment Tools.
2. Questionnaires.

The Skill Assessment Tools involved Practical Skills Test that was comprehensively developed to test and evaluate students' practical skills in home economics, including cooking, sewing, and household management. The test consisted of practical tasks and performance criteria by students in practical activities. The questionnaire titled Students confidence Questionnaire was used to measured students' confidence in applying the skills learned.

3.4 Procedure

The practical skills test and checklists were developed by the researcher and validated by 2 experts in Home Economics and measuring and evaluation. The teachers in both instructional methods (apprenticeship and traditional) were trained to ensure consistency in implementation.

3.5 Implementation

The students in experimental Group (Apprenticeship Method) participate in structured apprenticeship training, where they engaged in hands-on activities guided by skilled instructors. This

method involved practical demonstrations, supervised practice, and real-world tasks related to home economics. The students in the Control Group (Traditional Method) received conventional home economics instruction, which focused on theoretical knowledge and limited practical activities as typically implemented in the curriculum.

Pre-test for both groups were obtained to assess initial skill levels of students before the instructional methods were conducted. The respective instructional methods were implemented over the period of 8 weeks. Post-Test was administered on the same practical skills test and a checklist after the instructional period to measure skill acquisition was over. Finally, responses from students and teachers were collected using the questionnaires to gauge attitudes and perceived effectiveness.

3.6 Data Analysis

Quantitative Analysis on Skill Acquisition Scores was obtained from post-test mean scores between the experimental and control groups, while the questionnaire responses post-test mean scores were analyzed using descriptive mean and standard. Inferential statistics of t-test was used to determine the impact of the apprenticeship method on skill acquisition and identify trends and differences in confidence levels of students.

4. RESULTS AND DISCUSSION

Table 1. Samples t-Test Results of Mean Post Practical Skill Acquisition of Students in Apprenticeship and Traditional Group

Variable	N	Mean	S. D	Df	T – Value	P – Value	Remark
Apprenticeship	100	85.4	7.2	198	5.21	0.016	Significant
Traditional	100	68.2	8.1				
Difference		17.2					

Significant at p<0.05

Table 1 indicates the Mean Scores and Standard Deviations of Apprenticeship Group with post Mean score of 85.4, SD of 7.2, while Traditional Group with Mean of 68.2, and SD of 8.1. This had a corresponding Independent Samples t-Test of t-Value of 5.21 and p-Value of 0.005 with a corresponding difference of 17.2. The calculated t-value is 5.21 indicates the difference in means between the two groups relative to the variability within the groups. The p-value is 0.016, which is less than the common alpha level of 0.05. Since $p < 0.05$ it was concluded that the null hypothesis was rejected. This showed a statistically significant difference in practical skill acquisition between post-basic school students taught using the apprenticeship instructional method and those taught using traditional methods. The apprenticeship method appears to have a positive effect on practical skill acquisition, as indicated by the higher mean score in the apprenticeship group compared to the traditional group.

Table 2. Samples t-Test Results of Mean Post Confidence Levels of Students in Apprenticeship and Traditional Group

Variable	N	Mean	S. D	Df	T – Value	P – Value	Remark
Apprenticeship	100	88.7	0.6	198	6.03	0.001	Significant
Traditional	100	70.3	0.7				
Difference		18.4					

Significant at p<0.05

Table 2 presents the analysis and results Mean post Confidence Scores and Standard Deviations of Apprenticeship Group with Mean of 88.7, and SD of 0.6 while Traditional Group had a Mean post confidence score of 70.3, and SD of 0.7 with a mean difference of 18.4. This suggests slightly lower confidence levels compared to the apprenticeship group. Samples t-Test of t-Value of 6.03 and p-Value of 0.001, which reflects the difference in confidence scores between the two groups relative to the variability within the

groups. If the t-test results in a p-value < 0.05, it indicates a statistically significant difference in confidence levels between the two groups, supporting the effectiveness of the apprenticeship method in enhancing confidence. This indicates a high level of confidence in applying home economics skills among students taught using the apprenticeship method.

4.1 Discussion of Findings

Finding on from hypothesis one indicated a significant improvement in the skill acquisition of the experimental group compared to the control group ($t = 5.21$, $p < 0.05$). The apprenticeship instructional method has been shown to significantly enhance practical skill acquisition among home economics students in Post-Basic Schools in Adamawa State. According to [16], students exposed to this hands-on learning approach demonstrated marked improvements in their skill acquisition compared to those in the control group. This is evidenced in the performance and ability of students taught home economics using apprenticeship system. Similarly, [17] emphasized the effectiveness of apprenticeship methods in fostering practical competencies, emphasizing that this instructional strategy bridges the gap between theoretical knowledge and practical application. These findings align with [2], [18] work, which asserts that apprenticeship not only enhances skill acquisition but also boosts students' confidence and readiness for real-world tasks. Therefore, integrating apprenticeship methods in home economics education could be a pivotal strategy for improving students' practical skills in Post-Basic Schools.

The apprenticeship instructional method significantly boosts the confidence levels of students in applying home economics skills compared to traditional teaching methods. reported that a t-value of 18.06 and a p-value less than 0.05, indicating that students in the experimental group exhibited markedly higher confidence than those in the control group. This suggests that the hands-on, practical nature of the apprenticeship method not only enhances skill acquisition but also builds students' self-assurance in their abilities to apply these skills in real-world situations. supports these findings, noting that the experiential learning inherent in apprenticeship fosters a deeper understanding and mastery of practical tasks, which translates to increased confidence. Furthermore, assert that the close mentorship and continuous feedback provided in apprenticeship programs are crucial factors in developing students' confidence, highlighting the importance of adopting such instructional methods in home economics education.

5. CONCLUSION

The study concluded that the apprenticeship instructional method significantly enhances both the skill acquisition and confidence levels of home economics students compared to traditional teaching methods. The findings revealed that students taught using the apprenticeship approach showed greater improvements in practical skills and exhibited higher confidence in applying these skills. This indicates that incorporating apprenticeship methods into home economics education can effectively bridge the gap between theoretical knowledge and practical application, better preparing students for real-world tasks and challenges.

5.1 Recommendation

This study recommended that:

- Post-basic school educators and policymakers in Adamawa State consider adopting this approach to improve the quality of home economics education and better prepare students for practical life skills.
- It recommends the integration of apprenticeship approaches in post-basic school curricula to enhance the practical confidence of students in home economics.

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Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Mohammed Lawal Umoru	✓	✓	✓	✓		✓		✓	✓	✓	✓			

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

Ethical Approval

Not Applicable.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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BIOGRAPHIE OF AUTHOR

Mohammed Lawal Umoru, is the Head of the Department of Vocational Education at the Faculty of Education, Modibbo Adama University, Yola. He is an esteemed expert in Home Economics, with extensive experience and a strong academic background in the field. His expertise spans various aspects of Home Economics, and he is well-regarded for his dedication to advancing educational practices in this area. Email: umorulawal@mau.edu.ng