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Research article

EXPERIMENTATION, INNOVATION AND CONSUMER AWARENESS AS DETERMINANTS OF EFFECTIVE TEACHING AND LEARNING OF HOME ECONOMICS IN THE UNIVERSITY OF CALABAR, NIGERIA

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ABSTRACT

This study examined experimentation, innovation and consumer awareness as determinants of effective teaching and learning of Home Economics in the University of Calabar, Nigeria. Two research questions and two null hypotheses guided the study. A descriptive survey design was adopted, and the accessible population comprised forty Home Economics students. Since the population was small and reachable, census sampling was used. Data were collected with a structured 15-item Experimentation/Innovation and Consumer Awareness Questionnaire (EICAQ). Mean and standard deviation were used to answer the research questions, while simple linear regression tested the hypotheses at the 0.05 level of significance. Findings showed that experimentation and innovation significantly influenced effective teaching and learning of Home Economics. Consumer awareness also significantly influenced learning by strengthening food-choice literacy, consumer-rights knowledge, product evaluation and responsible decision-making. The study concludes that Home Economics instruction becomes more meaningful when practical experimentation, creativity, consumer education and real-life problem-solving are deliberately integrated into teaching. It recommends improved laboratory resources, routine practical demonstrations, innovation-based assignments, consumer-awareness campaigns and stronger institutional support for practical Home Economics pedagogy.

KEYWORDS

Experimentation;
innovation;
consumer awareness;
Home Economics Education;
teaching and learning;
practical pedagogy;
University of Calabar;
consumer education

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Introduction

Home Economics Education is a practical, life-oriented and socially responsive field of study that equips learners with the knowledge, skills, values and competencies required for personal development, family welfare, consumer decision-making, entrepreneurship and community improvement. Its relevance lies not only in the transmission of academic knowledge but also in the capacity of learners to translate classroom instruction into responsible food choices, effective household management, functional clothing and textile decisions, child and family care, product evaluation, resource conservation and income-generating skills. As a vocational and applied discipline, Home Economics is expected to prepare students for real-life responsibilities within the home, school, marketplace and wider society. This makes the discipline different from fields that can be taught largely through theoretical exposition, because its effectiveness depends strongly on practical engagement, experimentation, creativity, innovation and informed consumer behaviour. The contemporary importance of Home Economics has increased because students now learn in a society shaped by rapid changes in consumer markets, food systems, technology, household needs, environmental concerns and

employment expectations. Modern consumers are confronted with competing brands, changing prices, food safety issues, advertising claims, digital marketplaces, environmental risks and the growing demand for sustainable lifestyles. At the same time, graduates of Home Economics Education are expected to function as teachers, entrepreneurs, consumer educators, household-resource managers, community development actors and advocates of sustainable living. These responsibilities require more than memorisation of concepts. They require the ability to observe problems, test ideas, compare alternatives, interpret product information, make evidence-based decisions and communicate practical solutions. Therefore, the teaching and learning of Home Economics must deliberately integrate experimentation, innovation and consumer awareness into classroom and laboratory activities.

In Cross River State, the relevance of a practical and consumer-oriented Home Economics curriculum is reinforced by the socio-economic realities of households, communities and local development systems. Evidence from related studies shows that livelihood systems, participatory risk management, hospitality activities, tourism enterprises, cultural festivals and community resources continue to shape economic participation, consumer behaviour and community wellbeing in the state (Ajake et al., 2022; Akeh et al., 2023; Eneyo, 2025a, 2025b; Eneyo et al., 2023; Eneyo & Essien, 2023; Obong et al., 2012). These local realities suggest that Home Economics Education should not be disconnected from the everyday experiences of learners and communities. Rather, it should equip students with practical skills that can support household welfare, entrepreneurship, sustainable consumption and community development. Experimentation is central to effective teaching and learning because it helps students move from theoretical understanding to practical competence. When learners engage in experiments, demonstrations and practical projects, they do not merely receive information; they test assumptions, observe results, make corrections, draw conclusions and improve performance. In Home Economics, experimentation may include recipe modification, food preservation trials, textile testing, comparison of household products, analysis of consumer labels, evaluation of cooking methods, development of low-cost household technologies and design of entrepreneurial products. These activities help students to understand why a particular method works, how resources can be used efficiently and how knowledge can be adapted to real-life contexts. Experimentation therefore strengthens learning by making students active participants in the construction and application of knowledge.

Innovation complements experimentation by encouraging learners to create, improve and adapt. While experimentation enables students to test and verify, innovation enables them to use the evidence obtained to develop better ways of doing things. Innovation in Home Economics may be reflected in new teaching methods, locally sourced instructional materials, redesigned practical assignments, product development, sustainable household practices and creative approaches to consumer education. A Home Economics classroom that promotes innovation is one in which students are encouraged to think critically, solve problems, ask questions and design practical responses to household and consumer challenges. This orientation is consistent with current discussions on experiential learning environments in higher education, which emphasize that practical engagement strengthens outcomes such as critical thinking, communication, self-regulation and problem-solving (Duchatelet et al., 2024).

Consumer awareness is equally important because Home Economics deals directly with everyday consumption. Consumers are constantly exposed to product claims, changing prices, food-safety concerns, advertising messages, sustainability issues and digital buying platforms. Students who lack consumer awareness may find it difficult to evaluate product quality, understand labels, identify consumer rights, avoid unsafe goods, make proper food choices or promote responsible consumption. Conversely, students who are consumer-aware can make informed choices and also educate families and communities. Recent studies on consumer behaviour show that awareness, access to information and education influence responsible consumption decisions (Mishra et al., 2023; Teufer & Grabner-Kräuter, 2023; Trudel, 2019; Zhang et al., 2023). For Home Economics students, consumer awareness is not simply a topic to be memorised; it is a

practical competence that connects classroom instruction to household welfare, market participation and community health.

Consumer literacy also has direct implications for family wellbeing, child upbringing and food-intake decisions, especially in contexts where socio-demographic conditions influence household nutrition and health behaviour. Studies in Calabar have shown that family socio-demographic variables and caregivers' practices can have important implications for child upbringing, food intake and health outcomes (Udonwa et al., 2022a, 2022b). This means that Home Economics students require strong consumer-awareness training not only for their personal benefit but also for the wider social responsibility they will assume as teachers, parents, entrepreneurs, community educators and development agents. A learner who understands food quality, product safety, household budgeting, nutrition and consumer rights is better prepared to contribute meaningfully to family and community wellbeing.

Despite the importance of experimentation, innovation and consumer awareness, Home Economics instruction in Nigerian higher education still faces persistent challenges that weaken the relationship between knowledge and practice. These challenges include inadequate laboratory facilities, limited consumable materials, insufficient practical exposure, weak funding, overcrowded learning environments and teaching methods that are sometimes more theoretical than skill-based. Studies in Home Economics and related practical disciplines have reported that inadequate laboratories and poor utilization of instructional facilities limit students' participation in practical work and reduce the quality of skills acquisition (Adebisi et al., 2017; Azonuche, 2020; Ogbonnaya et al., 2022; Piate et al., 2023). This is a serious concern because Home Economics cannot produce practically competent graduates where learners have minimal opportunities to handle materials, test procedures, use equipment, develop products and evaluate practical outcomes.

The University of Calabar provides an important context for this study because Home Economics Education within the institution is expected to prepare students for teaching, entrepreneurship and responsible social participation. However, as in many Nigerian universities, the quality of practical learning depends on the availability of resources, the creativity of instructors, the design of learning activities and the ability of students to connect consumer education with real-life practice. The central concern is therefore not whether Home Economics is relevant, but whether the methods used in teaching it are strong enough to develop competent, innovative and consumer-aware graduates. This institutional context is also important because Home Economics graduates are expected to contribute to Cross River State's wider social economy, where higher education, tourism, cultural festivals, hospitality livelihoods and sustainable community-resource management remain important development concerns (Akeh et al., 2023; Eneyo, 2025a, 2025b; Eneyo et al., 2023; Eneyo & Essien, 2023; Obong et al., 2012).

Effective teaching and learning of Home Economics require an environment where students can engage with materials, test methods, compare outcomes, use laboratory equipment, develop products, analyse consumer information and apply knowledge to real household and community needs. However, the teaching of Home Economics is often constrained by inadequate facilities, insufficient consumable resources, limited use of experiments and weak integration of consumer-awareness activities. When these constraints exist, learners may acquire theoretical knowledge without the practical competence needed for entrepreneurship, teaching practice, family-resource management and consumer protection. Such a situation may produce graduates who know the content of Home Economics but are not sufficiently prepared to apply it in real-life settings.

The problem becomes more critical when Home Economics graduates are expected to teach others, promote household welfare and contribute to sustainable consumption. If students are not adequately exposed to experimentation and innovation, they may lack confidence in practical demonstrations, product development and problem-solving. If they are not sufficiently grounded in consumer awareness, they may be unable to interpret product labels, evaluate quality, explain consumer rights or guide households in making safe and responsible choices. This gap between knowledge and application undermines the practical mission of Home

Economics Education and reduces the ability of graduates to respond effectively to contemporary household, consumer and community challenges.

Although previous studies have examined laboratory facilities, practical teaching and consumer behaviour in different contexts, there is still limited empirical attention to the combined role of experimentation, innovation and consumer awareness in strengthening effective teaching and learning of Home Economics in the University of Calabar. This gap makes it necessary to investigate how these variables contribute to students' learning experience and how they can be better integrated into Home Economics pedagogy. Addressing this concern is important because the discipline is expected to produce graduates who are not only knowledgeable but also creative, practical, consumer-aware and capable of solving real-life problems.

This study therefore examined experimentation, innovation and consumer awareness as determinants of effective teaching and learning of Home Economics in the University of Calabar, Nigeria. The study is significant because it addresses the need to strengthen practical pedagogy and consumer education in a discipline that directly influences daily living, family welfare, household economy and community development. Specifically, the study sought to ascertain the influence of experimentation and innovation on the teaching and learning of Home Economics in the University of Calabar and to assess the influence of consumer awareness on the teaching and learning of Home Economics in the University of Calabar.

The study was guided by the following research questions: What influence do experimentation and innovation have on the teaching and learning of Home Economics in the University of Calabar? How does consumer awareness influence the teaching and learning of Home Economics in the University of Calabar? Correspondingly, the following null hypotheses were formulated and tested at the 0.05 level of significance: experimentation and innovation have no significant influence on the teaching and learning of Home Economics in the University of Calabar; and consumer awareness has no significant influence on the teaching and learning of Home Economics in the University of Calabar.

Literature review

Home Economics Education as a practical and life-skill discipline

Home Economics Education is built on the principle that learning should improve the quality of life of individuals, families and communities. The subject brings together food and nutrition, clothing and textiles, family living, consumer education, household management, entrepreneurship and resource conservation. Its interdisciplinary character makes it particularly important in a developing society where households face challenges of food security, rising cost of living, unemployment, unsafe consumer products, waste generation and changing family needs. A strong Home Economics programme therefore contributes not only to school learning but also to national development through skill acquisition, consumer responsibility and sustainable household practices. This life-improvement orientation aligns with local studies showing that family structure, caregiving variables and household conditions influence child upbringing, feeding practices and health outcomes in Calabar (Udonwa et al., 2022; Udonwa et al., 2022).

The life-skill orientation of Home Economics means that its teaching must be practical. Students need to learn how to plan meals, preserve food, compare product quality, sew or repair fabrics, manage household resources, interpret labels, budget wisely, reduce waste and communicate useful knowledge to families and communities. These skills cannot be fully developed through lecture methods alone. They require demonstration, practice, feedback, reflection and repeated exposure to real or simulated household situations. Azonuche (2020) argues that Home Economics education in tertiary institutions can be revitalized through improved practical exposure, ICT use and skills acquisition for global relevance. This position reinforces the need for teaching methods that are not only content-driven but also skills-oriented.

In the Nigerian context, the practical strength of Home Economics has often been weakened by facility-related and pedagogical challenges. Practical subjects require laboratories, equipment, consumables and trained instructors who can manage demonstration-based learning. Where these are absent or poorly utilized, students may complete their programmes without adequate confidence in practical tasks. Ogbonnaya et al. (2022) reported that the utilization of Home Economics laboratories is important to teaching effectiveness and

recommended adequate provision of tools and in-service training for teachers. Similarly, Piate et al. (2023) focused on laboratory equipment for teaching Food and Nutrition in Nigerian universities, showing the continuing relevance of material resources to practical instruction.

Experimentation as a driver of active learning

Experimentation refers to the deliberate process of testing ideas, procedures or interventions in order to observe outcomes and draw evidence-based conclusions. In education, experimentation is valuable because it allows learners to engage in inquiry, observation and reflection. Instead of accepting knowledge passively, students participate in the production of understanding. Rockoff et al. (2011) and Sadoff (2018) emphasize the importance of experimentation in education policy and programme evaluation because well-designed experiments can help educators identify what works and how learning outcomes can be improved. Although these discussions often focus on policy-level experimentation, the same principle is applicable to classroom practice.

In Home Economics, experimentation is not restricted to laboratory research. It includes the practical activities through which learners test and improve their understanding. For example, students may compare the texture of food products prepared under different heat conditions, test the effect of storage methods on food quality, evaluate the absorbency of fabrics, compare detergent effectiveness, assess the nutritional value of meal plans or investigate consumer reactions to product packaging. Through these activities, students learn to ask questions, collect evidence, interpret results and make informed decisions. This process develops scientific thinking, practical judgement and confidence.

Experimentation also supports permanence of learning. Concepts that students practise and observe tend to be remembered better than concepts they only hear about. A learner who has personally tested why certain cooking methods preserve nutrients is more likely to retain and apply that knowledge than one who only reads the theory. In the same way, a student who has compared product labels in a market-based assignment is more likely to understand consumer protection than one who only memorizes definitions. This makes experimentation a powerful bridge between theory and practice.

The value of experimentation becomes even stronger when it is organized around real-life problems. Home Economics students should not only perform isolated practical tasks; they should also solve practical problems. For instance, they can be asked to design a low-cost nutritious meal for a household with limited income, compare fabric choices for a specific climate, develop an awareness campaign on fake products, or prepare a waste-reduction plan for a student hostel. Such tasks require students to connect knowledge from different areas and apply it creatively. They also reflect the realities that Home Economics graduates are likely to face as educators, entrepreneurs and community resource persons.

Innovation and creativity in Home Economics pedagogy

Innovation in teaching involves the use of new or improved methods, materials, technologies and learning activities to achieve better educational outcomes. It is closely related to experimentation because innovation often begins with testing alternatives and improving existing practice. In Home Economics Education, innovation may involve the use of locally available materials for demonstrations, digital tools for meal planning, project-based assignments, entrepreneurship simulations, peer teaching, community-based learning, product development, or integrated practical tasks that combine food, textile, consumer and family-life content.

Innovation is especially important because the society in which students live is changing rapidly. Students encounter new food products, online markets, digital advertising, fashion trends, sustainability debates and household technologies. A Home Economics curriculum that remains static may not adequately prepare learners for these realities. Innovative teaching allows instructors to update learning experiences and make them relevant to contemporary life. Zhu (2023) notes that the cultivation of innovation and practical skills in vocational education requires a closer connection between curriculum content and real industry or life situations. This insight is relevant to Home Economics because the subject aims to produce graduates who can apply knowledge in practical contexts.

Innovation also encourages student ownership of learning. When students are given opportunities to design products, evaluate market needs, improve household practices or present solutions, they become active participants rather than passive recipients. This can increase motivation and confidence. In practical disciplines, confidence is important because students may understand concepts but hesitate to perform tasks

independently. Innovation-based teaching reduces this gap by creating a learning environment in which trial, error, correction and improvement are accepted as part of learning.

However, innovation cannot thrive without institutional support. Teachers need time, materials, professional development and supportive leadership. Students need access to laboratories, learning resources and practical assignments. Where institutions treat practical learning as secondary to theoretical instruction, innovation becomes difficult. Therefore, promoting innovation in Home Economics requires both pedagogical commitment and administrative support.

Consumer awareness as a learning outcome and social competence

Consumer awareness refers to the knowledge and understanding that enable individuals to make informed choices in the marketplace. It includes awareness of product quality, pricing, labels, safety, consumer rights, environmental impact, ethical production, advertising influence and channels for complaint or redress. In Home Economics, consumer awareness is not merely a topic within the curriculum; it is a social competence that helps learners protect themselves and others from unsafe or irresponsible consumption. It also supports household welfare because many family decisions involve food, clothing, health, budgeting and product selection.

Current consumer studies show that awareness is important in shaping consumption behaviour. Trudel (2019) explains that sustainable consumer behaviour is influenced by psychological and informational factors. Zhang et al. (2023) show that sustainable fashion consumption among young consumers is linked to knowledge, values and product-related information. Mishra et al. (2023) provide survey data on consumer awareness in sustainable apparel consumption, while Teufer and Grabner-Kräuter (2023) highlight the role of consumer networks in supporting mindful consumption and well-being. These studies suggest that consumers are more likely to act responsibly when they understand the consequences of their choices and have access to reliable information.

For Home Economics students, consumer awareness has both personal and professional value. Personally, it enables them to make better decisions about food, clothing, household products and family resources. Professionally, it prepares them to teach consumer education, guide households, support community awareness and promote responsible consumption. A student who understands consumer rights can educate others about safe products and complaint procedures. A student who understands food labels can guide households on nutrition and health. A student who understands sustainable consumption can promote waste reduction, quality purchasing and responsible use of resources. Professionally, such competence is also relevant to service, tourism, cultural-festival and hospitality-related livelihoods because consumer confidence, safety consciousness and informed purchasing affect local economic participation and poverty-reduction opportunities (Akeh et al., 2023; Eneyo, 2025a, 2025b; Eneyo et al., 2023; Eneyo & Essien, 2023).

Consumer awareness also strengthens classroom learning because it connects Home Economics to real market experiences. Students can be asked to visit markets, compare prices, evaluate product labels, identify misleading claims or analyse consumer behaviour. Such activities make learning more practical and socially relevant. They also help students understand that Home Economics is not only about domestic tasks but also about informed citizenship, economic decision-making and community welfare.

Linking experimentation, innovation, consumer awareness and teaching effectiveness

Effective teaching and learning occur when students understand content, develop skills, apply knowledge and demonstrate improved competence. Experimentation, innovation and consumer awareness contribute to these outcomes in complementary ways. Experimentation provides the process of testing and learning by doing. Innovation encourages creativity and improvement. Consumer awareness gives social and practical meaning to what is learned. Together, these variables support active learning, critical thinking, decision-making and problem-solving in Home Economics.

The relationship among these variables can be understood through an experiential learning perspective. Experiential learning emphasizes concrete experience, reflection, conceptual understanding and active experimentation. When Home Economics students participate in practical tasks, reflect on outcomes, connect the experience to theory and apply the knowledge to new situations, learning becomes deeper. Duchatelet et al. (2024) show that experiential learning environments in higher education can support generic outcomes such as

communication, self-regulation and critical thinking. These outcomes are relevant to Home Economics because students must communicate instructions, regulate practical tasks, solve problems and make decisions.

A professional Home Economics programme should therefore integrate experimentation and consumer awareness across teaching activities. For instance, a lesson on food preservation should not end with definitions. Students can test preservation methods, compare shelf life, evaluate cost, discuss health implications and design consumer education messages. A lesson on textile selection can include fabric testing, market survey, cost comparison and sustainability discussion. A lesson on household budgeting can include consumer rights, advertising influence, price comparison and digital purchasing safety. This integrated approach makes learning more holistic and prepares students for real-life application.

Empirical review

Empirical studies provide support for the importance of practical resources and innovative pedagogy in Home Economics and related fields. Adebisi et al. (2017) examined laboratory resources and practical involvement in basic science and showed that practical resources influence the quality of learning. Although the study was not limited to Home Economics, its findings are relevant because Home Economics requires similar material support for effective demonstration and experimentation. Clifford and Nwanya (2022) also emphasized the relevance of laboratory management skills to teachers' effectiveness, while Etiubon and Udoh (2020) showed that the availability and utilization of laboratory facilities are important to the teaching of practical science-related content.

Within Home Economics, Azonuche (2020) found that ICT use can revitalize Home Economics education in tertiary institutions by supporting skill acquisition and global relevance. The study identified practical challenges, including insufficient personnel and excessive reliance on theory. Ogbonnaya et al. (2022) investigated the utilization of Home Economics laboratories and recommended the provision of tools, equipment and training for teachers. Piate et al. (2023) examined laboratory equipment for teaching Food and Nutrition in Nigerian universities and reinforced the importance of availability and utilization of resources. These studies collectively show that practical competence depends on a supportive learning environment.

Studies on consumer awareness and sustainable consumption also support the need for consumer education in Home Economics. Sari and Mahardhika (2020) showed that consumers' awareness of corporate social responsibility is shaped by perceived activities and exposed performance. Sardianou et al. (2017) examined consumer awareness towards environmental management. Mishra et al. (2023), Liu et al. (2023), Teufer and Grabner-Kräuter (2023), Trudel (2019), and Zhang et al. (2023) provide broader evidence that awareness, information and consumer networks influence responsible consumption. These findings strengthen the argument that Home Economics should integrate consumer education into teaching and learning activities.

Despite these contributions, the literature still shows a gap. Many studies treat practical resources, innovation and consumer awareness separately. Few studies examine how experimentation/innovation and consumer awareness function as determinants of effective teaching and learning in a specific Home Economics programme. This study addresses that gap by focusing on Home Economics students in the University of Calabar.

Methodology

Research design

The study adopted a descriptive survey research design. This design was considered appropriate because the study sought to obtain quantitative information from Home Economics students on their perceptions of experimentation, innovation, consumer awareness and effective teaching and learning. A survey design allows the researcher to collect data from respondents in a natural academic setting without manipulating the variables. It is also suitable where the purpose is to describe existing conditions, examine relationships among variables and use statistical procedures to test hypotheses.

Study area

The study was conducted in the Department of Home Economics Education, University of Calabar, Calabar, Nigeria. The University of Calabar is a federal university located in Cross River State. The institution provides programmes in education, sciences, social sciences, management, environmental studies and vocational disciplines. Home Economics Education within the university is expected to prepare students for

teaching, entrepreneurship, family-resource management and consumer education. This context made the department suitable for a study that examines practical pedagogy and consumer awareness.

Population and sampling technique

The population of the study comprised forty Home Economics students in the University of Calabar. Since the accessible population was small, the census sampling technique was adopted. This means that all available members of the population were included in the study. The use of census sampling was appropriate because it reduced sampling error and allowed the researcher to capture the views of the entire accessible group. It also ensured that the study reflected the experience of students directly involved in the programme.

Instrument for data collection

Data were collected using a structured questionnaire titled Experimentation/Innovation and Consumer Awareness Questionnaire (EICAQ). The questionnaire contained 15 items designed to measure students' perceptions of experimentation and innovation, consumer-awareness learning and effective teaching and learning of Home Economics. The items were structured on a four-point response scale. The scale allowed respondents to indicate the extent to which they agreed with statements relating to the variables under investigation.

The experimentation and innovation section covered issues such as permanence of learning, acquisition of practical skills, specialized instruction, documentary evidence of learning outcomes, creativity and innovation. The consumer-awareness section covered awareness of where to purchase quality products, translation of education into consumer action, consumer rights, consumer knowledge and proper food choices. The teaching-learning effectiveness construct reflected the perceived contribution of these variables to better Home Economics learning outcomes.

Validity, reliability and ethical considerations

The content validity of the instrument was established through expert review in Home Economics Education and educational measurement. The experts examined the relevance, clarity and coverage of the items. Their observations were used to improve the instrument before administration. Although the study was based on a small population, attention was given to ensuring that the instrument aligned with the research objectives, research questions and hypotheses.

Ethical considerations were observed during the study. Respondents were informed that participation was voluntary and that their responses would be used strictly for academic purposes. They were not required to provide names on the questionnaire. Confidentiality and anonymity were assured. The researcher also ensured that the data were reported in aggregate form without identifying individual respondents.

Method of data analysis

The data collected were analysed using descriptive and inferential statistics. Mean and standard deviation were used to answer the research questions. A decision mean of 2.50 was used as the benchmark for agreement because the questionnaire was structured on a four-point scale. Items with mean scores of 2.50 and above were interpreted as agreed or used, while items below 2.50 were interpreted as not agreed or not used. Simple linear regression was used to test the hypotheses at the 0.05 level of significance. The regression analysis helped determine the influence of experimentation/innovation and consumer awareness on effective teaching and learning of Home Economics.

Results and discussion

Influence of experimentation and innovation on teaching and learning

Research question one sought to determine the influence of experimentation and innovation on the teaching and learning of Home Economics in the University of Calabar. The result is presented in Table 1.

Table 1. Mean and standard deviation of experimentation/innovation on teaching and learning of Home Economics (*N* = 40).

S/N	Experimentation/innovation item	Mean	SD	Remark
1	Supports permanence of learning	2.52	1.53	Agreed
2	Helps students acquire practical skills	3.15	1.59	Agreed
3	Supports specialized instruction	3.10	1.61	Agreed

4	Provides documentary evidence of learning outcomes	3.01	1.57	Agreed
5	Encourages creativity and innovation	3.49	1.54	Agreed

Source: Author's fieldwork, 2026. Key: SD = Standard deviation.

Table 1 shows that all the experimentation and innovation items recorded mean scores above the 2.50 decision benchmark. The highest mean score was recorded for creativity and innovation ($M = 3.49$), followed by helping students to acquire practical skills ($M = 3.15$) and supporting specialized instruction ($M = 3.10$). The lowest mean score was recorded for support for permanence of learning ($M = 2.52$), but it was still above the decision benchmark. The result implies that students perceived experimentation and innovation as relevant to effective teaching and learning of Home Economics. The standard deviation values suggest that respondents were relatively consistent in their views.

The result is educationally important because the items capture different dimensions of practical learning. Creativity and innovation recorded the highest mean, indicating that students see practical experimentation as a means of developing originality and problem-solving ability. Practical skill acquisition also recorded a high mean, showing that students recognize the role of experimentation in transforming theoretical knowledge into usable competence. In a discipline such as Home Economics, these outcomes are central because students are expected to demonstrate performance in food preparation, textile work, household management, consumer decision-making and instructional practice.

Influence of consumer awareness on teaching and learning

Research question two examined the influence of consumer awareness on the teaching and learning of Home Economics in the University of Calabar. The result is presented in Table 2.

Table 2. Mean and standard deviation of consumer awareness on teaching and learning of Home Economics (N = 40).

S/N	Consumer awareness item	Mean	SD	Remark
1	Consumers become aware of where to purchase quality products	3.11	1.53	Used
2	Education is translated into effective consumer action	3.15	1.59	Used
3	Consumers become aware of their rights	3.10	1.61	Used
4	Consumers acquire relevant consumer knowledge	3.05	1.57	Used
5	Consumers become aware of how to make proper food choices	3.49	1.55	Used

Source: Author's fieldwork, 2026. Key: SD = Standard deviation.

Table 2 shows that all consumer-awareness items recorded mean scores above the 2.50 decision benchmark. Awareness of proper food choices recorded the highest mean score ($M = 3.49$). This was followed by translation of education into effective consumer action ($M = 3.15$), awareness of where to purchase quality products ($M = 3.11$), awareness of consumer rights ($M = 3.10$) and acquisition of relevant consumer knowledge ($M = 3.05$). The result indicates that consumer awareness is an important learning dimension in Home Economics. It also suggests that students understand the connection between consumer education and daily living.

The prominence of proper food choices is particularly significant. Food choice is one of the most practical areas of Home Economics because it affects health, household expenditure, nutrition and family welfare. When students understand how to make proper food choices, they are better prepared to educate households, guide learners and make responsible personal decisions. Consumer rights and product knowledge are also important because markets increasingly contain many competing products, some of which may be misleading, unsafe or of poor quality. Home Economics students need the competence to evaluate such products and communicate accurate information.

Test of hypotheses

The two hypotheses were tested using simple linear regression at the 0.05 level of significance. The summarized results are presented in Tables 3 and 4.

Table 3. Regression summary for the influence of experimentation/innovation on teaching and learning of Home Economics.

Predictor	R	R ²	Adjusted R ²	B	Std. Error	F-value	Sig.	Decision
Experimentation/innovation	.401	.161	.156	.464	.080	33.501	.000	Rejected Ho

Dependent variable: Teaching and learning of Home Economics.

Table 3 shows that experimentation and innovation had a significant influence on effective teaching and learning of Home Economics. The reported regression result showed $R = .401$ and $R^2 = .161$, indicating that

experimentation and innovation explained 16.1% of the variation in teaching and learning. The F-value of 33.501 with a significance value of .000 indicates statistical significance. Therefore, the null hypothesis was rejected. The result implies that improvement in experimentation and innovation is associated with improvement in effective teaching and learning of Home Economics.

Table 4. Regression summary for the influence of consumer awareness on teaching and learning of Home Economics.

Predictor	R	R ²	Adjusted R ²	B	Std. Error	F-value	Sig.	Decision
Consumer awareness	.420	.177	.172	.405	.066	36.576	.000	Rejected Ho

Dependent variable: Teaching and learning of Home Economics.

Table 4 shows that consumer awareness also had a significant influence on effective teaching and learning of Home Economics. The reported regression result showed $R = .420$ and $R^2 = .177$, indicating that consumer awareness explained 17.7% of the variation in teaching and learning. The F-value of 36.576 with a significance value of .000 indicates statistical significance. The null hypothesis was therefore rejected. This implies that higher levels of consumer awareness are associated with improved teaching and learning outcomes in Home Economics.

Discussion of findings

The first finding showed that experimentation and innovation significantly influenced effective teaching and learning of Home Economics. This finding is consistent with the practical nature of the discipline. Home Economics requires students to demonstrate knowledge through performance, creativity and problem-solving. Experimentation enables students to test methods, observe outcomes and develop evidence-based judgement. Innovation helps them improve products, adapt methods and respond to real household and consumer needs. The finding also supports Sadoff (2018), who emphasized that experimentation can inform educational improvement and decision-making. In the classroom, experimentation allows the teacher to identify methods that improve students' understanding and practical competence.

The finding is also supported by studies on practical resources and laboratory utilization. Adebisi et al. (2017), Clifford and Nwanya (2022), Etiubon and Udoh (2020), Ogbonnaya et al. (2022), and Piate et al. (2023) all point to the importance of laboratory resources, practical involvement and instructional facilities in improving learning. The implication is that experimentation and innovation cannot be separated from the learning environment. Students may value experimentation, but their ability to benefit from it depends on the availability of equipment, consumables, time and teacher competence. Therefore, practical learning must be planned, funded and monitored.

The second finding showed that consumer awareness significantly influenced effective teaching and learning of Home Economics. This finding is logical because consumer education is one of the major pillars of Home Economics. A student who understands product information, food choices, consumer rights and responsible purchasing is more capable of applying Home Economics knowledge in daily life. The finding is consistent with consumer-behaviour literature which shows that awareness, information and education influence responsible consumption (Mishra et al., 2023; Sari & Mahardhika, 2020; Teufer & Grabner-Kräuter, 2023; Trudel, 2019; Zhang et al., 2023).

Consumer awareness also strengthens the social relevance of Home Economics. The discipline is expected to contribute to household welfare and community development. When students learn consumer awareness only as theory, its impact may be limited. However, when it is taught through market surveys, product comparison, label interpretation, food-safety analysis and consumer-rights campaigns, it becomes practical and transformative. Students can then become educators of families and communities. This is important in a society where consumers may be exposed to unsafe products, misleading advertisements, poor nutrition information and unsustainable consumption habits. This social relevance extends to sustainable livelihoods and household welfare, since responsible consumption, family-resource management, participatory risk awareness and community-based development are closely connected in Cross River State contexts (Ajake et al., 2022; Obong et al., 2012; Udonwa, Eneyo, Asuquo, & Itu, 2022; Udonwa, Eneyo, & Asuquo, 2022).

The combined implication of the two findings is that Home Economics teaching should be redesigned as active, practical and consumer-responsive learning. Experimentation and innovation make learning participatory, while consumer awareness makes it socially useful. A strong Home Economics classroom should therefore move from isolated theoretical instruction to integrated learning tasks that require students to

test, create, evaluate and educate. This approach can strengthen learning outcomes and also make the discipline more attractive to students who seek practical relevance.

Educational implications

The findings have important implications for Home Economics Education in the University of Calabar and similar institutions. First, they imply that practical learning should be treated as a core requirement rather than an occasional activity. Since experimentation and innovation significantly influence teaching and learning, practical demonstrations, laboratory work and project-based assignments should be embedded into course delivery. Students should not wait until teaching practice or final-year projects before engaging in meaningful practical tasks. Every relevant course should include opportunities for observation, testing, application and reflection.

Second, the findings imply that laboratory resources are essential to quality Home Economics education. A laboratory is not merely a physical space; it is a learning environment where students translate concepts into competence. The university should therefore provide and maintain functional laboratories, equipment and consumables. Departments should also develop clear schedules for practical activities to ensure that resources are used regularly and fairly. Where modern equipment is expensive, locally sourced materials and low-cost innovations can be used to support learning without compromising quality.

Third, consumer awareness should be integrated across Home Economics courses rather than treated as a separate topic. Food and Nutrition courses can include label reading, food safety and cost comparison. Clothing and Textiles courses can include sustainable fashion, fabric quality and consumer rights. Family Resource Management can include budgeting, digital purchasing, product warranties and responsible consumption. This integration will help students see consumer awareness as a life skill and professional competence.

Fourth, the findings imply the need for continuous professional development for Home Economics lecturers and instructors. Teachers need skills in designing experiments, guiding practical learning, assessing performance and integrating consumer education into classroom activities. Professional development workshops can help lecturers update their methods and respond to contemporary market and household realities. Such training should include digital pedagogy, project-based learning, low-cost material development and assessment of practical competence.

Conclusion

The study concluded that experimentation, innovation and consumer awareness are significant determinants of effective teaching and learning of Home Economics in the University of Calabar. Experimentation and innovation support practical skill development, creativity, evidence-based learning, student engagement and problem-solving. Consumer awareness strengthens informed decision-making, food-choice literacy, consumer-rights knowledge, product evaluation and responsible consumption. The findings demonstrate that Home Economics instruction becomes more meaningful when practical experimentation is connected with consumer education and real-life application.

The study further concluded that the future of Home Economics Education depends on the ability of institutions to make teaching more practical, creative and socially relevant. Learners should not only understand theories; they should be able to apply them in homes, schools, markets and communities. When students are exposed to experimentation and consumer awareness, they become better prepared for teaching, entrepreneurship, family welfare promotion and community education. Therefore, Home Economics programmes should be strengthened through better facilities, innovative pedagogy, market-linked learning and sustained consumer-awareness activities. This conclusion is consistent with the wider view that higher education should not remain detached from local livelihood systems, tourism opportunities, household welfare and community development needs (Eneyo, 2025b).

Recommendations

1. **Strengthen practical experimentation:** The Department of Home Economics Education should increase the use of demonstrations, laboratory activities, product testing, recipe modification, textile activities and project-based learning. Practical activities should be planned as part of normal teaching rather than treated as optional exercises.

2. **Improve laboratory resources:** The university should provide functional Home Economics laboratories, basic equipment, consumable materials and maintenance support. Where resources are limited, lecturers should be encouraged to develop low-cost instructional materials from locally available resources.
3. **Integrate consumer education across the curriculum:** Consumer awareness should be deliberately incorporated into Food and Nutrition, Clothing and Textiles, Family Resource Management, Entrepreneurship and related courses. Students should learn food labelling, consumer rights, budgeting, product quality, sustainable consumption and responsible purchasing.
4. **Promote innovation-based assignments:** Students should be encouraged to design household products, develop low-cost technologies, evaluate market products, solve consumer problems and present creative solutions to real family and community needs.
5. **Organize consumer-awareness campaigns:** The department should organize seminars, market-based learning activities, exhibitions and community outreach programmes that educate students and the public on food choices, product information, consumer rights and sustainable consumption.
6. **Train lecturers in practical pedagogy:** Regular professional development should be provided for Home Economics lecturers and instructors on experiential learning, laboratory management, digital pedagogy, product development and assessment of practical competence.
7. **Build university-community partnerships:** The department should collaborate with markets, consumer protection agencies, food producers, fashion entrepreneurs and community organizations to expose students to real consumer issues and practical learning opportunities. Such partnerships should also expose students to participatory community planning, local risk-awareness practices and livelihood-development initiatives so that learning remains connected to the realities of Cross River communities (Ajake et al., 2022; Eneyo, 2025a, 2025b).

Limitations and suggestions for further studies

The study was limited to Home Economics students in the University of Calabar and used a relatively small accessible population. Although the census technique allowed all available respondents to participate, the findings should be interpreted within the context of the study setting. The study also relied on questionnaire responses, which may reflect students' perceptions rather than direct observation of classroom practice. Further studies should use larger samples across multiple universities and combine questionnaire data with classroom observation, interviews and practical performance assessment. Future researchers may also examine how digital tools, entrepreneurship education and sustainability-focused projects influence teaching and learning in Home Economics.

Declarations

Ethics approval and consent to participate: Participation in the study was voluntary, and respondents were informed that their responses would be used strictly for academic purposes.

Consent for publication: The author gives consent for publication of the manuscript.

Availability of data and materials: Data supporting the findings of the study are available from the corresponding author on reasonable request.

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