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Perceived Availability And Utilization Of Instructional Materials And Students' Academic Performance In Secondary Schools Home Economics Students In Calabar Municipality Of Cross River State, Nigeria

OBI OLOR PATIENCE

Department Of Home Economics
Cross River College Of Education, Akamkpa – Nigeria

ASU-NANDI JUDITH M.

Department Of Home Economics
Cross River College Of Education, Akamkpa – Nigeria

And

ISHIEKWEN BRIDGET USHANG

Department Of Home Economics
Cross River College Of Education, Akamkpa – Nigeria

ABSTRACT

The main purpose of this study was to investigate how perceived availability and utilization of instructional materials relate to students' academic performance in secondary school Home Economics in Calabar municipality of Cross River State, Nigeria. Specifically, the sub-sets of the research independent variable (instructional materials) include audio, audio-visual, and visual; the dependent variable (students' academic performance) was the Home Economic Achievement test. To realize the purpose of the study, six research questions and four hypotheses were postulated to guide the study. A related literature review was done in line with the study variables. The correlational research design was adopted for the study. The study population comprised all public secondary school students in Calabar municipality. However, 249 junior secondary school students were selected as samples for the study through stratified and simple random sampling techniques. Three research instruments namely: instructional materials availability checklist, instructional materials usage checklist, and Home Economics achievement test were utilized for data collection. Data gathered were subjected to statistical analysis using Pearson Product Moment Correlation and Multiple regression analysis. The research questions and hypotheses were subjected to statistical testing at 0.05 alpha levels. The results of the data analysis are: there is a significant relationship between perceived utilization of visual instructional materials and students' academic performance in secondary school Home Economics in Calabar Municipality; there is a significant relationship between perceived utilization of audio-visual

instructional materials and students' academic performance in secondary school Home Economics in Calabar Municipality; there is no significant relationship between perceived utilization of audio instructional materials and students' academic performance in secondary school Home Economics in Calabar Municipality; and perceived utilization of audio, audio-visual and visual instructional materials are significant joint predictors of students' academic performance in secondary school Home Economics in Calabar Municipality. Following the findings of the study, it was concluded that availability and utilization of instructional materials are important variables to boost students' academic performance in secondary school Home Economics and other subjects. It is therefore recommended that education policymakers, the heads of secondary schools, the Home Economic teachers, the students, and the society at large should make sure quality instructional materials are provided for effective teaching/learning, and both teachers and students should have access to quality instructional materials to achieve expected educational goals.

Keywords: Instructional materials, Academic performance, Home Economics

Introduction

The essence of Home Economics education in Nigerian secondary school curriculum was the realization of the relevance of the subject in addressing the skills need of the students and equipping the students with diverse interesting career paths. Home Economics as a subject is currently moving towards issues of national and international importance, such as overpopulation, urban poverty, and the development of emerging nations. Therefore, high academic performance is expected of students in both internal and external examinations. However, most students do not measure up to the expected academic performance level in Home Economics (Ande, 2007; Millicent, 2010). Apart from self-employment and entrepreneurship, learning Home Economics can enable the students to further careers as: nutritionists, dieticians, medical professionals, university lecturers, food technologists, food writers, health practitioners, food product developers, chefs, sports nutritionists (Archibong, Ugbong, & Nsor 2024).

The academic performance of students in Home Economics has been reported to be at an average of 48 percent over the past three years. This performance rate is a little below 50 percent and is adjudged to be poor for a subject concerned with developing needed skills in students for future endeavors. This downward trend in academic performance in Secondary School Home Economics; especially Junior Secondary School level calls for urgent remedies and mechanisms to abate future occurrences. In reducing and improving the academic performance of Home Economics in Secondary Schools in Nigeria in general and Cross River state in particular, many governments and educational stakeholders have invested huge resources in providing

infrastructures as well as employing qualified Home Economics teachers, and developing older Home Economics teachers through staff development programs (Victor Akinyemi, 2018).

In the same vein, teachers have employed different teaching methods acquired during the cluster professional development programs by the State Universal Education Board in teaching Home Economics. Yet still, students' academic performance in Home Economics remains worse as reported by the West African Examination Council (WAEC) chief examiner (WAEC, 2019). It therefore means that much is still left to be done to improve the academic performance of students in Home Economics. Home Economics encompasses many subjects, including human development, personal and family finance, housing and interior design, food science and preparation, nutrition and wellness, textiles and apparel, and consumer issues. This continuous dwindling position of students' academic performance in Secondary School Home Economics despite the laudable efforts of the government and educational stakeholders to curb the ugly situation has left many stakeholders and the entire public worrisome and concerned over the years (Enu. Agyman & Nkum, 2015).

Many scholars and studies have identified the contributing factors to students' poor academic performance most especially in Home Economics to include: inadequate teaching facilities, poor quality textbooks, and inadequate teaching and learning materials (Vundla, 2012; Mbugua, Kibet, Muthaa & Nkonke, 2012; Enu. Agyman & Nkum, 2015). In their study, Lawal and Victor-Akinyemi (2018) report that students taught with instructional aids have good academic performance compared with those taught without any instructional materials. Their study further affirmed that the place of instructional aids in the effective teaching and learning processes and attainment of teaching/learning objectives cannot be overemphasized. Learning any school subject is more understandable to students when a teacher uses instructional materials that catch the attention of the students (Mohammed & Ibrahim, 2019). Home Economics is a multifaceted subject that demands a lot of practical activities and the use of diverse instructional materials. Unfortunately, most of the needed practical equipment and instructional materials are unavailable for teaching and learning the subject. Most time the instructional materials and equipment are not put to use during Home Economic lessons, by extension, the students' academic performance is affected negatively (Mohammed & Ibrahim, 2019 & Archibong, Ugbong & Nsor, 2024).

The requirement for high academic performance of students at any level of education cannot be undermined. Following the importance placed on the academic performance of students by the government, parents, teachers, students and the society at large concerned efforts have been made by individual stakeholders to ensure high academic performance in Junior Secondary School Home Economics both at internal and external examination. For instance, the government, to increase students' academic performance; many in-service training programs have been funded to equip teachers and heads of schools with the necessary skills required to improve their instruction. Parents on their part have paid the proscribed school fees and other charges for their wards. Similarly, students on their part have continually strived hard to participate in academic tasks under the sun and in the rain. Yet, it has been observed with deep dismay that most of the efforts by the parents, government, and students appeared to be relatively ineffective in raising student academic performance levels in Junior Secondary School Home Economics. Despite, the expenditure of billions of naira per year, students generally were not making long-range academic gains. In addition, the reports by examination bodies over the years showed that many students fail Home Economics subject even though it is a necessity for daily living and professional activities (Archibong, Ugbong & Nsor, 2024).

To discover the connection between the independent and dependent variables of this study, the socio-cultural theory of teaching, learning, and development by Lev Vygotsky and stimulus-response learning theory by Edward Lee Thorndike were employed.

Socio-cultural Theory of Teaching, Learning, and Development (Lev Vygotsky)

Socio-cultural theory of teaching, learning, and development by Lev Vygotsky (1896) assumes that human minds do not develop by some predetermined cognitive structures that unfold as one matures. Rather, this theory posits that human minds develop as a result of constant interactions with the social material world. According to Vygotsky, the human mind develops through interaction with materials in the learning process where people learn from each other and use their experiences to successfully make sense of the materials they interact with. These experiences are crystallized in 'cultural tools', and the learners have to master such tools to develop specific knowledge and skills in solving specific problems and, in the process, become competent in a specific profession. In the classroom, these tools can be a picture, a model, or a pattern for solving a problem (Lev Vygotsky, 1896).

Stimulus-response theory (Thorndike, 1913)

Stimulus-response theory was proposed by Edward Thorndike in 1913, who believed that learning boils down to two things: stimulus, and response. In Pavlov's famous experiment, the "stimulus" was food, and the "response" was salivation. He believed that all learning depended on the strength of the relationship between the stimulus and the response. If that relationship was strong, the response was likely to occur when the stimulus was presented. To elicit a specific response to a specific stimulus, you had to strengthen its relationship in one of a few ways. Following the assumption of stimulus-response theory, learning depends on the strength of the relationship between the stimulus (in the form of teaching strategies or materials) and the response (that is learning outcomes or academic performance). By implication, the pairing of a **stimulus**, anything present in the environment that the subject (or learner) can feel through his or her senses, and a **response**, any behavior on the part of the subject, forms the principal mechanism of learning in behaviorist psychology. In other words, if teachers make use of various instructional materials such as visual aids (charts, diagrams, and illustrations), audio-visual aids (video clips, firm strips, television, and overhead projector slides), and audio aids (tape recorder, microphones, photograph, audio discs) these can make complex topics easier to understand and thereby increase students' performance. This theory is therefore relevant to this study in the sense that, it helps to highlight the interconnectivity between the use of instructional materials in teaching-learning situations and students' academic performance. In other words, when schools provide the necessary teaching and learning materials, and teachers also put these materials into use during instruction delivery, students will be able to understand complex concepts and possibly produce desired learning outcomes (Thorndike, 1913).

Visual instructional materials and academic performance

In 2021, Asogwa, Isiwu, and Ugwuoke studied the effects of instructional materials on students' academic achievement in Fishery in senior secondary schools. The study used a quasi-comparative-experimental research design. The study was carried out in Enugu State, Nigeria, precisely in Nsukka Education Zone. The population of the study was 5726, which comprised all the senior secondary II students offering Fishery in Enugu State. The sample size for this study was 161 SS II Fishery students in 4 intact classes drawn from rural and urban senior secondary schools. An instrument titled: Fishery Achievement Test (FAT) was used for data collection.

The instrument was subjected to face and content validation by three experts. The instrument was trial tested on 50 SS II students in a coeducational secondary school (intact class). Kuder-Richardson formula (K-R21) was used to determine the reliability of the test which gave a coefficient of 0.81. Data collected was analyzed using descriptive statistics of mean score to answer the research questions while Analysis of Covariance (ANCOVA) to test the null hypotheses at a .05 level of significance. It was found that instructional materials had an increasing effect on students' achievement in Fishery in secondary schools, instructional materials had a more increasing effect on female than male students' achievement in Fishery in secondary schools and instructional materials had more increasing effect on urban than rural senior secondary schools' students' achievement in Fishery. It was therefore recommended among others that teachers should always make use of instructional materials in Fishery during classroom instructions to enhance the students' achievement in Fishery.

Visual instructional materials are materials that aid learning by appealing to the sense of vision and possibly touch. In simple terms, visual instructional materials support instruction through sight, and students can manipulate them. They comprise flashcards, illustrated books, flannel, specimens, posters, charts, textbooks, real objects, models, chalkboards, images, and so on. They concretize the information to be obtainable and help in making learning practice appear real, active, and vital. They supplement the work of the teacher and help in the research of the textbook (Ghulam, Naqvi Hamad & Nadeem Iqbal, 2015). Visual instructional materials strengthen understanding, motivate, and sustain students' academic achievement, especially abstract processes that one can envision in their mind. For instance, if a student can see a model activity aid or an animation of the abstract process, they will learn more easily than just abstract (Muhammed, 2020).

Perceived utilization of audio-visual instructional materials and academic performance

In the system of education, audio-visual aids are the most prominent tools. According to Webster's Dictionary (2020), audio-visual instructional materials are defined as training or educational materials directed at both the senses of hearing and the sense of sight, films, recordings, photographs, etc. used in classroom instructions, library collections, or the like. They are those devices that are used in classrooms to encourage the teaching

and learning process and make it easier and more interesting. In addition, Audio-visual education is educational instruction using materials that use the senses of sight and hearing to stimulate and enrich learning experiences (Sandbox Networks Inc., 2021).

Okwara, Anyagh, and Ikyaan (2017) investigated the effect of projectors on senior secondary school students' achievement in biology in Benue State, Nigeria. The results indicated that the students taught with projectors achieved significantly better post-test achievement mean scores than their counterparts taught without using projectors. This finding indicated biology could be taught and learned meaningfully through the use of projectors because it is more learner-friendly and exciting. However, there was no significant difference reported in the post-test performance scores of male and female students taught biology using projectors.

Okwelle and Orikoha (2022) adopted a quasi-experimental design to investigate the effect of audio-visual aids on students' academic achievement in mechanical engineering craft practice in technical colleges in Rivers State. Two research questions were posed and two null hypotheses were tested in the study. Through purposive sampling technique, three technical colleges offering Mechanical Engineering Craft Practice out of the four technical colleges in the state were drawn. A multi-choice test instrument tagged "Mechanical Engineering Craft Practice Achievement Test" was used for data collection. Research questions were answered using mean. Analysis of covariance (ANCOVA) statistics was used to test hypotheses at 0.05 levels of significance. Based on the findings of the study, it was concluded that audio-visual aids are more effective than the use of chalkboard and printed materials in the teaching of welding practice and machining which are vital aspects of mechanical engineering craft practice in technical colleges. Its role cannot be underestimated in the skill acquisition process and overall academic achievement of students.

Perceived utilization of audio instructional materials and academic performance

Ebenezer (2017) submits that homes which have audio resources that simulate the school environment such as audio recorders and others are likely to encourage their wards better than homes that do not have these facilities. Those from advantaged homes find it easy to adjust to school life and for effective learning and greater achievement. Thus, the availability and provision of audio resources go a long way in determining how much a child achieves in school. For students of Physical and Health Education, some other example of audio

resources includes; the use of recorders. This will greatly enhance learning and improve academic achievement.

Discussions of findings

Availability of instructional materials for the teaching of Secondary Schools Home Economics.

Results arising from the data analysis using frequency count and simple percentages revealed that most of the instructional materials needed in teaching Home Economics in Secondary Schools in Calabar Municipality are not adequately available. This implies that students in Secondary schools in Calabar municipality lack the necessary instructional materials for teaching and learning Home Economics. This finding is shocking to the researcher because a subject like Home Economics should be lacking instructional materials due to its immediate and long-term benefit to both the students and society. For instance, the knowledge of Home Economics helps individuals live a purposeful and satisfying life through wise use and management of their human and available materials resources (Millicent, 2010). The finding also implies that the students offering this subject (Home Economics) in secondary school are going through a lot in learning the concepts of Home Economics. This is so because no students can learn effectively without materials, equipment, and tools related to the concepts and skills to be learned. For any effective learning and teaching to take place, the required learning and teaching materials must be made available. In addition, the non-availability of instructional materials to teach Home Economics in Secondary schools is a wrong signal to the academic performance of students in the subject. Aligning with the findings of this study, O'Leary, Shapiro, Toma, Sayson, Levis-Fitzgerald, and Johnson (2020) submitted that the unavailability of significant textbooks for instruction and studies is an unfortunate incidence.

Perceived utilization of visual instructional materials and students' academic performance in Secondary School Home Economics

The findings obtained from the data analysis of the test of research question revealed that only visual materials – chalk/whiteboard, flannel or felt boards, poster/diagrams, flip, and photographs are utilized in teaching secondary schools Home Economics in Calabar municipality. On the other hand, the result of the analysis of hypothesis one shows a significant relationship between the perceived utilization of virtual instructional material and students' academic performance in secondary school Home Economics. This result implies that

addressing students'' poor academic performance in Home Economics in secondary schools to some extent depends on the utilization of visual instructional materials. However, the statistical significance emphasizes the importance of visual instructional materials as a contributing factor to student's academic performance in secondary school Home Economics. The significant relationship between visual instructional materials with students' academic performance in Home Economics highlights the usefulness of visual instructional materials in teaching and learning. Utilizing visual instructional materials like chalk or whiteboard, flip charts, models, diagrams, posters, motion pictures, photographs, and so on opens room for discussion and interaction and thereby leads to the development of skills and the formation of attitudes, opinions, and values about what is learned.

Following the findings, it is pertinent to note that while visual instructional materials are a contributing factor, they may not be the sole determinant of students' academic performance in Home Economics. Other individual, environmental, and psycho-social factors may equally play significant roles in influencing students' academic performance in secondary school Home Economics. It is pertinent to consider a holistic approach in addressing students' academic performance, considering various factors such as individual, environmental, and psycho-social factors.

The implications of the findings informed the need for using visual instructional materials in teaching/learning Home Economics and any other subjects in secondary schools by both teachers and students. Also, utilizing relevant visual instructional materials in teaching and learning situations are catalysts that create variety which tends to arouse the learner's interest and help to sustain their attention in the lesson, as well as enhancing the academic performance of the learners. This finding is in line with the findings of scholars like Onyejekwe, Uchendu, and Nmom (2018); Okwara, Anyagh, and Ikyaan (2019); and Adebanjo (2020).

Perceived utilization of audio-visual instructional materials and students' academic performance in Secondary School Home Economics.

The findings from the data analysis indicate that there is a significant relationship between the perceived utilization of audio-visual instructional materials and students' academic performance in secondary school Home Economics in Calabar municipality. By implication, audio-visual usage in teaching Home Economics in secondary school is a contributing factor to students' academic performance in Home Economics in

secondary schools. That is to say, the use of audio-visual materials in the teaching-learning environment played a vital role in enhancing students' academic performance in secondary school Home Economics. The findings also signified that achieving optimal students' academic performance in secondary school Home Economics entailed the utilization of relevant audio-visual instructional materials by both the teachers and the students. Arising from the findings, it is interesting to note how important it is to make use of various audio-visual instructional materials in teaching and learning situations to enhance students' academic performance in secondary school Home Economics. The audio-visual instructional materials include video clips, film strips, television, overhead projector slides, computers, smart boards, and pen drives. The finding also portrays that the academic performance of students gets better with the use of audio instructional materials. Additionally, the finding of this study goes to demonstrate what Thorndike described as stimuli response. This means that the learners need to be stimulated with learning materials in the form of audio-visual instructional materials to respond better to the teaching-learning situations. The finding of this study is in support of the results of earlier researchers like Ode (2014); Adedeji (2017), Okwara, Anjagh, and Ikyan (2017), and Umar et al. (2020).

Perceived utilization of audio instructional materials and students' academic performance in Secondary School Home Economics.

The findings obtained from analysis and testing research question five and hypothesis three revealed that no significant relationship exists between perceived utilization of audio instructional materials and students' academic performance in secondary school Home Economics in Calabar municipality of Cross River state, Nigeria. The influence sizes were small, suggesting that the impact of audio instructional materials on students' academic performance was small. This finding could be attributed to several reasons. Firstly, factors other than audio instructional materials such as individual motivation, personal characteristics, and environmental variables may have a stronger impact on students' perception of academic performance. Secondly, audio instructional materials alone may not be a strong influence on student's academic performance in secondary school Home Economics. Finally, the small statistical relationship observed suggests that although there may be some differences in academic performance in secondary school Home Economics among the students from different audio instructional materials, these differences are not substantial. This

finding implies that teachers and school heads should focus on tracing and addressing the underlying factors contributing to poor students' academic performance in secondary school Home Economics rather than solely focusing on audio instructional materials. By understanding and addressing these factors, intervention can be designed to support students and combat students' poor academic performance effectively. The findings contradict the results of some scholars whose research was on these variables. They are: Uche and Ejabukwa (2013) whose experimental showed that students taught with textbooks outperformed their counterparts taught without textbooks. Ulugumu (2016) and Izzo et al. (2019).

Perceived utilization of audio, audio-visual, and visual instructional materials and students' academic performance in Secondary School Home Economics.

The analysis of hypothesis four indicates that perceived utilization of audio, audio-visual, and visual instructional materials are significant joint predictors of students' academic performance in Secondary School Home Economics in Calabar municipality. Based on the analysis of the data collected the result was obtained, and the null hypothesis was rejected. By implication, the combination of instructional materials such as audio, audio-visual, and visual enhances students' academic performance in secondary school Home Economics. Arising from the findings of this study, achievement of optimal students' academic performance in secondary school Home Economics depends on the utilization of appropriate audio, audio-visual, and visual instructional materials in teaching-learning situations. This finding further explained that teaching/learning materials are indispensable tools for every Home Economics teacher. Following the findings of the study, the researcher cannot imagine a Home Economics lesson without the necessary equipment/materials being put in use, when the subject itself is skill-oriented. A combination of audio, audio-visual, and visual instructional materials therefore becomes imperative in students' academic performance in secondary school Home Economics. This finding of the study echoes the submission of Ghulam et al (2015), Onyejekwe et al. (2018), Izzo et al. (2019), and Umar et al. (2020).

Summary of the study

Specifically, the sub-sets of the independent variable (instructional materials) include audio, audio-visual, and visual; while the dependent variable (students' academic performance) was made of the Home Economic

Achievement test. To realize the purpose of the research, six research questions and four hypotheses were postulated as a guide for the research.

The choice of the correlational research design was to identify if the independent variable could have some sort of relationship to the dependent variable to the extent that a change in one variable creates some change in the other. The population of the study comprised all the public secondary school students in Calabar municipality. However, a total of 249 students were used as a sample of the study. This sample size was drawn from junior secondary schools through stratified and simple random sampling techniques. Three research instruments namely: instructional materials availability checklist, instructional materials usage checklist, and Home Economics achievement test were utilized for data collection. Data gathered were subjected to statistical analysis using Pearson Product Moment Correlation and Multiple regression analysis. Both the research questions and hypotheses were subjected to statistical testing at 0.05 alpha levels. The results of the analysis are as follows:

1. There is a significant relationship between the perceived utilization of visual instructional materials and students' academic performance in junior secondary school Home Economics in Calabar Municipality.
2. There is a significant relationship between the perceived utilization of audio-visual instructional materials and students' academic performance in secondary school Home Economics in Calabar Municipality.
3. There is no significant relationship between the perceived utilization of audio instructional materials and students' academic performance in secondary school Home Economics in Calabar Municipality.
4. Perceived utilization of audio, audio-visual, and visual instructional materials are significant joint predictors of students' academic performance in secondary school Home Economics in Calabar Municipality.

Conclusion

In line with the findings of the study, the following conclusion was drawn: instructional materials like audio, audio-visual, and visual when made available for teaching and learning situations can contribute to optimum students' academic performance. In addition, the availability and utilization of audio, audio-visual, and visual instructional materials are significantly related to students' academic performance in secondary school Home Economics in Calabar municipality of Cross River state, Nigeria. Hence, the availability and utilization of instructional materials are important variables to boost students' academic performance in secondary school Home Economics and other subjects.

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