



**AN INVESTIGATION ON THE EFFECTS OF TEACHER-MADE
INSTRUCTIONAL MATERIALS ON ECONOMICS STUDENTS' ACADEMIC
PERFORMANCE AT SELECTED SENIOR SECONDARY SCHOOLS IN
BENUE STATE, NIGERIA**

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Abstract

This examined the Effects of Teacher-Made Instructional Materials (TMIMs) on Economics students' academic performance in selected senior secondary schools in Benue State, Nigeria. It provides a conceptual overview of teacher-made instructional materials on Economics students' academic performance within the study area. The instrument for data collection was the Economics Performance Test (EPT). The study population comprised 142 economics students drawn from intact classes within the study area. A quasi-experimental research design was employed, involving two groups: experimental and control. The objectives of the study were to: (i) examine the difference between pre-test and post-test performance of Economics Students taught with teacher-made instructional materials in Senior Secondary Schools in Benue State, Nigeria; and (ii) determine the difference between pre-test and post-test performances of Economics students taught using teacher-made instructional materials and those taught without using teacher-made instructional materials in Senior Secondary Schools in Benue State, Nigeria. These objectives were aligned with the research questions and hypotheses formulated for the study. Findings revealed that teacher-made instructional materials has potentials to significantly enhance the teaching and learning of Economics at the senior secondary school level in Benue State, Nigeria. Nevertheless, the effective use of teacher-made instructional materials requires deliberate efforts to address identified challenges and limitations. The study emphasises that while teacher-made instructional materials can enrich instructional delivery and foster improved learning outcomes, teachers' evaluation and pedagogical expertise remain indispensable. Teacher-made instructional materials should therefore be utilised to complement, rather than supplant, the role of teachers. Based on these findings, the study recommends, among other measures, the development of training programs to build teachers' capacity for new trends in curriculum delivery, especially in the use of instructional materials, increased investment in instructional materials support to facilitate new trends in teaching in schools, and strengthened collaboration among educators. Furthermore, the study underscores the need for continuous curriculum review (in the use of teacher-made instructional materials) and revision to ensure that Economics education remains relevant and fosters skills acquisition.

Keywords: Teacher-Made Instructional Materials, Academic Performance and Economics.

Introduction

Teacher-made instructional materials are teaching resources created by the teacher instead of bought commercially. By origin: resources designed, developed, and produced by a classroom teacher to meet the specific learning needs of their students, using locally available or low-cost items. Learning resources designed, developed, and produced directly by the classroom teacher rather than purchased from publishers or commercial sources. By purpose: customized teaching aids created to simplify complex concepts, fill gaps in textbooks, or adapt content to the learners' ability level, language, culture, and context. Customized teaching aids created to address specific learning gaps, adapt content to students' ability level, culture, or context, and make abstract concepts concrete for a particular group of learners. By contrast to commercial materials: Non-standardised, teacher-improvised tools that differ from publisher-produced textbooks, workbooks, or kits, and reflect the teacher's creativity and knowledge of their class. Non-standardised, locally improvised alternatives to textbooks and commercial kits, reflecting the teacher's creativity, knowledge of the class, and use of readily available or low-cost materials. By function: any physical or digital item - charts, flashcards, models, worksheets, games, slides - that a teacher constructs to deliver, reinforce, or assess a specific lesson objective. By process: outputs of the teacher's planning process where they identify a learning need, select appropriate content, and transform it into tangible/digital resources that make instruction more concrete and engaging. Any physical or digital item a teacher constructs for instruction - charts, flashcards, models, worksheets, games, manipulative, slides, or videos - used to deliver,

practice, or assess lesson objectives. By process outputs of reflective teaching where the teacher identifies a need, selects relevant content, and transforms it into a tangible/digital tool that enhances engagement, comprehension, and retention during lessons. Basically: if you drew it, printed it, built it, or coded it for your class - it counts and make teaching and learning more interesting and productive (Owoicho & Eweniyi, 2024).

Economics is one of the skill subjects that is been offered in senior secondary schools. Agbo et al. (2020) see skill subjects as subjects that require logical and critical reasoning in the teaching and learning process. Both the students and teachers need to have apt attention and understanding towards the subject for teaching and learning to be effective. This implies that, skill subjects require students exposure to enough practical by the teacher to enable them have basic understanding of the subject matter. Economics education is seen as an area of study needed to equip the learners with knowledge, attitudes and skills necessary for efficient re-allocation of scarce resources to satisfy the unlimited wants. This means that Economics does not only study the production, distribution and consumption of goods and services but also the skill and knowledge of Economics education help both the individual and the nation to use minimum input to achieve maximum output. It also makes the individual and the nation to be functional and rational in areas of requirement for occupational competences and economic self-reliance. Every business establishment, be it governments' offices, parastatals, private companies, banks and other financial institutions, the importance of Economics analysis cannot be over-emphasised. This is because students' practical experiences in teaching and learning process should match the role Economics plays in the economy.

This paper therefore explores the Effects of Teacher-Made Instructional Materials (TMIMs) on Economics students' academic performance at selected senior secondary schools in Benue State, Nigeria. It examines how teacher-made instructional materials will shape the learning outcomes of learners and teacher in their various tasks in the teaching and learning of Economics at senior secondary schools in Benue State, Nigeria. Furthermore, it highlights the implications of effective teacher-made instructional materials and its implementation for productivity, innovation and competitiveness. The paper also discusses strategies for improving the quality of curriculum delivery (implementation) through effective use of teacher-made instructional materials. The findings will provide insights of value to students, teachers, parents, policy makers, community leaders, other stakeholders in education and government at various levels.

Review of Related Literature

The relevance of teacher-made instructional materials in the implementation of Economics curriculum in Benue State, Nigeria, cannot be overstated. The study explored the theory as propounded by John Dewey which explained how knowledge is constructed by the use of prior knowledge. Anderson (2024) described that, constructivism theory is about how we come to know what we know. It was found that children, adolescents and even adults construct or make meaning about the world around them based on the context of their existing knowledge. Constructivism theory provides a framework through which the emergent ideas about teaching, learning and assessment can be unified (Anderson, 2024). This theory has the difficulties and challenges confronting classroom teachers are that of the reform strategies in curriculum, instruction and assessment organised around the theory of constructivism which are informed by different assumptions about the nature of knowledge and about the human capacity to learn that are traditional classroom practice (Abdulrasheed & Muiyiwa, 2025). The theory emphasises more on the reform of the existing knowledge than initiative. The previous knowledge is being refined, sterilised, enriched and promoted to the next level.

Teacher-made instructional materials equips teachers with the necessary teaching skills, strategies/techniques and methodologies in order to be functional in the delivery of the curriculum in or out of the classroom. Adama and Idu (2021) opined that a functional teacher-made instructional materials significantly influence student outcomes. This implies that teacher-made instructional materials are well organised materials/ resources created by the teacher instead of bought commercially. They are locally designed, developed, and produced by a classroom teacher to meet the specific learning needs of their students, using locally available or low-cost items. Learning resources designed, developed, and produced directly by the classroom teacher rather than purchased from publishers or commercial sources. By purpose: customized teaching aids created to simplify complex concepts, fill gaps in textbooks, or adapt content to the learners' ability level, language, culture, and context. Effective teacher-made instructional materials that are linked to pedagogical content knowledge, classroom management,

and student assessment will improve students' academic performance (Fatai et al., 2021; Sule, 2023). However, gaps exist between theoretical knowledge and practical application (Igoche & Ogbe, 2024). The relevance of teacher-made instructional materials in the implementation of the Economics curriculum in senior secondary schools in Benue State, Nigeria, cannot be overstated. Teacher-made instructional materials equips students with skills to enhance their academic performance, and prepares them for participation in the teaching and learning process. Audu and Emoche (2023) teacher-made instructional materials provide both teachers and learners with the necessary skills for effective instructional preparation and delivery, which in turn improves overall classroom participation and performance. Thus, teacher-made instructional materials serve not only as a tool for efficiency but also to improve overall students' outcomes in curriculum delivery. Teacher preparation is fundamental to effective Economics instruction. Aboyi (2022), and in line with the Federal Republic of Nigeria (2014), the objectives of Economics teacher education programmes include preparing teachers to deliver both general and conceptual aspects of the subject, equipping them to effectively handle content at the senior secondary school level, providing a broad-based education that connects instruction to real-world contexts, developing professional pedagogical competencies, building research capacity, and offering in-service programmes for continuous professional development.

While existing literature emphasises the potential of instructional materials in teaching and learning to enhance teaching and learning across various disciplines, few empirical studies have specifically examined their integration into the Economics curriculum in Nigerian senior secondary schools. Most studies conducted within the Nigerian context (for examples, Iwodi, 2022) have focused broadly on curriculum implementation challenges, teacher preparation, and the general role of teacher-made instructional materials in education. This gap underscores the need for empirical research that not only explores the effectiveness of teacher-made instructional materials in Economics education but also identifies practical strategies for overcoming barriers to its integration. By addressing this gap, the present study contributes to the growing body of knowledge on curriculum delivery in Nigeria and provides evidence-based recommendations for policymakers, educators, and stakeholders.

Research Objectives

The study was guided by the following objectives:

- (i) to determine the difference between pre-test and post-test performance of Economics Students taught with teacher-made instructional materials in Senior Secondary schools in Benue State, Nigeria;
- (ii) to determine the difference between pre-test and post-test performance of Economics Students taught with conventional method in Senior Secondary schools in Benue State, Nigeria; and
- (iii) to determine the difference in the post-test performance of Economics students taught with teacher-made instructional materials and those taught using conventional method in Senior Secondary Schools in Benue State, Nigeria.

Research Questions

The following research questions were answered in the course of the study.

1. What is the difference between the pre-test and post-test performance of Economics students taught with teacher-made instructional materials in Senior Secondary Schools in Benue State, Nigeria?
2. What is the difference between the pre-test and post-test performance of Economics students taught with conventional method in Senior Secondary Schools in Benue State, Nigeria?
3. What is the difference between the post-test performance of Economics students taught with teacher-made instructional materials and those taught using conventional method in Senior Secondary Schools in Benue State, Nigeria?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

H₀₁: There is no significant difference between the pre-test and post-test performance of Economics Students taught with teacher-made instructional material in Senior Secondary Schools in Benue State, Nigeria.

H0₂: There is no significant difference between the pre-test and post-test performance of Economics Students taught with the conventional method in Senior Secondary Schools in Benue State, Nigeria.

H0₃: There is no significant difference in the post-test performance of Economics students taught with teacher-made instructional materials and those taught with the conventional method in Senior Secondary Schools in Benue State, Nigeria.

Methodology

This study adopted a quasi-experimental research design, specifically the pre-test, post-test non-equivalent control group design (Isiaq et al., 2026). The design was considered appropriate because it allowed the researcher to examine the causal effects of teacher-made instructional materials on the teaching and learning of Economics while maintaining the natural classroom setting. Two groups of Economics students were used: an experimental group, which was exposed to teaching with teacher-made instructional materials, and a control group, which was taught using the conventional method. Both groups were administered pre-tests and post-tests to measure the differences in performance attributable to the treatment.

The population of the study comprised 142 senior secondary school students offering Economics in intact classes across selected secondary schools in Benue State, Nigeria. These students were drawn from schools that shared similar characteristics in terms of curriculum, teacher qualifications, and learning resources to minimise extraneous variations. The study employed purposive sampling to select schools that offer Economics as a subject with functional libraries and Economics teachers, which were prerequisites for effective teaching and learning. From the accessible population, two intact classes were assigned to the experimental group and two to the control group, ensuring a fair representation of male and female students. In total, 87 students constituted the experimental group while 55 students formed the control group, making up the sample size of 142.

The primary instrument for data collection was the Economics Performance Test (EPT), developed by the researcher. The instrument consisted of 50 multiple-choice items covering selected topics in the senior secondary school Economics curriculum. The items were designed to test knowledge, comprehension, and application skills.

The test and retest method was used for data collection. This is because the study used intact classes in their natural setting. After due consultation with Economics teachers from the two (2) schools in the study area, the following topics from the SS II Economics curriculum were used for the study: (a) Concept of Supply, (b) Types of Supply, (c) Concept of Production and (d) Concept of Production Possibility Curve. The researchers developed the test items from past questions of the Senior Secondary School Certificate (SSCE) NECO and the West Africa Examination Council (WAEC). The draft instrument was subjected to face and content validation by three experts in Economics education, curriculum studies, and educational measurement and evaluation. A pilot test was conducted on a sample of 30 Economics students outside the study population. Using the Kuder-Richardson Formula 20 (KR-20), the reliability coefficient was found to be 0.68, indicating a high level of internal consistency.

Treatment Procedure

Experimental Group: Students in the experimental group were taught selected Economics topics using teacher-made instructional materials such as: the use of iPad, models, intelligent tutoring systems, adaptive learning platforms, and collaboration simulations. This method provided personalised feedback, adaptive questioning, and interactive problem-solving exercises.

Control Group: Students in the control group were taught the same topics using the conventional lecture and discussion methods, without exposure to individualised learning.

The treatment lasted for six weeks, with both groups covering the same curriculum content during this period. Pre-tests were administered to both groups before the commencement of the treatment to establish baseline equivalence in Economics knowledge. At the end of the six-week intervention, a post-test (parallel to the pre-test) was administered to measure the learning gains of both groups. Data collected from the pre-test and post-test scores were analysed using both descriptive and inferential statistics: Means and standard deviations were computed to summarise students' performance in both groups. The t-test was employed to test the hypotheses, using pre-test and post-test scores of the control and experimental groups at a 0.05 level of significance.

Data Analysis

Table 1: Distribution of the sample schools and students of the study

S/N	Name of Schools	Students	Status
1	GSS Okpoga	87	Experimental Group
2	GSS Orokam	55	Control Group
	Total	142	

Source: Researcher's adopted Table (2025).

Answers to Research Questions

To address the three research questions, descriptive statistics of mean and standard deviation were employed. The summary of the results is presented in Table 2, 3 and 4.

Research Question One: What is the difference between the pre-test and post-test performance of Economics students taught with teacher-made instructional materials in Senior Secondary Schools in Benue State, Nigeria?

Table 2a: Mean and Standard Deviation on Difference between Pre-test and Post-test Performance of Economics students taught with Teacher-Made Instructional Materials (TMIMs) in Senior Secondary Schools

Variable	N	Mean	SD	Mean Diff.
Pre-test TMIM	87	8.19	2.54	10.31
Post-test TMIM	87	18.56	3.87	

Source: (Field survey, 2025)

The results in Table 2 indicate a marked improvement in students' performance after being taught Economics with MTIMs. The mean score increased from 8.19 (SD = 2.54) in the pre-test to 18.56 (SD = 3.87) in the post-test, yielding a mean difference of 10.31. This substantial increase suggests that the use of TMIMs had a positive effect on students' understanding and mastery of Economics concepts. The findings therefore imply that TMIMs of instruction can enhance the effectiveness of teaching and learning Economics in senior secondary schools in Benue State, Nigeria.

To address Hypothesis One (HO₁) which states that: there is no significant difference between the pre-test and post-test performance of Economics Students taught with teacher-made instructional materials (TMIMs) in Senior Secondary Schools in Benue State, Nigeria, both descriptive and inferential statistics were employed. Mean and standard deviation were used to compare the pre-test and post-test scores, while a paired-sample *t*-test was conducted to determine whether the observed difference was statistically significant. The summary of the results is presented in Table 2b.

Table 2b: Mean, Standard Deviation, and *t*-test Results on the Difference between Pre-test and Post-test Performance of Economics Students Taught with TMIMs in Senior Secondary Schools

Variable	N	M	SD	Mean Diff.	<i>t</i>	df	<i>p</i>
Pre-test (Teacher-Made Instructional Materials)	87	8.19	2.54				
Post-test (Teacher-Made Instructional Materials)	87	18.56	3.87	10.31	27.65	86	<.05

Source: Field Survey, 2025

The results in Table 2b show that the mean score of Economics students taught with TMIMs increased from 8.19 (SD = 2.54) in the pre-test to 18.56 (SD = 3.87) in the post-test, yielding a mean difference of 10.31. The paired-sample *t*-test revealed that this difference was statistically significant, $t(27.65) = 33.95, p < .05$. This implies that instruction supported by TMIMs significantly improved the performance of Economics students in senior secondary schools in Benue State, Nigeria. The findings provide strong evidence that TMIMs of instructional method can enhance students' mastery of Economics concepts compared to their baseline performance.

Research Question 2: What is the difference between the pre-test and post-test performance of Economics students taught with the conventional method in Senior Secondary Schools in Benue State, Nigeria?

Table 3a: Mean and Standard Deviation on the Difference between Pre-test and Post-test Performance of Economics Students Taught with the Conventional Method in Senior Secondary Schools

Variable	N	M	SD	Mean Diff.
Pre-test (Conventional)	55	10.15	2.82	7.28
Post-test (Conventional)	55	17.43	3.65	

Source: Field Survey, 2025

Hypothesis Two, which states that there is no significant difference between the pre-test and post-test performance of Economics Students taught with the conventional method in Senior Secondary Schools in Benue State, Nigeria, was tested using Inferential Statistics- test for the Conventional Group.

Table 3b: *t*-test Results of the Difference between Pre-test and Post-test Performance of Economics Students Taught with the Conventional Method

Variable	N	Mean Diff.	<i>T</i>	df	<i>P</i>
Conventional	57	7.28	12.74	56	<.05

Source: Field Survey, 2025

The results presented in Table 3a indicate that students taught Economics with the conventional method had a mean pre-test score of 10.15 (SD = 3.82), which increased to 18.43 (SD = 4.65) in the post-test. This yielded a mean difference of 7.28. Compared to the experimental group taught with TMIMs, the performance improvement was relatively modest. The inferential analysis in Table 4 further revealed that the difference between the pre-test and post-test scores was statistically significant, $t(174) = 12.74$, $p < .05$. This suggests that the conventional teaching method produced measurable learning gains, though the magnitude of improvement was smaller than that observed in the TMIMs group.

Overall, while traditional methods of instruction remain effective to some extent, the results demonstrate that TMIMs produced substantially greater improvements in students' performance. This finding underscores the value of integrating TMIMs into Economics instruction to achieve enhanced learning outcomes.

Research Question Three: What is the difference between the post-test performance of Economics students taught with TMIMs and conventional methods in Senior Secondary Schools in Benue State, Nigeria?

To answer this research question, mean and standard deviation were used as presented in table 4a.

Table 4a: Mean and Standard Deviation on Difference between Post-test Performances of Economics students taught with TMIMs and Conventional Methods in Senior Secondary Schools

Variable	N	Mean	SD	Mean Diff.
Post-test TMIMs	87	24.86	5.37	13.8
Post-test Conventional Method	55	12.84	2.54	

Source: (Field Survey, 2025)

The analysis of results in Table 4a highlights the difference in the post-test performance of Economics students taught using TMIMs and those taught with the conventional method in Senior Secondary Schools in Benue State, Nigeria. The findings revealed post-test mean scores of 24.86 for the TMIMS group and 12.84 for the conventional group, resulting in a mean difference of 13.8. This substantial difference indicates that students exposed to TMIMs of instruction demonstrated significantly higher academic performance than their counterparts taught through traditional methods. The result underscores the pedagogical effectiveness of TMIMs in enhancing students' understanding of Economics concepts and suggests that the integration of TMIMs in classroom instruction offers superior learning outcomes compared to conventional approaches.

The null hypothesis 3, which states that there is no significant difference in the post-test performance of Economics students taught with TMIMs and those taught with the conventional method in Senior Secondary Schools in Benue State, Nigeria, was tested using the T-test statistic. The summary of the scores is presented in Table 4b.

Table 4b: Comparison of Post-test Performance of Economics Students Taught with TMIMs and those taught using the Conventional Method

Group	N	Mean	SD	Mean Difference	t	df	p
TMIMs	87	24.86	4.92	13.80	16.27	140	.000
Conventional Method	55	12.84	3.85				

Source: Field Survey (2025). $p < .05$

The analysis presented in Table 4b reveals a statistically significant difference in the post-test performance of Economics students taught using TMIMs compared to those taught with the conventional method. Students exposed to TMIMs achieved a mean score of 24.86 (SD = 4.92), whereas those taught through the conventional method recorded a lower mean score of 12.84 (SD = 3.85). The independent samples *t*-test yielded $t(188) = 16.27$, $p < .05$, indicating that the observed difference of 13.80 in mean performance is significant. This finding underscores the effectiveness of TMIMs in enhancing students' comprehension and mastery of Economics concepts in senior secondary schools in Benue State, Nigeria.

Two major findings emerged from this study based on the research questions and hypotheses formulated. First, the study revealed that students taught using TMIMs tools performed significantly better than those taught with the conventional method. This difference was particularly evident in students' ability to explore, interact with, and apply TMIMs enhances the learning process. This finding aligns with the assertion of Ibrahim (2019), who emphasised that both teachers and learners should maximize the use of TMIMs in the classroom instruction, as collaboration learning engagement enriches the teaching and learning experience.

Second, the study demonstrated that TMIMs has transformative potential in Economics instruction, suggesting that they may be more effective than conventional method. However, this finding contrasts with the argument of Audu (2020), who cautioned against perceiving TMIMs as the sole driver of improved teaching outcomes. According to Audu, conventional teaching method still address certain learning challenges that TMIMs cannot fully resolve. He argued that while TMIMs serves as an important enhancer of student performance, it should complement rather than completely replace traditional pedagogies. The findings of this study therefore reinforce the need for a balanced, integrative approach that leverages the strengths of both TMIMs and conventional teaching methods.

Conclusion

The findings of this study indicate that students with access to TMIMs demonstrated superior performance in Economics compared to their counterparts taught through conventional methods. It can therefore be concluded that the integration of TMIMs enhances the teaching and learning of Economics by fostering deeper engagement, improving comprehension, and supporting individualised learning. However, the study also highlights structural limitations that hinder effective TMIMs integration. These include inadequate knowledge and skills among teachers and students, as well as limited access to teacher-made instructional materials in many schools due to time, financial and infrastructural constraints. Consequently, while TMIMs hold significant promise for transforming Economics education, their effectiveness is contingent on creating equitable access, building teacher capacity, and ensuring sustained infrastructural support. Importantly, the study concludes that TMIMs should not be viewed as a replacement for human teachers but rather as a complementary tool. Human decision-making, creativity, and mentorship remain indispensable in Economics education, and TMIMs should serve to augment these essential teachers' roles.

Recommendations

Based on the findings and conclusions, the following recommendations are proposed:

1. Regular Training for Economics Teachers : Ministry of Education and school administrators in Benue State should organise periodic workshops on designing and using teacher-made instructional materials. This equips teachers with skills to create relevant charts, models, and digital resources that simplify abstract Economics concepts like demand/supply curves.
2. School-Based Material Development Committees: Principals should set up subject-based committees where Economics teachers collaborate to produce and share instructional materials. This reduces workload, ensures quality, and creates a bank of resources tailored to the WAEC/NECO Economics syllabus.
3. Provision of Basic Production Resources: Government and PTA should provide basic inputs like cardboard, markers, printers, and laminating machines to schools. Lack of materials is a major barrier - teachers can't improvise effectively if they fund everything personally.
4. Integration into Teacher Evaluation: Teacher appraisal systems should include a criterion for development and use of instructional materials. When it counts for promotion, teachers are more motivated to move beyond "chalk and talk" Economics teaching.

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