

Assessment for Learning to Enhance Economic Students' Performance in Gombe State Secondary Schools in Nigeria

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Abstract

Traditional methods of assessing student learning outcomes often fail to fully engage students or accurately measure their performance across various tasks. This study examined the impact of the Assessment for Learning Method (AFLM) on the academic performance of Economics students in Gombe State secondary schools. Guided by two research questions and corresponding hypotheses, a quasi-experimental design was employed. From a population of 30,430 students, a purposive and cluster sampling technique selected 68 Senior Secondary 2 (SS2) Economics students from two intact classes. Data was collected using a researcher-developed 40-item Economics Achievement Test (EAT), which demonstrated an internal consistency reliability coefficient of 0.81, as established by Kuder-Richardson Formula 20 (KR-20). Hypotheses were tested at a 0.05 significance level using One-Way and Two-Way Analysis of Covariance (ANCOVA). Findings revealed that the AFLM group showed a significant improvement in post-test scores compared to the Traditional Assessment Methods (TAM) group. Consequently, it is recommended that educational ministries and departments regularly organize and sponsor conferences, seminars, exhibitions, and workshops to train Economics teachers in implementing performance-based and self-assessment methods as integral components of the academic learning process.

Keywords: Economics, Assessment for Learning method, performance-based assessment, self-assessment, students' achievement.

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(Received 23 November 2024; Revised 25 July 2025; Accepted 25 July 2025; Published 06 August 2025)

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Introduction

Economics, as defined by Amaechi (2014), is a Social Science subject that studies human behaviour in the effort to allocate scarce resources efficiently and effectively in order to maximize cost. Economics stands as a pivotal subject within Nigeria's senior secondary school curriculum, offering students essential insights into resource allocation, production, and consumption. This foundational knowledge equips learners with the analytical tools necessary to navigate and contribute effectively to the nation's economy.

However, the effective teaching and learning of Economics face several challenges in Nigerian public secondary schools. One significant issue is the shortage of qualified Economics teachers, which hampers the delivery of comprehensive economic education. Additionally, inadequate instructional materials and infrastructural facilities further impede the teaching process, limiting students' engagement and understanding. These challenges are compounded by large class sizes, which restrict personalized instruction and effective classroom management. Moreover, insufficient professional development opportunities for teachers hinder the adoption of innovative teaching methodologies, thereby affecting student learning outcomes.

According to the NERDC (2008), Economics curriculum in secondary schools should empower students to appreciate the essentials of economic principles and concepts and equip them with necessary tools for sound analysis of the economy. The knowledge of Economics helps in equipping secondary school students with entrepreneurial skills to becoming useful citizens with or without the privilege to higher education (Finkelstein, 2011). The relevance of Economics as a

requirement for technological advancement of a nation cannot be underrated. Considering the crucial roles which Economics, as a subject, plays on students and learners, a rational approach to issues on this subject should be given high priority among other subjects (Hansen, 2001). As such, efforts should be made towards ensuring students' success. This is attainable when proper attention is given not only to the teaching and learning but also to the assessment of students. Through assessment, the teacher can learn about students' behavioral changes, knowledge acquisitions, and other areas of their growth. It entails the teacher's conscious attempt to gauge how the teaching process and overall school learning impact the students' behaviour. Both formative and summative evaluations are possible. Summative evaluation is completed at the conclusion of a programme, whereas formative evaluation occurs as instruction advances.

Traditional assessment methods (TAM) have been used for both formative and summative purposes for centuries. TAMs place strong emphasis on evaluating students' learning outcomes without taking into account how they learn or arrive at a conclusion. Since students are not included in the evaluation process, the techniques are viewed as biased. The "Assessment for Learning" approach, which is primarily employed in formative assessment, is taken into consideration in this study. The process of finding and analyzing information to help students and teachers to determine where students are in their learning, where they need to go, and how to get there is known as Assessment for Learning (AFL) (Assessment Reform Group, 2002). All children can benefit from evaluation for learning, according to Black and Harrison (2001), even though it is not an addition to instruction but is an integral part of it.

AFL has several key characteristics, including taking place at every stage of the learning process, involving interaction with teachers, aligning instruction, identifying specific learning needs of students or groups, choosing and modifying materials and resources, and developing differentiated teaching strategies and learning opportunities to support individual students. The utilization of performance-based assessment, self-evaluation, and peer assessment enables assessment for learning in the twenty-first century (Allen, 2014). In order to gauge the impact on students' academic performance in Senior Secondary Economics in Gombe State, the researchers employed portfolios and rubrics as assessment tools for learning approaches.

Rubrics, which are basic assessment tools, let teachers evaluate and report student achievement. According to Allen (2014), a rubric is a dependent document that resembles a grid and lists the criteria, or what counts, for an assignment that is given to a student. It also describes the quality of the assignment, ranging from good to poor. The necessity of these descriptive scoring schemes and scoring criteria stems directly from the programme's emphasis on performance-based tasks and the use of constructed replies (Quinlan, 2006).

Rubrics offer comprehensive feedback that can be used to guide students' progress both overall and on an individual basis (Quinlan, 2006). Standardized testing systems evaluate defined knowledge at a specific point of time, making it impossible for teachers to measure certain talents and abilities. Giving students high-quality feedback is another significant benefit of using rubrics, as is frequently mentioned in the argument. In contrast, portfolios are used to evaluate students'

performance and are a means for artists, photographers, painters, and architects to display their work (Birgin & Baki, 2007).

Students complete this evaluation in collaboration with their teachers. Consisting of student participation in material selection, selection criteria, merit evaluation criteria, and evidence of student self-reflection. Instead of being a snapshot of a student's knowledge at one point of time (like a single standardized test), the portfolio assessment highlights students' effort, development, and achievement over time. Since portfolios measure a student's ability to apply knowledge rather than just rehearse it, they are particularly important (Light & Pierson, 2013). Furthermore, since portfolios facilitate the gathering of data from several sources, including students' parents, friends, teachers, and themselves, they give teachers access to trustworthy information on their students. They are crucial instruments for evaluating students' learning outcomes and procedures. Numerous theoretical and relevant studies have examined the potential of that portfolio as a tool for learning and evaluation (Ersoy, 2006). As a result, portfolios may have the ability to both assess and learn from students (i.e., to evaluate learning and to judge learning).

Enhancing learning and guaranteeing accountability (of teachers and schools) are the goals of AFL. In addition to focusing on the dynamics of teaching and learning, AFL investigates the potential for learning and suggests the next course of action to encourage learning. AFL gives a quick overview of the current state of affairs and demonstrates what has already been accomplished, retained, and assimilated. One of the most notable differences between these

assessments and other assessments is that the former uses several crucial tools and procedures for evaluation and encourages feedback, whilst the latter does not. AFL aims to guarantee instantaneous improvements in both teaching and learning. This suggests that rather than focusing on learning improvement after the conclusion of training, it does so while the instruction is still continuing. According to this study, AFL incorporates evaluation into the teaching and learning process by helping students understand exactly what they need to learn and what is expected of them. They also receive feedback and guidance on how to improve their work and academic performance. In order to adapt to teaching and plan for the next steps in learning, AFL involves gathering evidence about learning that promotes feedback through various assessment techniques, such as rubrics, portfolios, performance-based assessment, self-assessment, and peer-assessment. This encourages student participation regardless of gender by improving the students' enthusiasm and attitude towards learning and assessment.

Gender biologically defines one as masculine or feminine. The World Health Organization (2011) states that gender refers to socially constructed characteristics of women and men, such as norms, roles and relationships of and between groups of women and men. It varies from society to society and can be changed. This points to the fact that gender may affect academic achievement of students. Academic achievement is the outcome of education, the extent to which a student teacher or institution has attained educational goals commonly measured through examinations or continuous assessment represented by cumulative (CGPA) and compilation of educational degrees such as bachelor degrees. The cognitive, affective, and psychomotor skills that students acquire in a given academic activity are referred to as academic

achievement. This suggests that academic success is viewed as a result of the knowledge acquired following teaching. A student's performance or accomplishment in a subject is referred to as his/her academic achievement. Nwagbo (2001) asserts that meeting a set of instructional goals is a prerequisite for success in the teaching and learning process. It is only by evaluating students that this achievement rank can be attained.

The formative and summative evaluations of Economics students at Gombe State's Senior Secondary School over the years have not been promising. Reports on internal and external examination records make this clear. In support of this, the chief examiner's reports from the West Africa Examination Council (WAEC) and the National Examination Council (NECO) over the years have demonstrated evidence of subpar economic performance. In 2015, for example, just 188,700 candidates, or 16% of the 1,194,274 who took the test, received credits in five disciplines, including Economics. Poor evaluation practices (Light & Pierson, 2013) and the personality of the Economics teacher (Idika & Onuoha, 2018) have been blamed for this low achievement. One starts to question how successful the assessment for learning method (AFLM) would be in raising students' academic achievement in Economics given the current trends in learning and evaluation, and what impact does AFLM has on the academic performance of students studying Economics in Gombe State's senior secondary schools. The current study attempted to answer these questions.

Aim and Objectives of the Study

This study's primary aim was to ascertain how the assessment for learning method (AFLM) affects the academic performance of Economics students in Gombe State's senior secondary schools.

In particular, the objectives of the study were to;

1. determine how the mean achievement scores of students evaluated using the TAM and AFLM differed at the pre-test and post-test levels, and
2. determine the mean achievement scores of male and female students assessed with AFLM at post-test

The following research questions were posed to guide the study:

1. What is the mean difference between the pre-test and post-test achievement scores of students evaluated using the AFLM and those evaluated using the TAM?
2. What is the mean difference in the achievement scores of male and female students assessed with AFLM at post-test?

The following null hypotheses were developed and tested at the significance level of 0.05.

H01: The pre-test and post-test mean achievement scores of students evaluated using the AFLM and those evaluated using the TAM do not differ significantly.

H02: The post-test mean achievement scores of male and female students evaluated using AFLM do not differ significantly.

Literature Review

Achievements in subjects like Economics, which are crucial for future careers, are frequently used to gauge the quality of education (Adeyemi, 2011). The purpose of this literature review is to examine how assessment procedures and the academic performance of Economics students in secondary schools in Gombe State are related, emphasizing the different elements that affect learning outcomes.

Theoretical Framework

Developing a theoretical framework for Gombe State economics students' learning assessment entails defining important theories, concepts, and techniques pertinent to the educational and economic environment. A suggested structure for the framework is shown below,

Constructivist Theories of Jean Piaget and Lev Vygotsky

Two influential contributors to the development of constructivist theories are Jean Piaget and Lev Vygotsky. Although both agree that classrooms should foster constructivist learning environments, their philosophies differ on implementation. Constructivism posits that learners build knowledge actively through experiences and social interactions (Fosnot, 2005; Schunk, 2012). In the learning process, the students are regarded as being at the center. Our experiences, biases, age, and level of mental and physical development all have an impact on learning. When motivated, the learner uses his will, resolve, and action to collect selected data, transform it, create hypotheses, test them through interactions, applications, or experiences, and come to

conclusions that can be verified. Constructivism turns today's classrooms into places where students absorb information and create their own knowledge.

Constructivist classrooms differ from traditional lecture halls in that the teacher serves as a guide, while students take ownership of their learning (Brooks & Brooks, 1999). Projects, group work, problem-solving, and reflective thinking are central activities. Modern tools, such as personal computers, further support constructivist practices by allowing individualized, self-paced, and collaborative learning (Jonassen, 1999). The student may now exchange ideas, work on group projects, engage with a variety of demographics, and perform research.

According to Piaget (1970), learning occurs through processes of assimilation and accommodation as students interact with their environment. Vygotsky (1978), in contrast, emphasizes the social context of learning and introduced the concept of the Zone of Proximal Development (ZPD), suggesting that students achieve higher cognitive levels through guided interaction with more knowledgeable others. Therefore, both Piaget and Vygotsky emphasize that learners construct knowledge through active engagement with their environment. In the context of Economics education, this implies that students learn more effectively when they participate in activities that require critical thinking and problem-solving related to real-world economic situations. Vygotsky's concept of ZPD is particularly relevant; it suggests that students can achieve higher levels of understanding with appropriate guidance, highlighting the importance of collaborative learning and scaffolding in teaching complex Economics concepts. This theory is particularly relevant to Economics education, as students benefit more from real-

world problem-solving, group discussions, and interactive activities than passive memorization (Obara & Okafor, 2020).

Bloom's Taxonomy of Learning Objectives

Bloom's Taxonomy, introduced by Bloom et al. (1956) and revised by Anderson and Krathwohl (2001), classifies learning into cognitive levels that progress from lower-order to higher-order thinking: remembering, understanding, applying, analyzing, evaluating, and creating which better reflect contemporary educational practices. This revised framework introduces two primary dimensions:

1. Knowledge Dimension: This encompasses four categories-- factual knowledge, conceptual knowledge, procedural knowledge, and metacognitive knowledge
2. Cognitive Process Dimension: This consists of six levels, organized from lower to higher-order thinking skills: remembering, understanding, applying, analyzing, evaluating, and creating.

Applying this taxonomy in Economics assessment ensures that learners not only recall information but also analyze and evaluate economic data and apply theories to practical situations (Forehand, 2010; Krathwohl, 2002). Assessments should be designed to address each cognitive process level, from remembering fundamental concepts to creating original analyses of economic issues. Studies show that structured assessments aligned with Bloom's taxonomy improve students' cognitive engagement and critical thinking (Ibrahim & Odetayo, 2019). This comprehensive approach is crucial for Economics students who must interpret data and apply theories to complex real-world issues.

Assessment Frameworks

There are two key different methods for assessing student development and guiding instructional strategies in education: "Assessment of learning" (AOL) and "Assessment for learning" (AFL). While AFL is a continuous process that offers feedback and insights to improve student learning while the learning is still occurring, AOL is concerned with measuring student accomplishment at the conclusion of a learning period and is frequently linked to awarding grades. Assessment for Learning (AFL) emphasizes formative assessments that provide continuous feedback to improve student learning during the instructional process (Black & Wiliam, 2009). This contrasts with Assessment of Learning (AOL), which is summative and focuses on measuring outcomes at the end of instruction (Harlen, 2007).

AOL (Summative Assessment)

Summative assessments, also known as evaluation of learning, are used to gauge how well students have met particular learning objectives or standards. It usually takes place after the conclusion of a unit, grade, semester, or course, among other learning periods. Summative assessments are mostly used to grade students or assess their overall performance. Final examinations, standardized tests, and end-of-year projects are a few types of summative evaluations (Stiggins, 2005).

Features of AOL:

1. **Endpoint Evaluation:** At the end of a unit, course, or academic year, an AOL is conducted. It focuses on the learning process' results and outcomes.
2. **Serious Situations Nature:** AOL results frequently have a big impact on students' final grades

or academic records, which might affect their chances of moving on to the next stage of their study or finding employment.

3. External Benchmarking: One popular type of AOL is external standardized testing, which offers a uniform way to evaluate student performance across various institutions or geographical areas.

AFL (Formative Assessment)

AFL, sometimes referred to as formative assessment, is a continuous, interactive activity that occurs throughout the learning process. AFL, in contrast to AOL, is not concerned with ultimate results or grade assignment. Instead, it supports student-centered learning and helps educators tailor instruction based on ongoing evidence of learning (Heritage, 2010). For Economics education, AFL strategies, such as concept mapping, class discussions, and peer review, promote deeper understanding of Economic principles (Obioma & Salami, 2010).

Features of AFL:

1. Constant and Informative: AFL takes place during the whole learning process, making it possible to track students' progress over time. It supports instant improvements by giving real-time feedback.
2. Student-Centred: AFL places a strong emphasis on students' active participation in the evaluation procedure. It promotes introspection, self-evaluation, and a better comprehension of one's own educational path.
3. Flexible and Adaptive: Since AFL is flexible and adaptable, teachers can modify their lesson

plans in response to the results of continuous assessments. It makes individualized learning experiences easier.

This framework is relevant because it focuses on formative assessments that promote learning through feedback and self-regulation. The assessment in this study involved regular feedback and self-assessment exercises that helped students track their progress in understanding economic concepts.

Assessment as Learning (AAL) Framework

Assessment as Learning (AAL) views students as active assessors of their own progress. It emphasizes self-regulation, reflection, and metacognition, essential tools for lifelong learning (Earl, 2003). AAL complements AFL by deepening student ownership of the learning process. Unlike AOL which focuses on evaluating student performance. In Economics classrooms, AAL encourages students to monitor their understanding of complex topics like inflation, fiscal policy, and supply and demand through journals, self-rating rubrics, and learning logs (Sadler, 2007).

Features of the AAL:

1. Self-Assessment: Students evaluate their work against established criteria, fostering self-awareness and responsibility for their learning.
2. Goal Setting: Learners set specific, measurable, achievable, relevant, and time-bound (SMART) goals to guide their learning activities.
3. Reflective Practices: Regular reflection helps students internalize feedback and apply it to future tasks, enhancing their learning strategies.

4. Metacognition: Developing an awareness of one's thinking processes enables students to plan, monitor, and assess their learning strategies effectively.

Implementing AAL in Economics education can significantly enhance student achievement by promoting active engagement, developing critical thinking and enhancing motivation. Integrating AAL with existing frameworks like Constructivist Theories, Bloom's Taxonomy, and AFL provides a comprehensive approach to assessment. This integration ensures that assessments not only evaluate learning outcomes but also actively involve students in the learning process, leading to improved academic performance in Economics.

Conceptual background

Assessments are methodical techniques used to evaluate performance, attitudes, abilities, and knowledge. They are extensively utilized to gauge competency, enhance results, and guide choices in a variety of industries, including business, healthcare, and education. Assessment, as used in education, encompasses the vast array of techniques or resources teachers employ to assess, gauge, and record students' academic preparedness, learning progress, skill development, or educational requirements.

William (2023) emphasize the dynamic nature of assessment, particularly formative assessment, as "a process of using evidence to adapt teaching to meet student needs." His latest work highlights the role of assessments in promoting equitable learning and supporting personalized feedback loops to enhance learning outcomes. ICAPE (2023) emphasizes evidence-based

assessment, describing it as "a tool to inform teaching practices and support student development, rather than just a measure of accountability." They advocate for holistic assessment approaches that cater to varied learning styles and contexts. The Cambridge Assessment group (2023) focuses on digital transformation, defining assessments as "structured methods to evaluate and support learning, increasingly integrating AI to personalize and adapt to learners' needs." This approach reflects the transition towards digital-first, equity-focused assessment methods in global education. These definitions reflect contemporary shifts towards formative, equitable, and technologically integrated assessments.

In the field of education, assessment is essential to both teaching and learning. It helps improve the teaching and learning process, highlights areas for growth, and offers useful information on students' progress. Teachers can use it as a tool to assess students' knowledge and abilities, determine any learning gaps, and determine how well they comprehend the material.

Assessment serves multiple purposes, including measuring students' understanding, providing feedback to improve learning, and guiding instructional practices. According to McMillan (2007), effective assessment contributes to increased student motivation and engagement, ultimately leading to improved academic performance. In Economics education, where critical thinking and application of concepts are essential, appropriate assessment methods are paramount for students' success.

Assessment Practices in Gombe State

Both local and national education policies have an impact on the different evaluation methods used in secondary schools in Gombe State. The way these strategies are applied in different schools varies noticeably (Abubakar, 2020). Some schools heavily rely on traditional examinations, which may not be sufficient to gauge students' economics proficiency, while others employ a range of assessment techniques, such as projects, assessments, and hands-on activities (Yakubu, 2019).

Factors Influencing Assessment Outcomes

A number of factors influence how well assessments raise students' Economics proficiency:

1. **Teacher Competence:** Student outcomes are greatly impacted by teachers' expertise in creating and executing assessments. According to Ananda et al. (2019), educators who are skilled in formative assessment methods are in a better position to assist students' learning.
2. **Student Engagement:** Academic performance is typically higher among engaged students. Higher achievement levels can result from assessments that encourage active engagement (Fredricks et al., 2004).
3. **Feedback Mechanisms:** Students can discover their areas of strength and growth with the use of prompt and helpful feedback from examinations, which is essential for economics learning (Hattie, 2012).

4. Availability of Resources: The efficiency of assessment procedures and, in turn, student accomplishment can be impacted by the availability of learning resources, such as technology, textbooks, and instructional materials (Ogunyemi & Usman, 2021).

Challenges in Assessment Practices

Effective assessment has many potential advantages, but Gombe State faces a number of difficulties as stated below:

- Inadequate teacher training: Many educators are not sufficiently trained in contemporary assessment methods, which makes it difficult for them to administer tests in an efficient manner (Suleiman, 2021).
- Infrastructure restrictions: The range of assessment techniques used may be restricted by inadequate educational facilities (Gimba, 2020).
- Cultural factors: Students' attitudes toward evaluations and education may be influenced by cultural views on these topics (Ogunleye, 2018)

Student Achievement in Economics in Gombe State

Gombe State is renowned for its varied socioeconomic and cultural composition and is situated in North-Eastern Nigeria. Public and private secondary schools are essential to the delivery of economics education, which is overseen by the Ministry of Education. Economics education equips students with critical thinking, analytical, and decision-making skills, which are vital for personal and national development.

Teacher qualifications and competence, availability of qualified economics teachers, professional development and training programs, teaching and learning resources, availability of textbooks, instructional aids, and digital tools, class size and teacher-student ratio socio-economic background, parental income and support for education, access to basic educational infrastructure Government policies and funding implementation of curriculum reforms, provision of funds for schools, student motivation and interest, attitude towards Economics as a subject and Peer influence and aspirations are among the factors that influence students achievements in education in Gombe State.

Methodology

The quasi-experimental pre-test non-equivalent control group design was used in the investigation. This design involves selecting an experimental group that receives the intervention (AFLM) and a control group that does not, with both groups undergoing pre-tests and post-tests to measure changes in performance. The design in this study effectively balances methodological rigor with practical considerations, making it appropriate for evaluating the impact of AFLM on student achievement in Economics as it provides baseline comparison, control over extraneous variables, practical feasibility, and enhanced internal validity.

The study was carried out in Nigeria's Gombe State. The study's population consisted of 30,430 senior secondary school students in Gombe State's Gombe Municipality. 68 SS2 Economics students from two complete classes made up the sample. Purposive and cluster sampling methods were used to select the samples. Since they are neither prepared for any end-of-course

or examination (as is the situation with SS3) nor deal with the issue of being newly exposed to senior secondary Economics (as is the case with SS1), SSII students were chosen. Purposive sampling methods were employed to choose the study's co-educational schools. The selection of two co-educational schools in Gombe State was guided by specific criteria to ensure the validity and reliability of the research findings. The researchers intentionally chose co-educational schools to maintain gender balance within the sample. This approach ensured that both male and female students were represented, allowing the findings to be more generalizable across the student population.

Intact Classes are the entire existing classes (intact groups) which were used to preserve natural learning environments within these schools. It aimed to minimize disruptions to the usual classroom dynamics. This method helps in observing the effects of the AFLM in settings that closely resemble typical educational environments, thereby enhancing the ecological validity of the study.

Each school had one intact class selected at random. One experimental group and one control group were then allocated to the schools. TAM served as the control group, and AFLM served as the experimental group.

The Economics Achievement Test (EAT) utilized in the study was a 30-item multiple-choice objective test, each item offering five options. This format is commonly employed in educational assessments due to its efficiency in evaluating a broad range of content within a limited time

frame. Multiple-choice questions are advantageous as they allow objective scoring and can effectively measure various levels of cognitive skills. To ensure a balanced assessment across different cognitive levels, the test items were constructed following the framework of Bloom's Taxonomy. This taxonomy classifies cognitive skills into six hierarchical levels: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating. By aligning test items with these categories, educators can design assessments that evaluate both lower-order thinking skills (such as recall of facts) and higher-order thinking skills (such as analysis and evaluation).

Five experts, two from the field of Economics Education and three from the field of Educational Measurement and Evaluation face-validated the tool. Additionally, the Economics Achievement Test (EAT) instrument's components underwent content validity testing utilizing the test blueprint. When Kuder-Richardson (K-B. 20) statistics were used to establish the reliability of EAT, the internal consistency index of 0.81 was obtained, demonstrating the instrument's suitability for the study.

The AFLM treatment process in the study incorporated various formative assessment strategies and feedback mechanisms to enhance Economics students' learning experiences. Prior to treatment, the pre-test was given to both the experimental and control groups. Only a few topics from the senior secondary school curriculum were covered in the course: market structures, inflation, corporate organization, price determination, the demand and supply curve, and supply and demand elasticity. While the control group was evaluated using TAM, the experimental groups received treatment for AFLM. To ensure consistent implementation of the AFLM, the

regular classroom teacher received targeted training prior to the intervention. This training encompassed the principles and practices of AFLM including the development and use of formative assessments, effective feedback mechanisms, and strategies to encourage student self-assessment and reflection.

Both the experimental and control groups were given a post-test at the conclusion of the experiment. The study topics were addressed using mean and standard deviation, and the hypotheses were assessed at the 0.05 level of significance using One Way and Two-Way Analysis of Covariance (ANCOVA) statistics. One-Way and Two-Way ANCOVA were employed to test the hypotheses at a 0.05 level of significance. ANCOVA is a blend of ANOVA and regression analysis that evaluates whether population means of a dependent variable (e.g., Economics Achievement Test scores) are equal across levels of a categorical independent variable (e.g., teaching method: AFLM vs. TAM), while controlling for the effects of other continuous variables, known as covariates.

The One-Way ANCOVA assessed the impact of the teaching method on students' academic performance, adjusting for potential pre-existing differences. The Two-Way ANCOVA further examined the interaction effect between the teaching method and another independent variable, such as gender, on academic performance, while controlling for covariates. This approach allowed for a more precise understanding of the teaching method's effectiveness by accounting for additional variables that could influence the outcome.

Results

Research Question 1: What is the mean difference between the pre-test and post-test achievement scores of students evaluated using the AFLM and those evaluated using the TAM?

Table 1

The Mean Achievement Scores of Students Evaluated Using TAM and AFLM Before and After Tests

Test		Pre-test		Post test	
Group	n	x	SD	X	SD
AFLM	36	21.17	4.16	34.72	2.74
TAM	32	20.06	4.66	20.81	3.49

Table 1 displays the mean achievement scores of students who were evaluated using the TAM and AFLM at the pre-test and post-test. Students who were evaluated using AFLM had a mean score of 21.17 with a standard deviation of 4.16 on the pre-test, according to the table. At the post-test, their score rose to 34.72 with a standard deviation of 2.74, indicating a mean gain of 13.55. A post-test score of 20.81 (± 3.49) and a pre-test score of 20.06 with a standard deviation of 4.66 were recorded by students who were evaluated using TAM. This suggests that the TAM in Economics is less successful than the AFLM. This suggests that the evaluation for learning approach was successful in raising students' economics academic performance.

Research Question 2: What is the mean difference in achievement scores of male and female students assessed with AfLM at post-test?

Table 2

Mean Achievement Scores of Male and Female Students Assessed using AFLM at Post-Test.

Gender	Post-Test		
	n	x	SD
Male	19	34.59	3.10
Female	17	34.84	2.46

Table 2 displays the average achievement scores of both male and female students who were evaluated using AFLM at the post-test level. According to the table, the mean score for male students was 34.59 with a standard deviation of 3.10, while the mean score for female students was 34.84. It may be concluded from the preceding study that the assessment for learning method (AFLM) did not result in a significant difference between the mean scores of the two sexes, with a standard deviation of 2.46.

Hypothesis One

H01: The pre-test and post-test mean achievement scores of students evaluated using the AFLM and those who were evaluated using the TAM do not differ significantly.

Table 3

One Way Analysis of Covariance (ANCOVA) Between Mean Achievement Scores of Students Assessed with AFLM and those Assessed with TAM at Post- Test.

Tests of Between-Subjects Effects					
Dependent Variable: Posttest					
Source	Type III Sum of Squares	df	Mean Squares	F	Sig.
Corrected Model	3285.598	2	1642.799	168.883	.000
Intercept	2486.972	1	2486.972	255.665	.000
Pretest	7.813	1	7.813	.803	.373
Treatments	3265.841	1	3265.841	335.734	.000
Error	632.284	6	9.727		
		5			
Total	57904.000	6			
		8			
Corrected Total	3917.882	6			
Total		7			
a. R Squared= .839 (Adjusted R Square = .834)					

Table 3 above displayed the outcome in relation to hypothesis 1. With a significance probability value of $p < 0.01$, or fewer than 0.05 alpha levels, the F-calculated value for the post-test effect is 335.73, according to Table 3's fourth row. The post-test effect is significant at the 5% level of significance ($P < 0.05$), according to this. This demonstrated a notable disparity in the two evaluation techniques about the economics proficiency of the students. In order to support the alternative hypothesis—that there is a significant difference between the mean achievement

scores of students evaluated using the AfLM and those evaluated using the TAM at the post-test—the researchers rejected the null hypothesis.

Hypothesis Two

H02: The post-test mean achievement scores of male and female students evaluated using AFLM do not differ significantly.

Table 4

Two Way Analysis of Covariance (ANCOVA) for Mean Achievement Scores of Male and Female Students Assessed with AFLM at Post-Test

Tests of Between-Subjects Effects					
Dependent Variable: Posttest					
Source	Type III Sum of Squares	df	Mean Squares	F	Sig.
Corrected Model	3332.343a	4	833.086	89.634	.000
Intercept	2439.196	1	2439.196	262.441	.000
Pretest	7.779	1	7.779	.837	.364
Treatments	3288.670	1	3288.670	353.838	.000
Gender	32.208	1	32.208	3.465	.067
Treatments* Gender	16.733	1	16.733	1.800	.184
Error	585.540	63	9.294		
Total	57904.000	68			
Corrected Total	3917.882	67			
a. R Squared= .851 (Adjusted R Square = .841)					

The sixth row of table 4 showed that the posttest gender effect's F-calculated value was 3.465 with a significant probability value of 0.067, which is higher than the 0.05 alpha threshold. This suggests that at the 5% level of significance ($P < 0.05$). Based on gender, there was no discernible difference in the students' academic attainment levels. Consequently, the researchers rejected the alternative hypothesis, which holds that there is no discernible difference between the mean achievement scores of male and female students evaluated using AfLM at the post-test, and accepted the null hypothesis.

Discussion

The findings demonstrated that the assessment for learning method (AFLM) outperforms the traditional assessment method (TAM) in Economics in terms of raising students' academic achievement. This suggests that the evaluation for learning approach was successful in raising students' economics academic performance. Additionally, the study discovered a significant difference between the mean achievement scores of students who were evaluated using the TAM and those who were evaluated using the AFLM at the post-test. This demonstrates how well AFLM affects students' academic performance in economics. The results are consistent with earlier studies such as Simon and Forgette-Giroux (2001), which showed that the thorough feedback that rubrics offer can help direct students' growth both overall and on an individual basis. Contrarily, portfolios assess a student's capacity to apply knowledge rather than just practice it, according to Light and Pierson (2013). They are crucial resources for evaluating the learning outcomes and processes of students. As a result, incorporating rubrics and a portfolio

into a learning assessment package may allow students to study while being evaluated (both for learning and for evaluation).

Additionally, this study found that the AFLM works slightly better for female students than for male students, however the difference was not statistically significant (>0.05). As a result, the mean accomplishment scores of male and female students evaluated using AFLM at the post-test do not differ significantly. According to the gender findings, students' academic performance in Economics is not significantly impacted by the moderating variable of gender. This suggests that treatment group students' academic success is not significantly predicted by their gender. This is in line with the findings of Nwagbo and Chuklu (2011) and Oludipe (2012), who concluded that there is no discernible difference between the academic performance of males and females. It is possible that the research' identical subjects and designs are the reason for the findings' observed similarity.

Conclusion

Based on the results of this study, it can be concluded that the assessment for learning approach improved students' academic performance in Economics. Compared to male students, the evaluation package works a little better with female students. This suggests that, specifically when considering the assessment for learning methods, gender has no discernible impact on students' academic performance in Economics.

Recommendations

Based on the study's findings, the following recommendations are made:

- i. Education ministries and departments should periodically host and support workshops, exhibitions, seminars, and conferences on Economics to train teachers how to implement assessment as a teaching method in the classroom using rubrics and portfolios.
- ii. Teachers should implement and make the assessment for learning method mandatory as a means of evaluating students in order to improve their academic performance and achievement in economics.
- iii. Innovative techniques of assessment should be incorporated into economics textbooks by curriculum and educational planners.

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Disclosure statement: No potential conflict of interest was reported by the authors.

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