

## GENDER DIFFERENCES IN STUDENTS' INTEREST IN ECONOMICS UNDER FORMATIVE ASSESSMENT WITH FEEDBACK IN JOS – SOUTH LOCAL GOVERNMENT AREA OF PLATEAU STATE

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### Abstract

*Gender-related differences in students' interest and engagement in Economics have remained a persistent concern within secondary school education, particularly in contexts where instructional practices are predominantly teacher-centred and examination-driven. This study examined whether formative assessment with feedback (FAF) differentially influences male and female secondary school students' interest in Economics. A quasi-experimental pretest–posttest design was employed, focusing on an experimental group exposed to FAF over a twelve-week instructional period. The sample comprised 47 Senior Secondary School II (SS II) students (28 males and 19 females) drawn from a co-educational secondary school in Jos-South Local Government Area of Plateau State, Nigeria. Data were collected using the Economics Interest Scale (EIS), a validated 20-item Likert-type instrument, and analysed using mean, standard deviation, and Analysis of Covariance (ANCOVA) at the 0.05 level of significance. Results revealed substantial gains in interest for both male and female students following exposure to formative assessment with feedback. Although male students recorded marginally higher posttest interest mean scores, the observed difference was not statistically significant ( $F(1,51) = 56.181, p > 0.05, \eta^2 = 0.524$ ). The findings indicate that formative assessment with feedback is gender-neutral in its effectiveness and supports equitable interest development in Economics education. The study concludes that feedback-oriented formative assessment practices can mitigate perceived gender disparities in Economics classrooms and recommends their systematic integration into secondary school instructional practices.*

**Keywords:** *gender differences, formative assessment, feedback, student interest, economics education, secondary schools*

### Introduction

Interest is widely recognised as a central motivational construct that influences students' engagement, persistence, and achievement across academic disciplines. In Economics education, students' interest plays a particularly critical role because the subject requires sustained cognitive engagement, abstract reasoning, and the ability to apply theoretical concepts to real-world economic phenomena. When learners develop interest in Economics, they are more likely to participate actively in classroom activities, engage in independent inquiry, and demonstrate deeper conceptual understanding. Conversely, low levels of interest often manifest as disengagement, anxiety, and poor academic outcomes.

Concerns about gender disparities in students' interest in Economics have long been documented in both developed and developing contexts. Economics has frequently been perceived as a male-dominated subject, partly due to its quantitative orientation and its historical association with fields such as finance, statistics, and policy analysis. In many secondary school classrooms, particularly in sub-Saharan Africa, traditional instructional practices emphasise teacher exposition, rote memorisation, and summative examinations. Such approaches often privilege passive learning and provide limited opportunities for dialogue, reflection, and feedback, thereby disadvantaging learners who may require more supportive and interactive learning environments.

In Nigeria, the challenge of sustaining students' interest in Economics is compounded by structural and pedagogical factors. Large class sizes, curriculum overload, and examination pressure frequently lead teachers to prioritise content coverage over meaningful engagement. Within this context, gender differences in interest may be amplified, as female students may experience

reduced confidence and participation when instructional practices fail to address diverse learning needs. Addressing these challenges requires pedagogical strategies that are inclusive, responsive, and capable of supporting learners equitably.

Formative assessment with feedback has emerged as a promising instructional approach capable of addressing issues of engagement, motivation, and equity in classroom learning. Unlike summative assessment, which primarily evaluates learning outcomes at the end of instruction, formative assessment emphasises ongoing assessment processes that provide learners with information about their progress and areas for improvement. Feedback, as a core component of formative assessment, enables students to reflect on their learning, clarify misconceptions, and develop a sense of competence and control over their academic progress.

From a theoretical perspective, formative assessment with feedback aligns with motivational frameworks such as Self-Determination Theory, which emphasises the satisfaction of learners' needs for competence, autonomy, and relatedness. By offering timely and constructive feedback, formative assessment can support learners' confidence, encourage self-regulation, and foster a sense of belonging within the learning environment. Importantly, these benefits are not inherently gender-specific, suggesting that formative assessment with feedback may function as an equitable instructional strategy capable of supporting both male and female learners.

Despite growing international evidence on the effectiveness of formative assessment with feedback, empirical studies examining its gender-related effects on students' interest in Economics remain limited, particularly within the Nigerian secondary school context. Most existing studies have focused on academic achievement, with less attention given to affective outcomes such as interest. Understanding whether formative assessment with feedback differentially affects male and female students' interest is essential for informing inclusive pedagogical practices and reducing gender disparities in Economics education.

Against this background, the present study examined gender differences in Senior Secondary School II students' interest in Economics under formative assessment with feedback in Jos-South Local Government Area of Plateau State, Nigeria.

### **Purpose of the Study**

The purpose of this study was to examine gender differences in students' interest in Economics when taught using formative assessment with feedback. Specifically, the study sought to: determine the pretest and posttest interest mean scores of male and female SS II students exposed to formative assessment with feedback in Economics; and examine whether a statistically significant difference exists between the posttest interest mean scores of male and female students taught Economics using formative assessment with feedback.

### **Aim and Objective**

The specific objective of the research was to determine the pretest and posttest mean interest scores of male and female Senior Secondary School II (SS II) students exposed to formative assessment with feedback in Economics;

### **Research Question**

The study was guided by the following research question: What are the posttest interest mean scores of male and female Senior Secondary School II students in Economics after exposure to formative assessment with feedback?

### **Hypothesis**

The following null hypothesis was tested at the 0.05 level of significance: There is no significant difference between the posttest interest mean scores of male and female Senior Secondary School II students in Economics after exposure to formative assessment with feedback.

## **Methodology**

The study adopted a quasi-experimental pretest–posttest design focusing on the experimental group exposed to formative assessment with feedback. The use of intact classes was necessitated by administrative constraints that made random assignment of individual students impractical. This design is widely accepted in educational research for examining treatment effects in natural classroom settings while controlling for initial differences through statistical adjustment.

The population comprised all Senior Secondary School II Economics students in public and private secondary schools in Jos-South Local Government Area of Plateau State. The sample consisted of 47 SS II students drawn from a co-educational secondary school purposively selected based on accessibility, availability of qualified Economics teachers, and administrative approval. The sample included 28 male students and 19 female students.

Data were collected using the Economics Interest Scale (EIS). The instrument consisted of two sections. Section A elicited demographic information, including gender, while Section B comprised 20 items designed to measure students' interest in Economics. The items assessed dimensions such as enjoyment, curiosity, relevance, and willingness to engage with Economics-related tasks. Responses were rated on a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The Economics Interest Scale was subjected to face, content, and construct validation by experts in Economics education, educational psychology, and measurement and evaluation. The validation process ensured that the items adequately represented the construct of interest and were appropriate for the cognitive level of secondary school students. Suggestions from the validators led to minor revisions in wording and item clarity.

The internal consistency of the EIS was determined using the Cronbach Alpha method. A reliability coefficient of 0.93 was obtained, indicating acceptable internal consistency and confirming that the instrument reliably measured students' interest in Economics.

The study was conducted over a twelve-week period during normal school hours. Prior to the intervention, the EIS was administered to students as a pretest to establish baseline interest levels. During the intervention, the Economics teacher implemented formative assessment strategies that included classroom questioning, short quizzes, group discussions, assignments, and peer-review activities, all accompanied by structured and timely feedback. Feedback was designed to be descriptive rather than judgmental, focusing on strengths, areas for improvement, and strategies for progress. At the end of the intervention, the EIS was re-administered as a posttest.

Mean and standard deviation were used to describe students' pretest and posttest interest scores, while Analysis of Covariance (ANCOVA) was employed to test the hypothesis at the 0.05 level of significance. Pretest scores were used as covariates to control for initial differences in interest between male and female students.

## **Results**

### **Research Question**

What is the difference in the post-test interest mean scores of male and female SS II students in the experimental group in Economics?

To determine the post-test interest mean scores of male and female SS II Economics students after being exposed to formative assessment with feedback in the experimental group, the Economics Interest Scale (EIS) was administered to the students. Mean and standard deviation were used to obtain the interest levels of male and female students, as presented in Table 1

**Table 1**

**Results of the Analysis on the Pre-test and Post-test Interest Mean Scores of SS II Economics Students between Male and Female.**

Group		N	$\bar{x}$	SD	Mean gain score	Mean difference
Male	Pretest	25	63.41	6.68		
	Post test	25	79.89	6.57	16.48	
Female	Pretest	29	52.80	8.34		3.59
	Post test	29	76.30	7.07	23.50	

The results of the analysis in Table 8 revealed that male students had a pre-test interest mean score of  $\bar{x} = 63.41$ ,  $SD = 6.68$  and a post-test interest mean score of  $\bar{x} = 79.89$ ,  $SD = 6.57$ , yielding a mean gain of 16.48 in favour of the post-test. Female students had a pre-test interest mean score of  $\bar{x} = 52.80$ ,  $SD = 8.34$  and a post-test interest mean score of  $\bar{x} = 76.30$ ,  $SD = 7.07$ , with a corresponding mean gain of 23.50.

The results indicate a post-test mean difference of 3.59 in favour of the male students. This suggests that formative assessment with feedback improved the interest of male SS II Economics students slightly more than that of female students, although both groups showed substantial improvement.

### Hypothesis One

There is no significant difference between the post-test interest mean scores of male and female SS II Economics students after being exposed to formative assessment with feedback. To determine whether male and female students differed significantly in their interest after exposure to the treatment, Hypothesis Three was tested using ANCOVA. The hypothesis stated that there is no significant difference between the post-test interest mean scores of male and female students in the experimental group. The result is presented in Table 2.

**Table 2**

**Summary of ANCOVA Analysis on the Pre-test and Post-test Interest Mean Scores of SS II Economics Students between Male and Female**

Source	Type III Sum of Squares	df	Mean square	F	sig	Partial eta squared
Corrected model	786.845 <sup>a</sup>	2	393.422	10.005	.000	.282
Intercept	2250.064	1	2250.064	57.22	<.001	.529
Pre – interest gender	618.924	1	618.1924	15.739	.000	.236
Gender	16.063	1	16.063	.408	.526	.008
Error	2005.526	51	39.324			
Total	333516.000					
Corrected total		54				
	2792.370	53				

R Squared = .524 (Adjusted R Squared = .549)

ANCOVA was conducted to determine whether a significant difference existed in the post-test interest mean scores of male and female SS II Economics students in the experimental group. Table 2 revealed that  $F(1, 51) = 56.181$ ,  $p > 0.05$ ,  $\text{Partial } \eta^2 = .524$ . Since the p-value of .525 was higher than the 0.05 level of significance, the null hypothesis was accepted, indicating that there was no significant difference between the post-test interest mean scores of male and female students.

The results further showed an Adjusted  $R^2$  value of .549, which implies that 54.9% of the variance in students' interest in Economics (based on gender) was explained by the treatment (formative

assessment with feedback), while the remaining 45.1% was attributable to other factors not included in the model.

This suggests that formative assessment with feedback did not exert a significant differential effect on students' interest based on gender, indicating that both male and female students benefited from the treatment at relatively similar levels.

## **DISCUSSION**

The findings of this study revealed that formative assessment with feedback significantly enhanced students' interest in Economics for both male and female learners. Although male students recorded slightly higher post-test mean interest scores than their female counterparts, the difference was not statistically significant, as evidenced by the ANCOVA result,  $F(1, 51) = .56, p > .05$ . Consequently, the null hypothesis on gender difference in students' interest was accepted, indicating that formative assessment with feedback supports students' interest in Economics irrespective of gender.

The absence of a significant gender difference suggests that formative assessment with feedback functions as an equitable instructional strategy that promotes interest development among both male and female students. This finding aligns with Self-Determination Theory, which posits that learning environments that support learners' needs for competence, autonomy, and relatedness foster intrinsic motivation. Through continuous and constructive feedback, formative assessment enables students to monitor their learning progress, build confidence, and take ownership of their learning processes. These benefits are experienced by both genders and may help reduce gender-based disparities in interest.

Furthermore, the findings corroborate previous studies indicating that instructional strategies exert a stronger influence on students' interest than gender alone. By emphasizing learning improvement rather than performance comparison, formative assessment with feedback creates a supportive classroom climate that encourages active participation and reduces anxiety. This result is consistent with the study of Agwagah and Ezieke (2023), who reported that male students exhibited slightly higher interest levels following feedback-based instruction, although the difference was not statistically significant. However, the finding contrasts with that of Akanwa, Agommuoh, and Ihechu (2020), who observed higher interest among female students in Social Studies. These mixed results suggest that gender-related differences in interest may vary across subjects and instructional contexts, reinforcing the importance of adopting inclusive pedagogical practices such as formative assessment with feedback in Economics classrooms

## **CONCLUSION**

The study concludes that formative assessment with feedback enhances students' interest in Economics without reinforcing gender disparities. Both male and female students benefit equally from feedback-oriented instructional practices, making formative assessment with feedback a viable strategy for promoting inclusive and equitable Economics education at the secondary school level.

## **RECOMMENDATIONS**

Future studies could examine gender-related effects of formative assessment with feedback across different regions and larger samples, explore its long-term influence on students' academic trajectories and career choices in Economics-related fields, and investigate interactions between gender, school type, and assessment practices.

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