Journal of Innovation in Educational Assessment
Vol. 8 No. 1 (2026)

DOI: https://doi.org/10.66545/je4z2w13

ISSN: 2705-3830 (Print)
ISSN: 2705-3857 (Online)

Received: 6th March, 2026
Accepted: 24th April, 2026

journal.iaiiea.org

IMPACT OF TEACHERS' PROMPT FEEDBACK ON ACADEMIC PERFORMANCE OF SENIOR SECONDARY SCHOOL II STUDENTS IN MATHEMATICS IN BENUE STATE, NIGERIA

[1]Agi C. I.*, [2]Emaikwu, S.O. &[3]Ahua, D.N.

[1 & 3]Department of Guidance and Counselling, Joseph Sarwuan Tarka University Makurdi, Benue State, Nigeria.

[2]Department of Mathematics Education, Joseph Sarwuan Tarka University Makurdi, Benue State, Nigeria.

Abstract

Education is aimed at bringing out desirable behavioural changes which may be overt or covert. These behavioural changes are the objectives of teaching/learning. To achieve this aim, a prompt feedback is required. The study is on the impact of teachers' prompt feedback on the academic performance of Senior Secondary School (SS2) students in mathematics in Nigeria. Two (2) research questions guided the study. The study adopted the quasi-experimental pre-test and post-test non-equivalent group design where 13894 senior secondary school students made up the population. Three hundred and sixty-eight SSSII students were sampled for the study using purposive and simple random sampling techniques. A mathematics achievement test was used for data collection. The Content Validity Index (CVI) was 0.70, indicating a high reliability coefficient of the instrument. Mean and standard deviation were used to answer research questions, and an independent sample t-test was used to test hypotheses. The result showed a significant difference in the mean performance of students in mathematics and gender. Therefore, it is recommended that teachers establish prompt feedback during and after lessons and consider gender differences during lesson delivery.

Keywords: Prompt feedback, academic performance and impact.

To cite this article:

Agi, C., Emaikwu, S. O., & Ahua, D. N. (2026). Impact of Teachers' Prompt Feedback on Academic Performance of Senior Secondary School II Students in Mathematics in Benue State, Nigeria. *Journal of Innovation in Educational Assessment, 8*(1),1-10. https://doi.org/10.66545/je4z2w13

* Corresponding author:

Department of Guidance and Counselling, Joseph Sarwuan Tarka University Makurdi, Benue State, Nigeria, email: ladyagi2@gmail.com

Introduction

Mathematics is the science of reasoning, computation and quantitative relationships. It involves the study of numbers, quantities, and shapes and provides tools for understanding and describing patterns and relationships in the environment (Owolabi, 2019). The Federal Republic of Nigeria (FRN, 2019) recognises mathematics as a core and compulsory subject at both primary and secondary school levels, reflecting its essential role in everyday life, national development, and technological advancement.

Mathematics is an indispensable tool for societal advancement and personal empowerment. In contemporary life, individuals who lack mathematical literacy are often limited in their ability to realise their full potential and contribute meaningfully to community and national development (Adebayo, 2020). Such individuals may experience marginalisation and become vulnerable to exploitation, as their inability to apply basic mathematical reasoning can restrict access to educational, economic, and social opportunities (Okeke & Eze, 2020). Consequently, fostering mathematical skills is essential not only for personal growth and self-actualisation but also for enabling individuals to participate fully in the technological, economic, and civic life of society.

To secondary school students who wish to further their education, mathematics is required for the understanding of concepts studied in other fields. For this reason, a minimum of a credit pass in mathematics is a requirement for admission into tertiary institutions to study any course. It is a known fact that many candidates are denied admission into higher institutions, whether their choices of study are related to mathematics or not, because of a lack of a credit pass in mathematics.

Academic performance refers to the ability of students to demonstrate the knowledge and skills they have acquired in the classroom through written assessments or oral communication (Ohanyelu, 2020). It is commonly measured by grades or marks assigned by teachers or examination bodies such as the West African Examination Council, based on predetermined standards. In senior secondary school mathematics, topics such as trigonometry and probability are particularly significant. Trigonometry enables students to understand the relationships between angles and sides of triangles, which is foundational for applications in physics, engineering and architecture, while probability equips students with the ability to assess and predict the likelihood of events, fostering critical thinking and decision-making skills relevant to statistics, finance, and risk management (Akinola & Adeyemi, 2021; Bello & Oke, 2022). Despite their relevance, studies have shown that students in Nigeria often perform poorly in these topics, reflecting gaps in understanding, ineffective teaching methods, and inadequate practice (Eze & Okeke, 2020; Musa, 2023). Performance in these areas not only reflects students' grasp of complex mathematical concepts but also indicates their preparedness to apply mathematical

reasoning in real-life and professional contexts. Evaluating students' academic performance in topics like trigonometry and probability, therefore, provides a meaningful indicator of both their cognitive development and practical problem-solving capabilities in mathematics.

The effective strategy to enhance students' interest and performance in mathematics is the provision of prompt feedback by teachers. Feedback, when timely and constructive, can significantly impact students' learning experiences and outcomes. According to Hattie and Timperley (2017), prompt feedback provides information that helps students understand their current level of performance and how they can improve. This process not only enhances learning but also increases students' interest in the subject by making their progress visible and attainable. Prompt feedback is regarded as the information available to the students which makes possible the comparison of their actual performance with some standard performance of a skill at an appointed time without delay. Furthermore, it is the process of informing students, parents and administrators regarding students' progress in the shortest possible period. For learners to change their responses, they should be furnished with some kind of awareness of their consequences; this process is called "feedback". Beard (2008) suggests that providing students with feedback on their test scores from periodic assessments can serve as instructional aids as the knowledge of their results facilitates improved learning.

Therefore, the timing of feedback should align with its purpose: to enhance learners' understanding, sustain interest, and encourage active participation. In the context of senior secondary mathematics education in Nigeria, prompt feedback is particularly crucial, as it not only guides learners' cognitive processes but also nurtures their intrinsic motivation and enthusiasm for the subject (Chukwu & Okoye, 2023).

Similarly, gender is yet another factor that can affect students' interest and learning outcomes that has generated a lot of reactions and studies. Gender roles are the roles and responsibilities of men and women in the family, society and culture. According to Yang (2010), gender refers to the social attributes and opportunities associated with being male or female as well as the relationships between women and between men. These attributes, opportunities, and relationships are socially constructed and learnt through socialisation processes.

The study adopted the Transfer of Learning Theory, which stated that learning and skills acquired in one context can influence performance in another context in the process of learning. Literature showed a significant difference with students taught with prompt feedback and without prompt feedback (Adeyemi & Ojo, 2019; Adebayo, 2017), and there is a significant gender difference in English language achievement (Abdullahi & Bichi, 2015; Adeyemi, 2021; Okonkwo, 2018). Also, Okoro (2011) maintains that male students have better English-speaking results than female students. This study, therefore, aims to identify the specific impact of prompt feedback on Students' learning outcomes in Mathematics in Nigeria The study aimed

ISSN: 2705-3830 (Print)
ISSN: 2705-3857 (Online)

at the impact of teachers' prompt feedback on the academic performance of Senior Secondary School (SSSII) students in mathematics in Nigeria. Specifically, the study:

1. Determine the effect of teachers' prompt feedback on students' academic performance in senior secondary II mathematics in Benue State.
2. Seek the mean performance scores of male and female students in mathematics who were exposed to teachers' prompt feedback.

Research Questions

The study was guided by the following research questions:

1. What is the mean performance score of students in mathematics who are exposed to teachers' prompt feedback and those that are not exposed to teachers' prompt feedback?
2. What are the mean performance scores of male and female students in mathematics who are exposed to teachers' prompt feedback?

Hypotheses

1. There is no significant difference in the mean performance scores of students in mathematics who are exposed to teachers' prompt feedback and those who are not exposed to teachers' prompt feedback.
2. There is no significant difference in the mean performance scores of male and female students in mathematics who are exposed to teachers' prompt feedback.

Method

The study adopted the quasi-experimental pre-test and post-test non-equivalent group design. The study population was 13894 senior secondary school students in Benue State. Three hundred and sixty-eight (368) SSII students were sampled for the study using purposive and simple random sampling techniques. A mathematics achievement test was used for data collection. The Content Validity Index (CVI) was 0.70, indicating a high reliability coefficient of the instrument. Mean and standard deviation were used to answer research questions, and ANCOVA was used to test hypotheses.

Results

Research question 1: What is the mean performance score of students in mathematics who are exposed to teachers' prompt feedback and those that are not exposed to teachers' prompt feedback?

Table 1

Mean Performance Score of Students in Mathematics Who Are Exposed to Teachers' Prompt Feedback and those who are not exposed to teachers' Prompt Feedback

Method	N	Pre-test		Post-test		Mean gain
		$\bar{x}$	SD	$\bar{x}$	SD	
Exposed to Teachers' Prompt Feedback	436	20.01	6.630	40.44	9.520	20.43
Not Exposed to Teachers' Prompt Feedback (Control Group)	486	19.97	6.873	23.69	11.361	16.72
Mean Difference						3.71

Fieldwork 2026

Research question two: What are the mean performance scores of male and female students in mathematics who are exposed to teachers' prompt feedback?

Research question two: What are the mean performance scores of male and female students in mathematics who are exposed to teachers' prompt feedback?

Table 2

Mean Performance Scores of Male and Female Students in Mathematics who are Expose to Teachers' Prompt Feedback

Method	N	Pre-test		Post-test		Mean gain
		$\bar{x}$	SD	$\bar{x}$	SD	
Male	200	20.75	6.947	41.82	8.870	21.07
Female	236	19.39	6.298	39.27	9.907	19.88
Mean Difference						1.19

ISSN: 2705-3830 (Print)
ISSN: 2705-3857 (Online)

Hypothesis 1: There is no significant difference in the mean performance scores of students in mathematics who are exposed to teachers' prompt feedback and those who are not exposed to teachers' prompt feedback.

Table 3

ANCOVA On Mean Performance Scores of Students in Mathematics Who Are Exposed to Teachers' Prompt Feedback and Those Who Are Not Exposed to Teachers' Prompt Feedback

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	77692.821a	2	38846.410	401.851	.000
Intercept	41079.167	1	41079.167	424.948	.000
Pretest	13189.295	1	13189.295	136.438	.000
Method	64319.397	1	64319.397	665.358	.000
Error	88838.615	919	96.669		
Total	1087760.000	922			
Corrected Total	166531.436	921			

a. R-squared = .467 (Adjusted R-squared = .465)

Hypothesis 2: There is no significant difference in the mean performance scores of male and female students in mathematics who are exposed to teachers' prompt feedback.

Table 4

ANCOVA on Mean Performance Scores of Male and Female Students in Mathematics whose are Exposed to Teachers' Prompt Feedback

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	886.508a	2	443.254	4.980	.007
Intercept	63051.742	1	63051.742	708.374	.000
Pretest	13189.295	1	13189.295	136.438	.000
Pretest exposed	183.222	1	183.222	2.058	.152
Gender	624.753	1	624.753	7.019	.008
Error	38540.942	433	89.009		
Total	752472.000	436			
Corrected Total	39427.450	435			

a. R-squared = .022 (Adjusted R-squared = .018)

Discussion

The finding of research question one and hypothesis one revealed that there is a significant difference in the mean performance scores of students who were exposed to teachers' prompt feedback and those who were not. This finding means that students who received timely, constructive, and continuous feedback on their learning progress performed better in mathematics than their counterparts who did not receive such feedback. Prompt feedback enables students to quickly identify and correct mistakes, reinforces correct responses, enhances understanding of key concepts, and boosts academic confidence. This finding is in line with Adebayo (2017), who found that prompt teacher feedback significantly enhanced students' academic performance in core subjects, mathematics inclusive. Similarly, Ogunyemi and Ojo (2019) report that students who were consistently provided with timely feedback demonstrated improved problem-solving abilities and better mastery of mathematical operations. This finding is justified by the fact that feedback serves as a metacognitive tool that enables students to reflect on their learning, monitor their progress, and adjust strategies for improved outcomes. When feedback is delayed or absent, students may continue to repeat errors without correction, leading to poor academic outcomes. On the other hand, prompt feedback fosters a supportive learning environment, helps close the gap between current and desired performance, and instills a sense of accountability and motivation to improve.

The findings on research question two and hypothesis two, in Tables 2 and 4, revealed that there is a significant difference in the performance scores of male and female students who were exposed to teachers' prompt feedback. This suggests that gender may influence how students respond to feedback mechanisms in mathematics learning. For instance, either male or female students may have benefitted more from feedback depending on factors such as confidence levels, responsiveness to correction, and classroom participation. This finding supports Okonkwo (2018), who found gender-related differences in academic performance when feedback strategies were employed. Bello and Adeyemi (2021) also noted that gender-specific learning characteristics can shape how students internalise and respond to instructional cues such as feedback. For example, females might be more reflective and cautious in correcting their mistakes, while males may be more assertive or explorative, depending on context. The justification for this finding is that social, emotional, and cognitive variables related to gender may affect feedback reception. Females may be more inclined to seek teacher validation and use feedback to guide their study practices, while males may be more self-directed but require structured feedback to avoid overconfidence or carelessness. Therefore, teachers should consider gender-responsive teaching approaches that tailor feedback to the learning needs and behavioural patterns of both male and female students.

ISSN: 2705-3830 (Print)
ISSN: 2705-3857 (Online)

Conclusion

Based on the results of this study, the prompt feedback has a significant effect on students' performance in mathematics, which showed different effect sizes on gender among secondary schools in mathematics.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Teachers should consistently provide prompt feedback to students in mathematics to enhance academic performance and sustain students' interest in the subject.
2. Education policymakers should incorporate prompt feedback techniques into the mathematics curriculum and teacher evaluation frameworks to promote best instructional practices, considering gender differences.

References

Abdullahi, I., & Bichi, A. (2015). Gender differences in students' academic performance in English language in secondary schools in Kano State, Nigeria. *Journal of Educational Research and Development,* 10(2), 45-56.

Adebayo, A. S. (2017). Effect of teacher feedback on students' academic performance in senior secondary school Mathematics. *Nigerian Journal of Educational Research and Evaluation,* 16(2), 45–53.

Adebayo, T. (2020). The role of mathematics in technological and economic development in Nigeria. Nigerian Journal of Science Education, 18(2), 45–56.

Akinola, O., & Adeyemi, T. (2021). Challenges in teaching trigonometry in senior secondary schools in *Nigeria. Journal of Science and Mathematics Education,* 19(1), 12–25.

Beard, R. (2008). Effective Teaching: A Practical Guide to Improving Your Teaching. Routledge.

Bello, M. & Oke, P. (2022). Probability education and students' problem-solving skills in Nigerian secondary schools. *International Journal of Educational Research,* 16(2), 45–58.

Dimitrov, D.M. (2002). Reliability: Arguments for Multiple Perspectives and Potential Problems with Generalization across Studies. Educational Psychological Measurement.62.5.783-801.

Eze, P. & Okeke, C. (2020). Factors affecting students' performance in mathematics in Nigerian secondary schools. *African Journal of Educational Studies*, 21(3), 67–80.

Federal Republic of Nigeria (FRN). (2019). National policy on education (7th ed.). NERDC Press.

Hattie, J. & Timperley, H. (2017). The power of feedback. University of Auckland. Review of Educational Research, 77, 81–112.

Musa, A. (2023). Mathematical reasoning and learning outcomes in trigonometry and probability among senior secondary students in Nigeria. Nigerian Journal of Mathematics Education, 25(1), 30–42.

Ogunyemi, T. A., & Ojo, R. A. (2019). Prompt feedback and students' performance in Mathematics in senior secondary schools in Ogun State. *African Journal of Educational Assessment,* 9(1), 78–86.

Okonkwo, C. A. (2018). Gender differences in the academic achievement of students in Mathematics using teacher feedback strategies in Anambra State. *Journal of Education and Practice,* 9(10), 112–118.

Ohanyelu, C. N. (2020). Augmentation of students' academic performance in mathematics through classroom management practices in Nigeria. publication at: https://www.researchgate.net/publication/352983359

ISSN: 2705-3830 (Print)
ISSN: 2705-3857 (Online)

Owolabi, R. (2019). Mathematics as a tool for problem-solving and reasoning in education. International Journal of Educational Research, 12(1), 23–34.

Okoro, A. U. (2011). Effect of interaction on achievement and interest in Biology among Secondary School Students in Enugu State Nigeria. Unpublished M.E.d Project, University of Nigeria, Nsuka. Science Education.

Yang, R. (2010). Gender Studies: *A Social Science Perspective.* Cambridge University Press.