

Assessing the impact of verbal feedback on academic performance in Mathematics and Science among Grade 6 learners in Capucan C Elementary School

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ABSTRACT

This study examines the role of verbal feedback in enhancing learners' performance in Mathematics and Science, particularly among Grade 6 learners. Verbal feedback, defined as spoken interactions that provide information about students' understanding and performance, plays a crucial role in modern educational settings. Despite its importance, challenges remain in delivering clear, consistent, and effective feedback, which may lead to confusion and hinder learning outcomes. This research aims to explore how different types of verbal feedback influence Grade 6 learners' academic performance and engagement in Mathematics and Science. Grounded in established theories such as Feedback Intervention Theory and Self-Regulated Learning, the study investigates how feedback affects students' attention, motivation, and learning behaviors. Findings suggest that structured, clear, and timely feedback contributes positively to students' learning outcomes, while poorly constructed feedback may lead to misunderstanding and reduced performance. The study emphasizes the importance of aligning feedback with students' needs and cognitive processes. Overall, the research underscores verbal feedback as an essential pedagogical tool in improving student achievement and classroom engagement.

Keywords: Verbal feedback, academic performance, Mathematics, Science, Grade 6 learners, self-regulated learning, feedback intervention theory.

Date Submitted: April 8, 2026
Date Accepted: April 15, 2026
Date Published: April 30, 2026

INTRODUCTION

Verbal feedback refers to spoken interactions that provide information about students' performance and understanding of tasks. It is widely recognized as an essential instructional tool in education, particularly in improving student learning outcomes. However, in many classroom settings, challenges persist in delivering effective verbal feedback, which may lead to confusion, reduced motivation, and limited academic improvement among learners. These challenges are especially critical in subjects such as Mathematics and Science, where learning is cumulative and new knowledge builds upon prior understanding. In such contexts, insufficient or unclear feedback may hinder learners' ability to progress effectively. Moreover,

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DOI: <http://doi.org/10.69651/PIJHSS0502975>

Recommended citation:

Peñaranda, L. E. (2026). Assessing the impact of verbal feedback on academic performance in Mathematics and Science among Grade 6 learners in Capucan C Elementary School. Pantao (The International Journal of the Humanities and Social Sciences) 5 (2), 1239-1247. <http://doi.org/10.69651/PIJHSS0502975>

with the increasing integration of digital learning tools, the shift from direct verbal feedback to automated or written feedback has raised concerns about its effectiveness in supporting student learning.

Several studies emphasize the importance of feedback in education and its role in enhancing learning processes and outcomes. Pradana et al. (2025) found that formative feedback enables teachers to assess student understanding and adjust instructional strategies accordingly. Similarly, Escultura and Mejico (2023) reported that audio feedback improves student learning experience and motivation, even if its direct effect on academic performance is limited. In a foreign context, Morris and Chikwa (2016) emphasized that constructive feedback that clearly identifies strengths and areas for improvement enhances students' ability to apply learning effectively. These findings collectively highlight the multifaceted role of feedback in shaping both cognitive and affective dimensions of learning, reinforcing its importance as a core instructional practice.

This study is anchored on three theoretical perspectives that explain the mechanisms through which verbal feedback influences learning. The Feedback Intervention Theory proposed by Kluger and DeNisi (1996) explains that feedback does not always improve performance and may sometimes hinder it depending on where it directs learners' attention. Feedback that focuses on the self may reduce performance, whereas feedback directed toward the task can improve learning outcomes. The Zone of Proximal Development introduced by Vygotsky (1995) emphasizes the importance of guided learning, suggesting that learners can perform better when assisted by a more knowledgeable other. In this context, verbal feedback serves as a form of guidance that supports learners as they move from assisted learning toward independent performance. In addition, the Feedback and Self-Regulated Learning Theory of Butler and Winne (1995) explains that learners utilize both internal and external feedback to regulate their learning, with external feedback such as verbal comments from teachers enhancing their ability to evaluate and improve their performance. Together, these theories provide a comprehensive explanation of how verbal feedback influences cognition, motivation, and academic achievement.

Guided by these theoretical foundations, the study examines the relationship between verbal feedback and academic performance among Grade 6 learners in Mathematics and Science at Capucao C Elementary School. Verbal feedback is treated as the independent variable and is characterized by forms such as positive, constructive, or mixed feedback, as well as by its timing, whether immediate or delayed. Academic performance in Mathematics and Science serves as the dependent variable, while motivation, engagement, and learning behavior are considered intervening variables that mediate the relationship between feedback and learning outcomes. This conceptualization explains how verbal feedback operates as a critical instructional mechanism that shapes student learning processes and ultimately influences academic achievement.

Statement of the problem

This study aims to determine the impact of verbal feedback on the academic performance of Grade 6 learners in Mathematics and Science at Capucao C Elementary School. Specifically, it seeks to answer:

1. How does verbal feedback (positive, constructive, mixed) affect learners' motivation and engagement?
2. How does the timing of feedback (immediate or delayed) affect academic performance?
3. What are learners' perceptions of verbal feedback in improving academic performance?
4. What intervention plan may be proposed based on the findings?

METHODOLOGY

Research design

This study employed a descriptive qualitative research design to examine the relationship between verbal feedback and the academic performance of Grade 6 learners. The design is appropriate for exploring patterns, meanings, and perceptions related to feedback practices and their influence on students' learning outcomes in Mathematics and Science.

Research locale

The study was conducted at Capucan C Elementary School, located at Purok 1, Capucan C, Ozamiz City, Misamis Occidental. It is a rural public elementary school under the Schools Division Office (SDO) of Ozamiz City.

Sampling procedure

The study utilized purposive sampling, a non-probability sampling technique where participants are selected based on their relevance to the research objectives. Slovin's formula ($n = N / 1 + Ne^2$) with a 5% margin of error was used to determine the sample size. From a population of 30 Grade 6 learners, 28 were identified as respondents.

This sampling approach was used to ensure that participants could provide rich and relevant information regarding the impact of verbal feedback on academic performance.

Research participants

The respondents of the study were 28 Grade 6 learners enrolled at Capucan C Elementary School for School Year 2025–2026. These learners were selected because they are directly exposed to verbal feedback practices in classroom instruction and are capable of providing meaningful insights into its effects on their academic performance in Mathematics and Science.

Research instruments

The study utilized a researcher-made questionnaire consisting of both close-ended (fixed-response) and open-ended questions. The instrument was designed to gather data on students' experiences and perceptions of verbal feedback and its impact on academic performance.

The questionnaire was reviewed and validated by the research adviser to ensure clarity, relevance, and alignment with the research objectives.

Data gathering procedure

Data collection followed a systematic process. First, a formal request letter was submitted to the Schools Division Superintendent of SDO Ozamiz City. Upon approval, the researchers finalized the validated questionnaire.

Second, informed consent forms were distributed to parents/guardians, and assent was obtained from the student participants. The purpose of the study was clearly explained to the respondents, emphasizing voluntary participation and confidentiality.

Third, the questionnaire was administered personally to the respondents. Adequate time was provided for completion, and the researchers were present to address clarifications.

Finally, completed questionnaires were collected, checked for completeness, and organized for thematic analysis and interpretation.

Ethical considerations

The study strictly observed ethical research standards. Approval was secured from the Schools Division Superintendent prior to data collection. Parental consent and student assent were obtained to ensure voluntary participation.

Confidentiality and anonymity of respondents were strictly maintained. Participants were not required to disclose personal identities. The researchers ensured that all responses were used solely for academic purposes.

Respect, dignity, and fairness were observed throughout the research process, and all procedures were conducted in accordance with ethical guidelines for educational research.

RESULTS AND DISCUSSION

This section presents, analyzes, and interprets the data gathered from Grade 6 learners in Capucan C Elementary School through structured close ended questionnaires and open-ended interview responses, focusing on the role of verbal feedback in Mathematics and Science. The study involved Grade 6 learners selected through purposive sampling and employed a qualitative research design to capture learners' perceptions and experiences. Data collection utilized structured questionnaires and interviews, and the responses were analyzed using thematic analysis to identify recurring patterns and themes. The discussion is grounded in the data gathered and the results are interpreted directly in relation to the objectives of the study, which sought to determine how different types and timing of verbal feedback influence learners' motivation, engagement, conceptual understanding, and overall academic performance.

The analysis of the influence of different types of verbal feedback on academic performance revealed three dominant categories, namely positive feedback, constructive feedback, and mixed feedback, each associated with distinct thematic patterns. Positive feedback was consistently linked to confidence, motivation, and encouragement, indicating that it enhances learners' self-esteem and willingness to participate actively in classroom activities. Learners reported that affirming comments increased their confidence in solving problems in Mathematics and Science, thereby fostering greater engagement. In contrast, constructive feedback was associated with awareness of mistakes and improvement, demonstrating its role in developing critical thinking and self-correction. Learners indicated that corrective feedback enabled them to identify specific errors and refine their understanding of concepts, which is essential in cumulative subjects such as Mathematics and Science. Notably, mixed feedback emerged as the most preferred type, characterized by themes of balanced learning and integration of encouragement with correction. This preference suggests that learners benefit most from feedback that simultaneously reinforces correct responses and addresses areas for improvement. These findings align with Hattie (2009), who emphasized that effective feedback must include both reinforcement and corrective elements to maximize its impact on learning. Overall, the type of feedback significantly influences both emotional engagement and cognitive development, highlighting its dual role in shaping learner outcomes.

The examination of the timing of verbal feedback further revealed its critical role in enhancing learning effectiveness. Immediate feedback was strongly associated with themes of error correction, better retention, and improved understanding, and was interpreted as the most

effective form of feedback for learning and retention. Learners reported that receiving feedback immediately after completing tasks allowed them to correct mistakes while the lesson content remained fresh, thereby strengthening conceptual understanding and memory retention. This is particularly important in Mathematics and Science, where sequential learning requires continuous reinforcement of prior knowledge. In comparison, delayed feedback was linked to reflection and partial effectiveness, with learners indicating that it was less effective due to the loss of contextual memory. The delay in feedback often resulted in difficulty recalling the reasoning behind their responses, which limited the effectiveness of corrective guidance. However, some learners expressed that the clarity of explanation played a more significant role than timing, suggesting that feedback quality remains a critical determinant of effectiveness regardless of when it is delivered. These findings support Shute (2008), who highlighted that timely feedback enhances cognitive processing and facilitates learning transfer. The results therefore demonstrate that while both timing and quality are important, immediacy provides a significant advantage in reinforcing learning.

The effects of verbal feedback on academic performance were further analyzed across cognitive, affective, and behavioral dimensions, revealing its multidimensional impact on student learning. Cognitively, verbal feedback was associated with better understanding and error correction, indicating that it improves learning accuracy by helping learners identify misconceptions and refine their knowledge. Affective responses included increased motivation and confidence, demonstrating that feedback strengthens emotional engagement and encourages learners to persist in challenging tasks. Behaviorally, learners exhibited greater participation and effort, suggesting that effective feedback promotes active learning and sustained involvement in classroom activities. These findings indicate that verbal feedback functions as a comprehensive instructional tool that influences not only academic outcomes but also learners' emotional and behavioral dispositions. However, the effectiveness of feedback was found to depend on its clarity, tone, and delivery. Clear and respectful feedback fostered positive learning behaviors and improved engagement, whereas unclear or poorly delivered feedback led to confusion and reduced effectiveness. This observation is consistent with Brookhart (2017), who emphasized that feedback is most effective when it is specific, timely, and actionable, thereby enabling learners to understand and apply the information provided.

The integrated analysis of findings underscores three central insights that collectively explain the role of verbal feedback in student learning. First, the type of feedback matters, with mixed feedback identified as the most effective due to its balanced approach that combines encouragement and correction. Second, timing is crucial, as immediate feedback leads to better learning outcomes by facilitating real time error correction and reinforcing understanding. Third, the effects of feedback are multidimensional, influencing cognitive, emotional, and behavioral aspects of learning simultaneously. These interconnected findings confirm that learning is not solely an academic process but also involves psychological and social dimensions, as supported by the theoretical perspectives of Hattie (2009), Zimmerman (2002), and Shute (2008). The results demonstrate that verbal feedback serves as a critical mechanism through which teachers can support holistic learner development.

In synthesis, the findings of this study demonstrate that verbal feedback plays a significant role in enhancing the academic performance of Grade 6 learners in Mathematics and Science at Capucao C Elementary School. Positive feedback was found to increase confidence and motivation, constructive feedback improved awareness of mistakes and facilitated learning, and mixed feedback emerged as the most preferred approach due to its balanced provision of encouragement and correction. Immediate feedback was generally perceived as more effective than delayed feedback because it allowed learners to correct errors while the lesson remained fresh, thereby improving retention and understanding. Collectively,

these results address the research objectives by establishing that both the type and timing of verbal feedback significantly influence learners' motivation, engagement, and conceptual understanding. The study contributes to the field by providing empirical support for the importance of strategically delivered verbal feedback in classroom instruction and highlights its potential to enhance both cognitive and affective learning outcomes. These insights provide a strong foundation for subsequent discussions on instructional implications and recommendations for improving feedback practices in Mathematics and Science education.

CONCLUSION

The findings of this study demonstrate that verbal feedback is a crucial instructional tool that significantly influences learners' academic performance in Mathematics and Science. The results show that verbal feedback enhances students' ability to identify errors, refine learning strategies, and build confidence through meaningful teacher and learner interaction, consistent with the assertions of Timperley and Hattie (2007). The effectiveness of verbal feedback is strongly shaped by its clarity, structure, and timing, as clear and well explained feedback promotes deeper understanding and enables immediate correction of misconceptions, thereby strengthening learning outcomes. This supports the view presented in Emotions, Technology, and Learning (2016) that clarity in feedback is essential for effective knowledge acquisition. In addition, verbal feedback functions as a mechanism for correcting misunderstandings and reinforcing key concepts, which aligns with the principles outlined by Brookhart (2017) regarding the role of feedback in guiding student learning.

The study further reveals that verbal feedback produces both cognitive and emotional effects that are integral to the learning process. Positive feedback was found to enhance learners' motivation and confidence, thereby encouraging greater engagement and participation in academic tasks. At the same time, the findings indicate that overly critical feedback may negatively affect learners' self-esteem and reduce their level of engagement, as noted by Lipnevich and Panadero (2021). These contrasting effects highlight the importance of balance in feedback delivery. Mixed feedback, which integrates encouragement with constructive guidance, emerged as the most effective approach because it supports both emotional reinforcement and cognitive development, consistent with Hattie (2009). Moreover, the timing of feedback plays a decisive role in its effectiveness, as immediate feedback is preferred by learners due to its ability to facilitate instant correction and support sequential learning processes, particularly in subjects such as Mathematics and Science. Although delayed feedback remains useful when accompanied by clear explanations, it is generally less effective because learners often struggle to recall the context of their previous responses, which limits the impact of corrective input.

Taken together, these findings confirm that verbal feedback is most effective when it is immediate, clear, and balanced between positive and constructive elements. The results underscore the need for structured feedback strategies that intentionally integrate these characteristics into classroom instruction. In response to these insights, the study emphasizes the importance of adopting student centered feedback practices that actively engage learners in the feedback process and promote independent learning. Students are encouraged to actively acknowledge and utilize verbal feedback as a guide for improving their academic performance in Mathematics and Science, to develop the ability to distinguish among different types of feedback, and to practice self-assessment as a means of strengthening their independent learning skills. At the instructional level, teachers are encouraged to provide a balanced combination of positive and constructive feedback tailored to learners' needs and performance levels, to integrate verbal feedback consistently before, during, and after lessons, and to deliver

immediate and clear feedback whenever possible to enhance retention, correction, and application of learning.

Beyond the classroom, the findings highlight the important role of parents and school administrators in supporting effective feedback practices. Parents are encouraged to foster open academic communication at home, monitor learners' study habits and responses to feedback, and maintain regular communication with teachers regarding academic progress. At the institutional level, school administrators are encouraged to implement training programs and workshops that focus on effective verbal feedback strategies, to provide adequate instructional time and resources that support meaningful feedback practices, and to strengthen collaboration among teachers, parents, learners, and school leaders to enhance feedback-based instruction. Furthermore, the study recognizes the need for continued scholarly inquiry and recommends that future researchers conduct studies with larger and more diverse samples to validate and extend the present findings, explore additional variables such as learning environment, classroom resources, and learner behavior, and investigate other forms of feedback including written, digital, and non-verbal approaches to determine their comparative effectiveness.

In synthesis, the study affirms that verbal feedback is a powerful and multidimensional instructional strategy that significantly contributes to learners' cognitive development, emotional engagement, and academic achievement in Mathematics and Science. By demonstrating that the type and timing of feedback influence learning outcomes, and by highlighting the importance of clarity and balance in feedback delivery, the study provides meaningful insights that can inform instructional practices and educational policy. These conclusions not only address the research objectives but also offer a foundation for the development of more effective feedback strategies that support holistic learner development and sustained academic success.

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