

**Relationship between parental involvement
and science achievement of Grade 6 learners**

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ABSTRACT

Science education plays a vital role in developing learners' critical thinking, problem-solving abilities, and scientific literacy necessary for academic and lifelong success. Despite the recognized importance of parental involvement in academic performance, limited studies have examined its relationship with Science achievement among Grade 6 learners in rural and semi-urban school settings such as St. Joseph College of Baggao. This study determined the relationship between parental involvement and Science achievement among Grade 6 students during the Academic Year 2025–2026. Using a descriptive-correlational research design, data were gathered from 44 Grade 6 students through a researcher-made questionnaire. Statistical tools used included percentage, weighted mean, ranking, and t-test. Findings revealed that parental involvement in terms of home support, encouragement and motivation, and school-related participation was consistently high. However, students still encountered moderately serious school-related challenges, particularly in lesson pacing and limited hands-on Science activities. The study also found no significant difference in perceptions of parental involvement when respondents were grouped according to sex. Overall, the findings suggest that strong parental involvement is positively associated with improved Science learning and academic performance.

Keywords: Parental involvement, Science achievement, Grade 6 learners, Science education, home-school partnership.

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INTRODUCTION

Science education is a foundational component of basic education, equipping learners with essential knowledge, skills, and attitudes needed to understand the world and make informed decisions. At the elementary level, particularly in Grade 6, students are introduced to more complex scientific concepts and processes that prepare them for secondary education and beyond. At this stage, learners' ability to comprehend and apply scientific knowledge is critical, as it influences their future academic trajectories and career choices in Science, Technology, Engineering, and Mathematics (STEM) fields (National Science Teaching Association [NSTA], 2018).

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In the Philippine context, Science education is a core subject in the K to 12 curriculums aimed at fostering scientific literacy among learners. However, the academic performance of Filipino students in Science remains a concern. Results from national assessments such as the National Achievement Test (NAT) and international evaluations like the Programme for International Student Assessment (PISA) have consistently shown low proficiency levels in Science among elementary and high school students. These outcomes prompt deeper investigation into the various factors influencing Science learning outcomes, including the often-overlooked role of parental involvement (Department of Education [DepEd], 2020).

Parental involvement refers to parents' engagement in their children's educational activities both at home and in school. This involvement may take many forms, such as assisting with homework, attending parent-teacher conferences, providing educational materials, monitoring school performance, and encouraging positive attitudes toward learning. Epstein (2001) emphasized that effective family-school partnerships positively influence students' academic achievement and attitudes toward learning. Likewise, Jeynes (2011) found that meaningful parental engagement significantly improves students' academic performance, motivation, and self-regulation. Although parental involvement has been widely studied in subjects such as reading and mathematics, there remains a gap in understanding how it affects Science achievement, especially in rural or semi-urban settings like Baggao, Cagayan.

St. Joseph College of Baggao, a private educational institution in the municipality of Baggao, provides quality education rooted in Catholic values. As part of its mission to nurture well-rounded learners, the school emphasizes academic excellence, including in the field of Science. However, despite institutional efforts, some Grade 6 students still struggle to attain the desired proficiency levels in Science. This situation calls for a closer examination of external support systems—chiefly, the involvement of parents in reinforcing Science learning beyond the classroom.

The nature and extent of parental involvement vary depending on socioeconomic status, parents' educational attainment, availability of resources, and cultural beliefs about education. In some households, Science education may not receive the same level of attention as other subjects because of its perceived difficulty or the parents' limited understanding of the subject. Additionally, time constraints and economic challenges may hinder parents from actively participating in their children's Science education. Conversely, learners whose parents show strong interest in their academic progress and allocate time for educational support tend to perform better. Bodovski and Farkas (2008) noted that children whose parents engage in Science-related discussions and provide Science learning materials at home are more likely to demonstrate higher interest and achievement in Science. Similarly, Bernardo (2014) observed that Filipino learners with stronger parental support generally perform better in Science and Mathematics subjects. Hence, it is essential to determine the prevailing level of parental involvement in St. Joseph College of Baggao and assess whether this correlates with students' performance in Science.

This study stems from the need to identify effective ways of enhancing Science education through collaborative efforts between schools and families. By understanding the impact of parental involvement on Science achievement, the school may develop targeted strategies to encourage and guide parents in supporting their children's learning. Such initiatives may include parent education seminars, take-home learning kits, and home-school communication platforms focused on Science education. According to Henderson and Mapp (2002), effective family-school partnerships are associated with higher academic achievement, improved behavior, and better long-term educational outcomes. The findings of this research may also help foster a culture of shared responsibility for academic success, where parents become active stakeholders in the learning process.

Ultimately, strengthening parental engagement in Science education aligns with the broader educational goal of producing scientifically literate individuals who can think critically, solve problems, and contribute meaningfully to society. As Science continues to shape modern life, from health and the environment to technology, it becomes increasingly important for learners to receive support not only from schools but also from their homes. Guernsey (2015) stressed that children benefit significantly when parents engage them in hands-on Science activities and inquiry-based discussions at home. Hence, this study explores a timely and relevant issue that directly affects student achievement and school effectiveness.

In summary, this research seeks to bridge the gap between home and school by examining how parental involvement influences the Science achievement of Grade 6 students at St. Joseph College of Baggao. The study hopes to provide evidence-based insights that will inform academic practices and parental engagement initiatives, thereby contributing to improved learning outcomes in Science.

Statement of the problem

This study aimed to determine the relationship of parental involvement to the Science achievement of Grade 6 students at St. Joseph College of Baggao. Specifically, the study sought to answer the following questions:

1. What is the profile of the respondents in terms of age, sex, and number of siblings?
2. What is the level of parental involvement in the Science education of Grade 6 students in terms of home-based academic support, encouragement and motivation, and school-based involvement?
3. What problems are encountered by Grade 6 students in Science education in relation to the school dimension?
4. Is there a significant difference in the respondents' perceptions of parental involvement in Science education when grouped according to their selected profile variables?

METHODOLOGY

This study utilized a descriptive-correlational research design to determine the relationship between parental involvement and the Science achievement of Grade 6 students at St. Joseph College of Baggao, a private Catholic educational institution in Baggao, Cagayan. The descriptive component assessed the level of parental involvement and the school-related problems encountered in Science education, while the correlational component examined the relationship between parental involvement and students' Science performance.

The respondents of the study consisted of all 44 Grade 6 students enrolled at St. Joseph College of Baggao during the academic year 2025–2026. A researcher-made questionnaire served as the primary data-gathering instrument. The instrument included items on respondents' profile, parental involvement in Science education, and problems encountered in Science learning within the school setting. Students' Science achievement data were obtained from official class records, particularly their final Science grades. The questionnaire underwent validation by experts in Science education and research methodology and was pilot-tested to ensure reliability and clarity.

Data gathering was conducted after securing approval from the school principal and consent from parents. The questionnaires were administered in the classroom with the assistance of the class adviser, and all responses were treated with confidentiality.

The statistical tools used in the study included percentage to determine the profile distribution of respondents, weighted mean to measure the level of parental involvement and the seriousness of problems encountered in Science education, ranking to identify the most and least observed indicators, and t-test to determine significant differences in the respondents' perceptions when grouped according to profile variables. The .05 level of significance was used in testing the hypothesis of the study.

RESULTS AND DISCUSSION

The study involved 44 Grade 6 students of St. Joseph College of Baggao, composed of 24 females or 54.55% and 20 males or 45.45%. Most respondents were 12 years old or 34.09%, followed by those aged 11 years old or 31.82%, indicating that the learners were generally within the expected developmental stage for Grade 6. This supports Piaget's view that learners at this age begin to develop logical and abstract thinking, which is essential in Science learning. In terms of number of siblings, most respondents had two siblings or 43.18%, suggesting that many came from relatively small families where parental attention and resources may be more manageable. This supports Blake's resource dilution theory, which explains that parental time, money, and attention may decrease as the number of children increases.

On parental support at home, both female and male respondents strongly agreed that their parents supported them in Science, with average weighted means of 4.45 and 4.58, respectively. The strongest support was seen in parents' assistance when students had difficulty understanding Science topics. This implies that parents play an active instructional support role at home, not merely by monitoring schoolwork but by helping learners comprehend difficult lessons. This finding affirms Jeynes' (2011) claim that meaningful parental involvement positively affects academic achievement, and Bodovski and Farkas' (2008) view that Science-related support and learning materials at home improve learners' engagement and performance.

In terms of encouragement and motivation, female respondents obtained an average weighted mean of 4.63, while male respondents obtained 4.66, both interpreted as strongly agree. This shows that parents consistently encouraged their children to perform well in Science, praised their achievements, and showed interest in their Science activities. The result suggests that parental motivation strengthens students' confidence, persistence, and positive attitude toward Science. This supports Fan and Chen (2001), who emphasized that parental encouragement and high expectations are strong predictors of academic success, and Ramos (2018), who found that Filipino learners whose parents show interest in their Science projects tend to demonstrate higher enthusiasm and achievement.

For school involvement and communication, the respondents also reported strong parental participation, with average weighted means of 4.56 for females and 4.77 for males. Parents were perceived to follow up on Science grades, communicate with teachers, participate in Science-related activities, and remain aware of current lessons. This indicates a strong home-school partnership that reinforces Science learning beyond classroom instruction. Epstein (2001) stressed that communication, volunteering, and school-based involvement strengthen student outcomes, while Topor et al. (2010) found that parent-teacher communication improves motivation and achievement.

Despite the strong parental involvement, students identified school-related problems in Science education as moderately serious, with average weighted means of 3.57 for females and 3.71 for males. The most serious concerns included fast pacing of Science lessons, lack of conducive classroom setup for experiments, and insufficient hands-on or practical activities. These findings suggest that even with strong home support, Science achievement may still be affected by instructional and environmental limitations in school. Hofstein and Lunetta (2004) emphasized that hands-on activities and conducive laboratory environments are essential for

inquiry, critical thinking, and deeper scientific understanding. Martinez (2020) and Dizon (2017) similarly noted that inadequate facilities, interruptions, and poorly paced lessons may hinder Science learning.

The t-test results showed no significant difference between male and female respondents in their perceptions of parental support at home, encouragement and motivation, and school involvement and communication. For parental support at home, the computed t-value was -1.217, which was lower than the critical value of 2.7764. For encouragement and motivation, the computed t-value was -0.155, also lower than 2.7764. For school involvement and communication, the computed t-value was -2.556, likewise lower than 2.7764. These results indicate that parental involvement was generally experienced equally by both male and female students. Therefore, differences in Science achievement may be attributed less to sex-based differences in parental support and more to other factors such as instructional quality, school resources, learner motivation, and availability of practical Science experiences.

CONCLUSION

The study revealed that most Grade 6 students of St. Joseph College of Baggao belong to the expected age range for their grade level, with male and female respondents being relatively balanced in number. Most learners also come from small-sized families, which may allow parents to provide closer supervision and more focused academic support at home. These conditions suggest that the learners are generally in a favorable situation for Science learning and development.

The findings further showed that parental involvement in Science education remains consistently high in terms of home support, encouragement and motivation, and school-related participation. Parents actively assist their children in reviewing lessons, providing learning materials, and creating environments that support study habits. They also motivate their children through encouragement, recognition, and active interest in school tasks and projects. In addition, many parents maintain communication with teachers and participate in school activities, demonstrating their commitment to their children's academic growth.

Despite this strong parental involvement, students still experience moderately serious challenges related to the school environment. These difficulties include limited opportunities for hands-on Science activities, classroom conditions that are not always conducive to learning, and lessons that are sometimes delivered at a pace difficult for learners to follow. These findings indicate that while parental support significantly contributes to Science learning, school-based instructional and environmental concerns continue to affect students' learning experiences and achievement.

The study likewise established that there is no significant difference between male and female students in their perceptions of parental involvement. This implies that parents generally provide equal support and encouragement to their children regardless of sex, promoting fairness and inclusivity in Science education.

In general, the study affirms that parental involvement remains a vital factor in strengthening students' Science achievement and learning motivation. However, meaningful improvement in Science education also requires stronger support from the school. Parents should continue guiding and motivating their children at home while encouraging them to explore Science beyond classroom discussions. Teachers, on the other hand, need to adopt more learner-centered and practical teaching strategies, simplify difficult concepts, and provide opportunities for hands-on activities that make learning more engaging and understandable. School administrators may further enhance Science learning by improving classroom facilities,

expanding access to instructional resources, and organizing activities that strengthen collaboration between the school and families. Students themselves must also take an active role in maximizing the support given to them by developing positive study habits, participating in Science-related activities, and showing curiosity toward learning. Future researchers may build on this study by exploring other dimensions of parental involvement and conducting similar investigations in different contexts to deepen understanding of home-school partnerships in Science education.

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