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The Impact of Students' Attitude Towards Science on the Academic Performance

Rocel Joy T. Lagaran[1], Mia Grace G. Casimiro[2], Angel J. Banquicio[3], Angel S. Banaan[4], Marc Lawrence M. Sugabo[5], James Brylle A. Oliveros[6], Romulo L. Bais Jr.[7], Hernani P. Esperat[8],Jay-Al Rico[9] Joebelle N. Dela Merced[10], Shaira Mae A. Maghanoy[11]

[1-10]Department of Education, Buenavista Integrated School, Zamboanga City, Philippines
[11]Department of Education, Zamboanga City High School-Main, Zamboanga City, Philippines

Corresponding Author email: roceljoylagaran@gmail.com

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Abstract. This study examined the impact of students' attitudes toward science on their academic performance among Junior High School students at Buenavista Integrated School, Zamboanga City, Philippines, during the School Year 2025–2026. Specifically, the study assessed students' attitudes toward science in terms of social implications, learning interest, and school resources, and determined whether these attitudes were significantly related to their academic performance in science. A quantitative descriptive–correlational research design was employed. Data were collected from 120 junior high school students using a validated questionnaire measured through a four-point Likert scale, while students' academic performance was obtained from their second-quarter science grades. Descriptive statistics, including mean and standard deviation, were used to determine the level of students' attitudes toward science and academic performance, and Pearson's correlation coefficient was applied to examine the relationship between the variables. Results revealed that students demonstrated a moderately positive attitude toward science across all indicators, with social implications obtaining the highest mean (M = 2.90), followed by learning interest (M = 2.86) and school resources (M = 2.77). The overall attitude toward science was interpreted as moderately impacted (M = 2.84). Meanwhile, students' academic performance in science was satisfactory, with a mean grade of 83.11 (SD = 4.88). However, the correlation analysis indicated no statistically significant relationship between students' attitudes toward science and their academic performance ($r = -0.108$, $p = 0.292$). These findings suggest that while students generally hold positive attitudes toward science, such attitudes alone do not strongly predict academic achievement. Other factors, including teaching strategies, instructional quality, and availability of learning resources, may play a more substantial role in influencing students' academic outcomes in science education.

Keywords: academic performance, learning interest, school resources, social implication, Students attitude towards science

Introduction

Students' attitudes toward science are influenced by several factors, including social relevance, learning interest, and the availability of school resources. Research indicates that helping students understand the real-world applications of science can positively shape their attitudes and perceived usefulness of the subject (Bicer & Lee, 2020). Understanding students' attitudes is essential in developing effective teaching strategies, as learning experiences and teacher competence play a significant role in shaping students' views toward science (Halim et al., 2020). Science education aims not only to develop scientific knowledge but also to foster positive attitudes and sustained interest in science-related fields. For

the past several decades, students' attitudes toward science have been a major focus of science education research, emphasizing their importance in effective science instruction (Toma, Greca, & Gómez, 2020).

Academic performance is a complex outcome that includes not only grades but also students' classroom behavior, participation, and understanding of learned concepts. Grades remain a primary indicator of academic success and are often used for academic recognition and progression (Guterman, 2021). However, academic performance is also influenced by external factors such as teaching strategies, classroom environment, and teacher-student relationships (Brew et al., 2021).

Several studies suggest that students' attitudes toward science are significantly related to their academic performance. Positive attitudes have been associated with higher achievement, increased motivation, and stronger critical thinking skills (Ahmad et al., 2022). In the Philippine context, changes brought by the K–12 science curriculum have shifted instruction toward inquiry-based and exploratory approaches, which aim to enhance students' critical thinking and engagement in science learning (Pedrona, 2020).

Despite extensive research, there remains a gap in studies examining how students' attitudes specifically influence academic performance at the junior high school level. Thus, this study aimed to examine students' attitudes toward science and their relationship with academic performance among junior high school students at Buenavista Integrated School, providing insights that may help improve science instruction and learning outcomes.

Research Questions

This study aimed to determine the impact of students' attitude towards science on student's academic performance for the school year 2025-2026.

Specifically, it seeks to answer the following questions:

1. What is the level of students' attitude towards science among junior high school students in terms of;
   1.1 Social Implications
   1.2 Learning Interest
   1.3 School Resources
2. What is the level of student's academic performance in Science Subject?
3. Does Students' Attitude Towards Science have a significant relationship with Academic Performance?

Scope and Delimitation of the Study

This study examined the impact of students' attitudes toward science in terms of social implications, learning interest, and school resources, as well as their academic performance based on their general weighted average during the school year 2025–2026. The study was conducted at Buenavista Integrated School, Zamboanga City Division, and involved students from the Junior High School Department. The participating sections were coded as A, B, C, and D. The focus of the study was on students' attitudes toward science as the main area of investigation.

Literature Review

Students' Attitude Towards Science

Students' attitudes toward science are generally positive and are significantly linked to academic performance, science literacy, and engagement. Research consistently shows a moderate positive relationship between science attitude, self-efficacy, interest, and achievement, while science anxiety is associated with lower performance (Mao et al., 2021; Weda et al., 2018). Practical activities, laboratory experiences, and student-centered approaches such as inquiry-based, project-based, cooperative, and technology-supported learning effectively foster positive attitudes toward science (Savelsbergh et al., 2016; Aguilera & Perales-Palacios, 2020). In the Philippine context, studies indicate that although students often exhibit positive attitudes, these do not always result in strong science process skills or high academic performance due to factors such as anxiety, limited resources, passive learning, and socioeconomic constraints (Manguil, 2025; Palines & Dela Cruz, 2021). Large-scale assessments like PISA and TIMSS further show that students who value science and perceive it as relevant tend to perform better academically (Chi et al., 2017; Wang & Liou, 2017). Overall, the literature highlights the importance of enhancing positive emotional engagement, reducing anxiety, improving teaching strategies, and strengthening school resources to improve science learning outcomes.

Social Implication

Recent studies show that global and local challenges like inequality, economic insecurity, and rapid digitalization have significant social implications. The COVID-19 pandemic worsened these issues, affecting vulnerable groups such as students, low-skilled workers, and women (United Nations, 2025). Education and social interaction, including study-abroad experiences and collaborative learning, promote social inclusion,

empathy, and intercultural understanding (Taniguchi, Takai, & Iwaki, 2025; UNESCO, 2020). However, social media has mixed effects on students' learning, communication, and social connections (Chowdhury, 2025). In the Philippines, social dynamics are influenced by human rights concerns, economic inequality, and a young, digitally connected population, with disparities affecting access to education and social services (World Bank, 2025). While social media supports civic engagement and youth interaction, it also raises issues of misinformation and social fragmentation (Meltwater, 2025; Belmonte, 2024). These studies highlight the need for inclusive education, equitable policies, and responsible digital engagement to address social challenges.

Learning Interest

Learning interest is key to students' motivation, engagement, and academic success. Connecting lessons to real-world topics, such as the Sustainable Development Goals, and focusing on STEM fields increases interest and motivation (Adams & Nakano, 2024; Agarwal, 2025). Developing future-ready skills like critical thinking, problem-solving, and digital literacy further supports lifelong learning (OECD, 2024). Research shows that meaningful content, culturally relevant teaching, collaboration, and technology use enhance learning interest, while limited resources, poor facilities, and low parental support reduce it (Pires, 2024; Malaya & Panganiban, 2021; Dela Cruz, 2020). Local studies confirm that students with higher interest and supportive conditions perform better academically (Tirol et al., 2025; Bernardo et al., 2023). Digital tools and learner-centered approaches, especially during the pandemic, also improve engagement and learning interest (Talosa et al., 2021; Adarlo et al., 2022). Overall, fostering learning interest is essential for academic success and meaningful educational experiences.

School Resources

School resources—including physical infrastructure, learning materials, technology, and teacher competence—play a crucial role in enhancing student engagement, academic performance, and overall well-being. Adequate classrooms, laboratories, digital tools, and internet connectivity support hands-on learning, collaborative activities, and access to diverse educational content (Cruz & Santos, 2023; Reyes et al., 2024; Elearning Industry, 2025). Teacher competence, effective leadership, and community partnerships further improve the utilization of school resources and contribute to better learning outcomes (Manalo, 2025; Idris, 2025; Cortes, 2024). The adoption of emerging technologies, AI-driven personalized learning platforms, and hybrid learning models enables more flexible and inclusive education while promoting student-centered approaches (McKinsey, 2024; ISC Research, 2024). Investments in sustainable and eco-friendly school operations, along with globally recognized curricula, also support equity, mobility, and quality in education (UN SDGs, 2024; UNESCO, 2024). However, despite these advances, disparities remain in rural and low-income areas, where limited access to laboratories, learning materials, and reliable internet continues to hinder student achievement and engagement (Abareta & Prudante, 2025; Rivera, 2024; World Bank, 2025). Overall, ensuring adequate, equitable, and well-managed school resources is essential for creating conducive learning environments, improving academic outcomes, and preparing students for future skills and global competencies.

Academic Performance

Academic performance is influenced by multiple factors, including study habits, motivation, socio-emotional resilience, learning environment, and school resources. Effective strategies such as time management, goal setting, note-taking, and self-assessment are positively associated with higher achievement across contexts (Safi, 2025; Alhassan, 2025; Dela Peña & Ramos, 2023). Motivation, positive emotional states, and supportive classroom environments also enhance student outcomes, while challenges like personal, social, and academic transitions can hinder performance (Gonzáles-Arias et al., 2025; Al-Tameemi et al., 2023; Lopez, 2025). In the Philippine context, students' motivation, learning interest, teacher quality, school resources, and parental support are key predictors of academic success, particularly in science, though socio-economic disparities limit access to resources and affect achievement (Tirol et al., 2025; Bernardo et al., 2023; Malaya & Panganiban, 2021; Rivera, 2024; DepEd, 2025). Large-scale assessments, such as PISA 2022, indicate that Filipino students continue to face challenges in science education, scoring below the OECD average (OECD, 2022). Overall, research highlights that fostering disciplined study habits, intrinsic motivation, resilient coping, and equitable learning environments are essential for improving students' academic performance (Cruz et al., 2024; Carroza-Pacheco et al., 2025; Velasco & Mendoza, 2024).

Methodology

Research Design

This study used a descriptive-correlational research design to examine the impact of students' attitudes toward science on the academic performance of Junior High School learners at Buenavista Integrated School. A descriptive-correlational design identifies relationships between variables without

manipulating them (Barooah, 2025). Data were collected using survey questionnaires, which are structured tools for gathering information from respondents (McLeod, 2023). Statistical methods were applied to analyze the strength and direction of relationships between variables (Field, 2018). Ethical considerations, including informed consent, confidentiality, and voluntary participation, were strictly observed in accordance with APA guidelines (APA, 2020).

Sampling Design

This study used both probability and non-probability sampling, specifically purposive and stratified random sampling. Purposive sampling was used to select Junior High School learners at Buenavista Integrated School who met the specific criteria relevant to the study, focusing on their attitudes toward science and academic performance. Stratified random sampling divided the population into subgroups, such as grade level and section, ensuring all groups were represented. Combining these methods allowed for a more comprehensive analysis of how factors like social implications, learning interest, and school resources affect students' academic performance.

Research Locale

This study was conducted at Buenavista Integrated School during the 2025–2026 school year, focusing on Junior High School students taking science subjects. The school was chosen due to its significant population of students engaged in science, making it an ideal site to examine how students' attitudes toward science influence their academic performance. The study aims to explore the relationship between students' attitudes and their achievement in science, providing insight into factors that affect learning outcomes in this context.

Research Participants

This study included all students in the Junior High School Department of Buenavista Integrated School. The total population of student-respondents was 601 across four grade levels. The largest number of students (221) was in Grade 7, while the smallest number (108) was in Grade 10. A sample of 120 students, representing approximately 20% of the total population, was selected based on Gay's (1976) recommendation for determining sample size.

Research Instrument

The research instrument used in this study was a questionnaire entitled "The Impact of Students' Attitude Towards Science on Academic Performance." It consisted of two parts: Part I assessed students' attitudes toward science in terms of social implications, learning interest, and school resources, while Part II focused on their academic performance. Responses were measured using a 4-point Likert scale: 4 = Strongly Agree, 3 = Agree, 2 = Disagree, and 1 = Strongly Disagree. The study was conducted with permission from the research teacher and in compliance with the Data Privacy Act of 2012 (Philippines).

Data Gathering Procedure

The researcher began by securing approval from the Research Adviser and permission from the school principal to conduct the study at Buenavista Integrated School, Junior High School Department. After submitting all required documents, including consent forms and the survey questionnaire, the researcher recruited respondents who met the study criteria and conducted face-to-face surveys at convenient times, providing clear instructions and addressing any questions. Informed consent was obtained from all participants, emphasizing voluntary participation and confidentiality. Data were analyzed using percentages to highlight key factors influencing students' attitudes toward science, weighted mean to determine levels of attitude in terms of social implications, learning interest, and school resources, and Pearson correlation to examine the relationship between students' attitudes and academic performance.

Results and Discussions

Problem 1: What is the level of Students' Attitude Towards Science in terms of Social Implication, Learning Interest, and School Resources?

Table 1: Level of Students' Attitude Towards Science in terms of Social Implication

Statements	Mean	Standard Deviation	Verbal Description	Interpretation
1. Science is important for making decisions in the society.	3.19	.39	Agree	Moderately Impacted
2. Science can solve environmental problems in the community.	3.15	.58	Agree	Moderately Impacted

3.	Learning Science does not help me understand real-world problems.	2.24	.67	Disagree	Fairly impacted
4.	Science has an impact on improving people's lives.	2.98	.68	Agree	Moderately Impacted
5.	Science doesn't make me aware of issues in my community.	2.53	.80	Agree	Moderately Impacted
6.	What I learn in science matters in my society.	3.09	.57	Agree	Moderately Impacted
7.	Learning science helps me contribute to the society.	3.11	.59	Agree	Moderately Impacted
8.	Science is useful in addressing social issues.	3.10	.63	Agree	Moderately Impacted
9.	Understanding science helps me become a better student.	3.23	.63	Agree	Moderately Impacted
10.	Science has no effect on people's daily activities.	2.36	.84	Agree	Moderately Impacted
	Over-all Mean	**2.90**	**.55**	**Agree**	**Moderately Impacted**

Table 1 presents the level of students' attitude towards science in terms of social implication. The results show that the highest mean score was obtained by the statement "Understanding science helps me become a better student" with a mean of 3.23 and a standard deviation of 0.63, followed by "Science is important for making decisions in society" with a mean of 3.19 and a standard deviation of 0.39. Both statements were verbally described as "Agree" and interpreted as "Moderately Impacted," indicating that students recognize the importance of science in improving academic performance and supporting informed decision-making. On the other hand, the lowest mean score was recorded for the statement "Learning science does not help me understand real-world problems" with a mean of 2.24 and a standard deviation of 0.67, which was verbally described as "Disagree" and interpreted as "Fairly Impacted." This implies that students generally believe science helps them understand real-life situations, although some may still find it challenging to fully relate science lessons to real-world applications.

Table 2: Level of Student's Level of Students' Attitude Towards Science in terms of Learning Interest

	Statements	Mean	Standard Deviation	Verbal Description	Interpretation
1.	I find science classes interesting.	3.23	.58	Agree	Moderately Impacted
2.	I enjoy learning about science topics	3.16	.58	Agree	Moderately Impacted
3.	Science is my favorite subject.	2.79	.73	Agree	Moderately impacted
4.	I do not look forward to science classes.	2.26	.80	Disagree	Fairly Impacted
5.	I like doing science experiments.	3.07	.69	Agree	Moderately Impacted
6.	Science lesson is not boring.	3.05	.56	Agree	Moderately Impacted
7.	I enjoy learning new science topics.	3.01	.61	Agree	Moderately Impacted
8.	I avoid studying science when I can.	2.41	.88	Agree	Moderately Impacted
9.	Science lessons make me curious to know more.	3.13	.61	Agree	Moderately Impacted
10.	I lose interest easily during science discussions.	2.45	.82	Agree	Moderately Impacted
	Over-all Mean	**2.86**	**.69**	**Agree**	**Moderately Impacted**

Table 2 presents the level of students' attitude towards science in terms of learning interest. The findings show that the highest mean score was obtained by the statement "I find science classes interesting" with a mean of 3.23 and a standard deviation of 0.58, followed by "I enjoy learning about science topics" with a mean of 3.16 and a standard deviation of 0.58. Both statements were verbally described as "Agreed" and interpreted as "Moderately Impacted," indicating that students generally find science engaging and enjoyable. In contrast, the lowest mean score was recorded for the statement "I do not look forward to science classes" with a mean of 2.26 and a standard deviation of 0.80, which was verbally described as "Disagree" and interpreted as "Fairly Impacted." This suggests that most students look forward to science classes and maintain a positive learning interest, although further improvement in teaching strategies may help sustain and strengthen student engagement**.**

Table 3: **Level of Students' Attitude Towards Science in terms of School Resources**

	Statements	Mean	Standard Deviation	Verbal Description	Interpretation
1.	My school does not have enough science books	2.43	.82	Agree	Moderately Impacted
2.	Science classes in my school have science laboratory tools.	2.77	.79	Agree	Moderately Impacted
3.	The science subject in my school does not use lab.	2.47	.77	Disagree	Fairly impacted
4.	My teacher uses good resources to teach science.	3.08	.66	Agree	Moderately Impacted
5.	My school supports science learning through technology.	3.04	.62	Agree	Moderately Impacted
6.	The science books in my school are updated.	2.88	.63	Agree	Moderately Impacted
7.	Science equipment in my school is easy to use	2.77	.71	Agree	Moderately Impacted
8.	Technology for learning science is limited in my school.	2.68	.69	Agree	Moderately Impacted
9.	I have access to the science resources I need	2.73	.81	Agree	Moderately Impacted
10.	I often struggle to get the science materials I need.	2.85	.70	Agree	Moderately Impacted
	Over-all Mean	**2.77**	**.72**	**Agree**	**Moderately Impacted**

Table 3 presents the level of Students' Attitude Towards Science in terms of School Resources. The results showed that the highest mean score was obtained by the statement **"**My teacher uses good resources to teach science" with a mean of 3.08 and a standard deviation of .66, followed by the statement "My school supports science learning through technology" with a mean of 3.04 and a standard deviation of .62, both verbally described as "Agreed" and interpreted as "Moderately Impacted." This implies that the availability and proper use of teaching resources and educational technology positively influence students' attitudes toward science, making them more engaged, motivated, and confident in learning scientific concepts. On the other hand, the lowest mean score was recorded for the statement "My school does not have enough science books" with a mean of 2.43 and a standard deviation of .82, verbally described as "Disagreed" and interpreted as "Fairly Impacted." This suggests that while students do not perceive a serious shortage of textbooks, access to printed materials still affects their understanding and confidence in science. Overall, these findings indicate that adequate school resources, including teaching materials and technology, are essential in supporting students' positive attitude toward science, as supported by previous studies (Rabanes & Paglinawan, 2025; Teachers Institute, 2023; OECD, 2022; Mullis et al., 2019; UNESCO, 2021; International Journal of Research and Innovation in Social Science, 2025).

Table 4: Summary of the levels of Students' Attitude Towards Science in Buenavista Integrated School

Indicators	Mean	Interpretation
Social Implication	2.90	Moderately impacted
Learning Interest	2.86	Moderately impacted
School Resources	2.77	Moderately impacted
Over-All Mean	**2.84**	**Moderately Impacted**

Table 4 presents the summary of the levels of students' attitude towards science in Buenavista Integrated School. The findings show that Social Implication obtained a mean of 2.90, Learning Interest a mean of 2.86, and School Resources a mean of 2.77, all verbally described as "Agreed" and interpreted as "Moderately Impacted." The overall mean of 2.84 indicates that students generally hold a moderately positive attitude toward science. This suggests that learners recognize the relevance of science to society and show a fair level of interest in learning the subject. However, the relatively lower mean score for School Resources implies that limitations in facilities, materials, and learning support may affect students' engagement and appreciation of science. Overall, while students demonstrate a reasonable inclination toward science, the results indicate a need for improved learning resources and instructional support to further strengthen students' attitudes and enhance science learning experiences.

Problem 2: What is the level of student's academic performance in Science Subject?

Table 5: Second Quarter, School Year 2025-2026

Indicator	Mean	Standard Deviation	Verbal Description
Second Quarter Science Grade	83.11	4.88	Satisfactory

Table 5 presents the level of students' academic performance in Science during the Second Quarter. The results showed a mean grade of 83.11 with a standard deviation of 4.88, verbally described as "Satisfactory." This indicates that, on average, students met the expected learning competencies and demonstrated an adequate understanding of scientific concepts and skills. The findings suggest that the school's Science instruction, curriculum implementation, and assessment practices are generally effective in supporting learning. The satisfactory performance reflects a positive learning environment and effective teaching strategies, including clear learning goals, timely feedback, and structured curricula, which contribute to students' academic achievement in science (Fraser, 2012; Hattie, 2009; OECD, 2019).

Problem 3: Does Students' Attitude Towards Science have a significant Relationship with Academic Performance?

Table 6: The Significant relationship between Students' Attitude Towards Science and Academic Performance

Variable Mean		R-Value	P-Value	Interpretation
X	Y			
Student's Attitude Towards Science	Academic Performance	-.108	.292	Not Significant

Table 6 presents the relationship between students' attitude towards science and their academic performance. The results showed an R-value of −0.108 and a P-value of 0.292, which is interpreted as not significant, indicating that students' attitudes toward science do not have a meaningful effect on their science grades. This suggests that even moderately positive or negative attitudes do not necessarily translate into higher or lower academic performance. Other factors, such as teaching strategies, assessment methods, prior knowledge, and learning support, may play a more critical role in determining achievement. This finding aligns with previous studies, which emphasize that attitudes alone are not sufficient predictors of academic performance, as instructional quality, curriculum, and cognitive skills have a stronger influence on students' outcomes (Osborne, Simon, & Collins, 2003; DeWitt & Archer, 2015; OECD, 2019).

Ethical Considerations

This study adhered to ethical standards in educational research to safeguard the rights and welfare of all participants. Approval to conduct the study was obtained from the Department of Education Division Office and the School Principal of Buenavista Integrated School. Informed consent was secured from all student-respondents after clearly explaining the study's purpose, procedures, and their right to voluntarily participate or withdraw at any time without penalty. Confidentiality and anonymity were strictly maintained by using codes to protect participants' identities, and no personal information was disclosed in the data analysis or report. Academic records were accessed only with proper authorization and in compliance with the Data Privacy Act of 2012 (Republic Act No. 10173). Data collected were used solely for research purposes and stored securely. The study ensured that participants were not exposed to physical, psychological, or emotional harm, with survey questions designed to be non-intrusive and administered at convenient times to avoid disruption or coercion. Ethical principles of fairness, integrity, and objectivity were upheld throughout the research process.

Conclusion

The findings of this study highlight that students at Buenavista Integrated School generally recognize the relevance of science to society and show moderate interest in learning it. However, limitations in school resources, such as instructional materials, laboratory tools, and technology, may affect their engagement. Although students performed satisfactorily in science, the study found no significant relationship between attitude and academic performance, indicating that positive attitudes alone do not guarantee higher achievement. Instead, academic outcomes are more influenced by teaching quality, assessment practices, and available learning support. Improving school resources, teaching strategies, and context-based science instruction can enhance both students' learning experiences and academic success, suggesting that educators

and stakeholders should focus on resource and instruction-based interventions to support meaningful science learning.

Reccomendations

Based on the findings, to improve Students' Attitude towards science and academic performance, Buenaviista Integrated School should prioritize updating science resources, promote learner-centered and real-life-oriented teaching strategies, and provide continuous professional development for teachers. Additionally, increasing parental and community involvement can support student learning. Future research can explore other factors influencing science attitudes and performance, such as teaching effectiveness and school environment, using this study as a reference.

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