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Influence of Academic Self-Efficacy towards Optimism among Students in Integrated Schools

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Abstract

Academic self-efficacy refers to a student's belief in their ability to accomplish academic tasks and succeed in school. This belief can influence students' motivation and positive outlook toward learning. However, the relationship between academic self-efficacy and academic optimism among Filipino junior high school students in integrated schools has not been widely explored. This study aimed to examine the influence of academic self-efficacy on academic optimism and to determine whether selected respondent characteristics moderate this relationship. Specifically, it described the respondents' characteristics in terms of sex, family income, parents' educational attainment, and technology usage; determined their levels of academic self-efficacy and academic optimism; examined the influence of academic self-efficacy on academic optimism; and tested the moderating effects of respondent characteristics. The study used a quantitative descriptive-correlational design with moderation analysis. It involved 151 Grade 9 students from selected integrated schools in Opol Districts, Misamis Oriental during the School Year 2025–2026 using total enumeration sampling. Data were collected through adapted questionnaires and analyzed using descriptive statistics, linear regression, and moderation analysis.

The results showed that the respondents had high levels of academic self-efficacy and academic optimism. Regression analysis revealed that all dimensions of academic self-efficacy significantly influenced students' academic optimism. Moderation analysis also showed that sex, family income, parents' educational attainment, and technology usage significantly influenced the relationship between academic self-efficacy and optimism. These findings indicate that students who believe in their abilities are more likely to trust their teachers, value academic goals, and feel connected to their school. The study concludes that academic self-efficacy plays an important role in developing academic optimism. Schools are encouraged to strengthen students' confidence in learning, provide supportive environments, and promote responsible technology use to improve students' motivation and positive attitudes toward school.

Keywords: Academic Self-Efficacy, Academic Optimism

1. Introduction

Filipino adolescents today face increasing academic and emotional challenges that affect both their learning and overall well-being. Many students struggle with pressures from school, family, peers, social

media, and digital technologies, making it difficult to maintain confidence and motivation in their studies. Academic self-efficacy and academic optimism are recognized as important factors that strengthen students' motivation, improve academic performance, and support emotional well-being by helping them believe in their abilities and maintain positive expectations for success.

Although existing educational policies promote student welfare and mental health, they provide limited emphasis on strengthening academic self-efficacy and academic optimism. There is also a lack of local research examining these factors among Grade 9 students in integrated public schools, particularly in under resourced settings. This study seeks to determine the relationship between academic self-efficacy and academic optimism, assess their levels among students, identify demographic factors that may influence this relationship, and provide evidence-based recommendations for school interventions that enhance both academic achievement and emotional well-being.

2. Research Questions

This study investigated the relationship between academic self-efficacy and academic optimism among Grade 9 students enrolled in integrated schools for the School Year 2025-2026 and examined how respondents' characteristics moderate this relationship.

Specifically, the study sought to answer the following questions:

1. What are the respondents' characteristics in terms of sex, family monthly income, parents' highest educational attainment, and technology usage?
2. What is the respondents' level of academic self-efficacy in terms of perceived control, competence, persistence, and self-regulated learning?
3. What is the respondents' level of optimism in terms of trust in teachers, academic emphasis, and identification with school?
4. Does academic self-efficacy significantly influence the optimism of Grade 9 students in integrated schools?
5. Do the respondents' characteristics significantly moderate the relationship between their academic self-efficacy and optimism?

Significance

The findings of this study may provide valuable guidance for educational stakeholders in strengthening programs and policies that promote students' academic confidence and positive outlook toward learning. Education officials and school divisions may use the results to develop learner centered initiatives, improve teacher training, and design school practices that foster academic optimism, self-efficacy, and emotional well-being. School leaders, teachers, guidance counselors, and mental health professionals may also apply the findings in creating mentoring programs, counseling services, classroom strategies, and supportive learning environments that encourage resilience, confidence, and academic success.

Parents and students may benefit from a better understanding of the factors that influence academic self-efficacy and optimism, enabling them to provide stronger support for learning and personal development. Students may become more aware of the importance of self-belief, goal setting, and seeking help when needed, while parents may make informed decisions that strengthen their children's educational experiences. Furthermore, the study may serve as a valuable reference for future researchers by providing

a foundation for further investigations on academic self-efficacy, academic optimism, academic achievement, emotional well-being, and other related educational and psychological factors in the Philippine context.

Scope and Limitations

This study focused on determining the levels of academic self-efficacy and academic optimism among Grade 9 students in selected Integrated Schools in the Opol Districts, Division of Misamis Oriental, during the School Year 2025 to 2026. It examined the relationship between these two psychological constructs and explored how respondents' characteristics, including sex, family monthly income, parents' highest educational attainment, and technology usage, influenced this relationship. Academic self-efficacy was assessed through perceived control, competence, persistence, and self-regulation, while academic optimism was measured through trust in teachers, academic emphasis, and identification with school. The study was limited to Grade 9 students from selected Integrated Schools within one geographical area, which may restrict the applicability of the findings to other student populations. The results were also based on self-reported data that may have been affected by response bias. Although the research instruments were reviewed and tested before implementation, one of the adapted measures has not yet been fully validated in the Philippine context. In addition, the study used a cross sectional design, making it unable to establish cause and effect relationships or examine changes in students' academic self-efficacy and academic optimism over time.

Literature Review

Respondent's Characteristics

Sex, family monthly income, parents' highest educational attainment, and technology usage are important demographic factors that may influence the relationship between academic self-efficacy and academic optimism. Studies show that differences in sex affect students' confidence, self-regulation, and responses to academic challenges, with gender shaping how learners develop academic beliefs and motivation (Nguyen et al., 2021; Aymans et al., 2020). Socioeconomic factors such as family income and parental education also contribute to students' learning experiences by affecting access to resources, parental support, and educational expectations, which influence self-efficacy and optimism (Bautista & Tan, 2021; Davis Kean et al., 2020). Furthermore, technology usage has become a significant factor in shaping students' academic engagement, confidence, and learning behaviors, as appropriate access and guided use of digital tools can enhance learning outcomes while excessive use may negatively affect engagement (Chua & Reyes, 2023; Tan & Caballero, 2023). These factors are considered moderating variables in understanding how students' academic self-efficacy relates to their academic optimism.

Academic Self-Efficacy

Academic self-efficacy plays a significant role in students' academic success, emotional resilience, and ability to overcome learning challenges. Research shows that students with strong academic self-efficacy demonstrate greater persistence, positive coping strategies, confidence, and motivation, which contribute to improved academic outcomes and well-being (Lei et al., 2021; Kurniawan & Affandi, 2023). Key dimensions of academic self-efficacy such as perceived control, competence, persistence, and self-regulated learning influence how learners manage challenges, regulate emotions, and sustain effort toward their goals. Studies highlight that student who perceive control over their learning, possess confidence in

their abilities, and develop effective self-regulation strategies are more likely to achieve academic success (Datu & King, 2021; Panadero, 2020). Additionally, social support, parental influence, technology access, and socioeconomic factors shape the development of students' academic beliefs and behaviors. This study considers academic self-efficacy as a crucial factor among Grade 9 learners to understand differences across demographic variables and to develop interventions that strengthen students' confidence, motivation, and academic engagement, particularly in public school contexts.

Student Optimism

Academic optimism reflects students' positive expectations toward achieving success in education despite challenges and is influenced by internal characteristics and external environments. Research indicates that optimism among secondary students is associated with self-efficacy, positive school climate, supportive parenting, internal locus of control, and character strengths such as gratitude and hope (Ratnawati et al., 2021; Datu & Mateo, 2020). Components of academic optimism, including trust in teachers, academic emphasis, and identification with school, contribute to students' motivation, emotional security, belongingness, and commitment to learning. Studies show that supportive and trustworthy teachers enhance student engagement, while schools that promote academic excellence and inclusive practices strengthen learners' confidence and optimism toward their educational goals (Kim & Schachter, 2022; Liu et al., 2022). This study examines academic optimism among Grade 9 students by exploring how these factors interact with academic self-efficacy and demographic characteristics to support the development of interventions that promote positive learning attitudes and sustained academic engagement.

Methodology

Research Design

This study employed a descriptive correlational research design with moderation analysis to examine the relationship between academic self-efficacy and academic optimism among Grade 9 students in integrated public schools in the Opol Districts. The descriptive component was used to present the respondents' characteristics, while the correlational component determined the strength and direction of the relationship between academic self-efficacy and academic optimism. Moderation analysis was conducted to determine whether selected demographic characteristics influenced this relationship. Since the study did not involve the manipulation of variables, it examined naturally occurring relationships within the school setting, providing empirical evidence that may serve as a basis for educational interventions, policies, and programs that support students' academic performance and psychological well-being.

Participants

The source of data for this research was derived from primary sources consisting of one hundred fifty-one Grade 9 public school students enrolled in integrated public schools located in the Opol District for the School Year 2025-2026. These respondents provided current, accurate and first-hand knowledge of their academic self-efficacy and optimistic outlook as well as demographic information needed to perform analysis of the moderating effects. Participants were drawn from seven identified integrated schools which were chosen to provide a reasonable representation of the geographical, socio-economic, and educational diversity of the Opol district. The use of primary data directly obtained from the students allows for greater credibility and authenticity of the data in reference to meeting the objectives of this study.

Data Collection

The study measured academic self-efficacy using the Academic Self Efficacy Scale for Filipino Junior High School Students, a validated instrument consisting of 62 items rated on a 4-point Likert scale ranging from strongly disagree to strongly agree. The instrument assessed four dimensions of academic self-efficacy namely perceived control, competence, persistence, and self-regulation. Academic optimism was measured using the Student Academic Optimism Attitude Scale, which consists of 26 items rated on a 5-point Likert scale and evaluates three dimensions namely trust in teachers, academic emphasis, and identification with school. These standardized instruments provided comprehensive measures of the two psychological constructs examined in the study.

Both instruments were administered in their original validated forms without any modification to preserve their established reliability and validity. Using standardized measures ensured consistency in data collection and allowed for accurate assessment of students' academic self-efficacy and academic optimism. This approach strengthened the credibility of the findings and supported meaningful analysis of the relationship between the two constructs among Grade 9 students.

Data Analysis

The data gathered in this study were analyzed using both descriptive and inferential statistics. Frequency and percentage distribution were used to describe the respondents' characteristics, including sex, family monthly income, parents' highest educational attainment, and technology usage. Mean and standard deviation were computed to determine the levels of academic self-efficacy and academic optimism among the respondents.

To determine the relationship between the variables, linear regression analysis was employed to examine the influence of academic self-efficacy on academic optimism. Moderation analysis was also conducted to determine whether respondents' characteristics significantly influenced this relationship. All statistical analyses were performed using appropriate statistical software, and a significance level of 0.05 was used to determine statistically significant results.

1. Results and Discussions

Problem 1: What are the respondents' characteristics in terms of sex, family monthly income, parents' highest educational attainment, and technology usage?

Table 1Distribution of Respondents' Characteristics in terms of Sex

Category	Frequency	Percentage
Male	50	33.10
Female	101	66.90
Total	151	100.00

Table 1 shows the sex distribution of the 151 Grade 9 respondents. Most of the participants were female, accounting for 101 respondents or 66.90 percent, while 50 respondents or 33.10 percent were male. The higher proportion of female respondents suggests that the study population was predominantly female, which is common in many public junior high schools. This distribution may have influenced the overall

findings, as female students are often associated with stronger study habits, greater persistence, better organization, and higher levels of self-regulation, all of which contribute to academic self-efficacy. Although male respondents were fewer in number, they remained important in interpreting the results. Differences in learning behaviors and persistence between male and female students may influence the development of academic self-efficacy, highlighting the need to consider sex when designing educational interventions. These findings suggest that teachers should implement strategies that strengthen both students' confidence and persistence while addressing the unique learning needs of male and female learners. Overall, the results support previous research indicating that sex differences may influence students' academic beliefs, motivation, and learning behaviors.

Table 2 Distribution of Respondents' Characteristics in terms of Family Monthly Income

Category	Frequency	Percentage
Php 20,001 and above	36	23.80
Php 10,001 - PHP 20,000	10	6.60
Php 5,001 - PHP 10,000	28	18.50
Below Php 5,000	77	51.00
Total	**151**	**100.00**

Table 2 presents the respondents' distribution according to family monthly income. More than half of the respondents, 77 or 51.00 percent, came from families earning below PHP 5,000 per month, indicating that most belonged to economically disadvantaged households. Limited financial resources may reduce students' access to learning materials, educational opportunities, and academic support, which can affect their confidence, persistence, and optimism toward school. Family income also influences parental support and the overall learning environment, both of which play important roles in developing students' academic self-efficacy.

In contrast, only 10 respondents or 6.60 percent belonged to families earning between PHP 10,001 and PHP 20,000 per month. Students from higher income households are generally more likely to have access to educational resources, supportive home environments, and opportunities that strengthen their confidence and positive outlook toward learning. The small proportion of respondents from higher income families suggests that socioeconomic challenges remain a significant reality for most learners in the study. These findings support previous research indicating that family income influences students' academic self-efficacy, motivation, persistence, and academic optimism by shaping the resources and support available for learning.

Table 3 Distribution of Respondents' Characteristics in terms of Parents' Highest Educational Attainment

Category	Father		Mother	
	Frequency	Percentage	Frequency	Percentage
Post Graduate Studies	2	1.30	1	0.70
College Graduate	7	4.60	10	6.60
Technical/Vocational	3	2.00	1	0.70
College Level	5	3.30	9	6.00

High School Graduate	20	13.20	42	27.80
High School Level	32	21.20	41	27.20
Elementary Graduate	39	25.8	13	8.60
Elementary Level	43	28.5	34	22.5
Total	**151**	**100.00**	**151**	**100.00**

Table 3 presents the respondents' distribution according to their parents' highest educational attainment. The largest proportion of fathers, 43 or 28.50 percent, had attained only elementary education, while the largest proportion of mothers, 42 or 27.80 percent, were high school graduates. These findings suggest that many respondents came from households where parents may have limited educational backgrounds, which could affect the level of academic guidance, encouragement, and learning support available at home. Nevertheless, schools and teachers can help strengthen students' confidence, motivation, and persistence by providing additional academic support and positive learning experiences.

Only a small number of respondents had parents who completed postgraduate education, indicating limited access to the educational advantages associated with higher parental attainment. Parents with higher educational backgrounds are generally better equipped to provide academic guidance, establish positive learning habits, and encourage educational aspirations, which contribute to stronger academic self-efficacy and optimism. Overall, the findings highlight the important role of parental educational attainment in shaping students' academic beliefs and emphasize the need for schools to provide support that helps bridge differences in home learning environments.

Table 4 Distribution of Respondents' Characteristics in terms of Technology Usage based on Use of Gadgets

Category	Frequency	Percentage
Gadget Mostly Used		
Smartphone	97	64.24
Tablet	30	19.86
Keypad Phone	9	5.96
Laptop/Chromebook	9	5.96
Personal Computer	6	3.97
Total	**151**	**100.00**
Number of hours Using Gadgets per day		
8 hours and above	8	5.29
5 – 7 hours	30	19.86
2 – 4 hours	68	45.03
1 hour and below	45	29.80
Total	**151**	**100.00**
Main Purpose of Using a Gadget		
Schoolwork/Online classes	24	15.89
Social media	56	37.08
Games	51	33.77

Watching videos/movies	8	5.29
Communication (calls/messages)	12	7.97
Total	**151**	**100.00**

Table 4 presents the respondents' technology use based on gadget use. Most respondents, 97 or 64.24 percent, identified smartphones as their primary digital device, indicating that mobile phones are the most accessible and commonly used technology for both academic and personal purposes. The majority also reported using gadgets for two to four hours per day, suggesting a generally balanced level of technology use that may support learning, time management, and self-regulation. These findings highlight the importance of integrating mobile friendly instructional materials and digital learning activities into classroom instruction.

The results further show that 56 respondents or 37.08 percent primarily used their gadgets for social media, while only a few mainly used them for watching videos or movies. In addition, very few respondents relied on personal computers, reflecting limited access to more advanced digital devices. These findings suggest that although students are familiar with digital technology, its use is often directed toward social interaction rather than academic learning. The results emphasize the need for schools and teachers to promote responsible and purposeful technology use by encouraging learners to maximize digital resources that enhance academic self-efficacy, engagement, and learning outcomes.

Table 5 Distribution of Respondents' Characteristics in terms of Technology Usage based on Use of Social Media

Category	Frequency	Percentage
Social media mostly used		
Facebook	52	34.40
TikTok	74	49.00
Instagram	10	6.6
Youtube	9	6.0
Twitter/X	6	4.0
Total	**151**	**100.00**
Number of hours spent per day		
8 hours and above	8	5.30
5 – 7 hours	36	23.80
2 – 4 hours	63	41.70
1 hour and below	44	29.10
Total	**151**	**100.00**

Table 5 presents the respondents' technology usage based on social media use. The findings show that TikTok was the most frequently used social media platform, with 74 respondents or 49.00 percent identifying it as their primary platform. Most respondents also reported spending two to four hours per day on social media, indicating a moderate level of engagement. These results suggest that students prefer interactive and visually engaging platforms, which may provide opportunities for educators to integrate

creative and meaningful digital learning activities that enhance student engagement, motivation, and academic self-efficacy.

Only a small number of respondents primarily used text-based platforms such as Twitter or X or spent eight hours or more daily on social media. Excessive social media use may reduce students' attention, self-regulation, and academic engagement, while balanced use can support effective time management and responsible digital habits. The findings highlight the importance of guiding students toward purposeful social media use and encouraging digital practices that strengthen academic confidence, critical thinking, and overall learning outcomes**.**

Table 6 Distribution of Respondents' Characteristics in terms of Technology Usage Based on Use of Artificial Intelligence Tools

Category	Frequency	Percentage
AI tools mostly used		
ChatGPT	101	66.90
Grammarly	3	2.0
Quillboot	2	1.3
Canva	45	29.80
Total	**151**	**100.00**
Frequency of using AI		
Daily	33	21.90
2-3 Times a Week	67	44.40
Once a Week	41	27.20
Rarely	10	6.60
Total	**151**	**100.00**

Table 6 presents the respondents' technology usage based on the use of artificial intelligence. The findings show that ChatGPT was the most commonly used AI tool, with 101 respondents or 66.90 percent identifying it as their primary platform. Most respondents also reported using AI tools two to three times per week, indicating that AI has become a regular but balanced part of their academic activities. These results suggest that students use AI to understand lessons, generate ideas, and complete school tasks, supporting independent learning, problem solving, and the development of academic self-efficacy.

In contrast, only a few respondents primarily used AI tools designed for writing refinement, such as Quillbot, and a small number reported rarely using AI. Limited exposure to different AI applications may reduce opportunities to strengthen writing skills, critical thinking, and digital literacy. The findings highlight the importance of providing students with guidance on the ethical and effective use of various AI tools to enhance academic performance, self-regulated learning, and confidence in completing academic tasks.

Problem 2: What is the respondents' level of academic self-efficacy in terms of perceived control, competence, persistence, and self-regulated learning?

Table 7 Summary Distribution of Respondents' Level of Academic Self-Efficacy

Variable	Mean	SD	Interpretation
Perceived Control	3.04	0.45	**High**
Competence	2.94	0.47	**High**
Persistence	3.07	0.46	**High**
Self-Regulated Learning	3.10	0.44	**High**
Overall	**3.04**	**0.40**	**High**

Table 7 shows that Grade 9 students in integrated public schools in Opol demonstrated a high level of academic self-efficacy**,** with an overall mean of 3.04. The findings indicate that students generally believe in their ability to accomplish academic tasks, set learning goals, monitor their progress, and adjust their learning strategies when faced with challenges. Despite limited access to educational resources and varying levels of support at home, the respondents exhibited self-directed learning behaviors that contribute to resilience, persistence, and consistent academic performance. These results emphasize the importance of academic self-efficacy in promoting positive learning behaviors and successful educational outcomes.

Among the four dimensions, self-regulation obtained the highest mean, indicating that students were most confident in their ability to plan, manage, and evaluate their own learning. In contrast, competence recorded the lowest mean, although it remained within the high level, suggesting that some learners were less confident in applying knowledge independently and mastering more complex academic tasks. These findings highlight the need for schools and teachers to strengthen students' competence through meaningful learning experiences, constructive feedback, and opportunities for independent problem solving to further enhance their academic confidence and achievement.

Problem 3: What is the respondents' level of optimism in terms of trust in teachers, academic emphasis, and identification with school?

Table 8 Summary Distribution of the Respondents' Level of Optimism

Indicator	Mean	SD	Interpretation
Trust in Teachers	4.09	0.57	**High**
Academic Emphasis	4.04	0.62	**High**
Identification with School	4.06	0.61	**High**
Overall	**4.06**	**0.55**	**High**

Table 8 shows that Grade 9 students in integrated public schools in Opol demonstrated a high level of academic optimism**,** with an overall mean of 4.06. The findings indicate that students generally maintain positive expectations toward their academic experiences, school environment, and future success despite

challenges such as limited resources and personal difficulties. Their optimism reflects resilience, motivation, and persistence in achieving academic goals, suggesting that they remain hopeful and committed to learning within their school context.

Among the three dimensions, trust in teachers obtained the highest mean, indicating that students strongly believe their teachers provide guidance, encouragement, and support that contribute to their academic success and emotional well-being. In contrast, academic emphasis recorded the lowest mean, although it remained at a high level, suggesting that some students may need clearer academic expectations, consistent feedback, and stronger recognition of their achievements. These findings emphasize the important role of supportive teacher student relationships and a positive school environment in strengthening students' optimism, engagement, and confidence in their ability to succeed academically.

Problem 4: Does the academic self-efficacy significantly influence the optimism of Grade 9 students in integrated schools?

Table 9 Test Result of Significant Influence of Academic Self-Efficacy on the Respondents' Optimism

Academic Self-Efficacy Variables		Optimism Variables: Trust in Teachers		Academic Emphasis		Identification with School	
Perceived Control	β value	0.009		0.054		0.046	
	R^2 value	0.75		0.81		0.79	
	p value	0.001	**S**	0.000	**S**	0.001	**S**
Competence	β value	0.035		0.009		0.009	
	R^2 value	0.81		0.75		0.75	
	p value	0.001	**S**	0.001	**S**	0.001	**S**
Persistence	β value	0.280		0.175		0.146	
	R^2 value	0.83		0.73		0.73	
	p value	0.001	**S**	0.000	**S**	0.001	**S**
Self-Regulated Learning	β value	0.346		0.474		0.438	
	R^2 value	0.76		0.76		0.73	
	p value	0.001	**S**	0.000	**S**	0.001	**S**
Overall		0.17		0.18		0.22	
		0.79		0.76		0.72	
		0.001	**S**	0.000	**S**	0.001	**S**

Table 9 shows that all dimensions of academic self-efficacy significantly and positively influenced the three dimensions of academic optimism, namely trust in teachers, academic emphasis, and identification with school. The regression analysis revealed high explanatory power, indicating that students with stronger confidence in their academic abilities also demonstrated higher levels of optimism toward their teachers, school, and learning environment. Consequently, the null hypothesis stating that academic self-efficacy has no significant influence on academic optimism was rejected. The findings further suggest that perceived control, competence, persistence, and self-regulation work together in shaping students'

optimistic attitudes, with improvements in any of these areas contributing to more positive academic beliefs and school experiences.

Among the four dimensions, self-regulation emerged as the strongest predictor of academic optimism, followed by persistence, while perceived control and competence also showed significant positive effects. Students who effectively plan, monitor, and evaluate their own learning were more likely to trust their teachers, value academic achievement, and develop a stronger sense of belonging in school. These findings emphasize the importance of strengthening students' self-regulated learning, perseverance, competence, and sense of control through supportive teaching practices and meaningful learning experiences, as these collectively enhance academic optimism, resilience, and long-term academic success.

Problem 5: Do the respondents' characteristics significantly moderate the relationship between their academic self-efficacy and optimism?

Table 10 Moderating Effect of the Respondents' Characteristics on the Relationship Between Their Academic Self-Efficacy and Optimism

Respondents' Profile Variables		Academic Self-Efficacy					Optimism			
		Perceived Control	Competence	Persistence	Self-Regulated Learning	Overall	Trust in Teachers	Academic Emphasis	Identification with School	Overall
Sex	Z Value	0.536	0.570	0.930	0.059	0.598	0.682	0.185	0.334	1.879
	P value	0.039	0.007	0.035	0.005	0.003	0.002	0.031	0.018	0.026
	Interpretation	S	S	S	S	S	S	S	S	S
Family Monthly Income	Z Value	2.429	3.667	3.092	0.857	2.870	0.029	0.930	1.492	1.920
	P value	0.016	0.000	0.002	0.033	0.005	0.007	0.034	0.018	0.037
	Interpretation	S	S	S	S	S	S	S	S	S
Father's Highest Educational Attainment	Z Value	0.516	0.335	0.483	1.569	0.567	0.664	0.262	0.615	0.626
	P value	0.006	0.027	0.009	0.017	0.011	0.050	0.047	0.026	0.035
	Interpretation	S	S	S	S	S	S	S	S	S
Mother's Highest Educational Attainment	Z Value	0.463	0.637	0.027	1.016	0.610	0.667	0.234	0.739	0.549
	P value	0.044	0.025	0.007	0.031	0.043	0.033	0.039	0.011	0.042
	Interpretation	S	S	S	S	S	S	S	S	S

Gadget Mostly Used	Z Value	0.200	0.541	0.016	0.477	0.779	0.194	0.122	0.274	0.325
	P value	0.023	0.016	0.046	0.014	0.047	0.023	0.036	0.024	0.044
	Interpre-tation	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Number of Hours of Gadg-ets Use	Z Value	0.405	1.557	0.782	1.527	0.348	0.198	0.505	0.104	0.678
	P value	0.006	0.024	0.032	0.026	0.029	0.022	0.014	0.018	0.006
	Interpre-tation	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Purpose of Gadget Use	Z Value	0.550	0.357	0.750	0.695	0.707	0.686	0.761	1.650	0.644
	P value	0.038	0.017	0.021	0.048	0.048	0.027	0.049	0.025	0.049
	Interpre-tation	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Use of Social Media	Z Value	0.316	0.125	0.465	0.665	0.000	1.611	0.401	0.783	0.545
	P value	0.019	0.009	0.014	0.038	0.031	0.008	0.016	0.028	0.013
	Interpre-tation	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Time Spent on Social Media	Z Value	0.187	0.859	0.443	0.183	0.562	0.263	0.612	0.026	0.391
	P value	0.025	0.032	0.006	0.023	0.044	0.039	0.042	0.009	0.045
	Interpre-tation	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Use of Artificial Intelli-gence (AI) Tools	Z Value	0.615	0.131	0.173	0.103	0.660	0.293	0.648	0.301	0.365
	P value	0.010	0.026	0.038	0.018	0.039	0.007	0.018	0.046	0.003
	Interpre-tation	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Fre-quency of Use of AI Tools	Z Value	0.584	0.153	0.133	0.543	1.174	0.398	0.651	0.383	0.502
	P value	0.020	0.033	0.008	0.005	0.024	0.048	0.034	0.016	0.027
	Interpre-tation	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**

Table 10 revealed that all respondents' characteristics significantly moderated the relationship between academic self-efficacy and academic optimism, indicating that this relationship is influenced by personal, socioeconomic, family, and technology related factors. The findings show that sex, family monthly income, parents' educational attainment, and technology use all affect how students' confidence in their academic abilities translates into positive expectations toward learning and school. This suggests that academic self-efficacy does not influence optimism in the same way for all students, as individual and environmental circumstances shape the strength of this relationship.

The results further highlight that responsible use of technology, social media, and artificial intelligence can strengthen the positive relationship between academic self-efficacy and optimism, while excessive or nonacademic use may weaken it. These findings emphasize that students' confidence and optimism are shaped not only by their personal beliefs but also by the support and opportunities available in their home,

school, and digital environments. Overall, the study supports the view that academic self-efficacy remains a strong predictor of academic optimism, but its influence varies according to students' characteristics and learning contexts, underscoring the importance of providing equitable support and meaningful educational experiences.

2. Conclusion and Recommendations

Conclusion

The results showed that Grade 9 students had fairly high levels of academic self-efficacy and optimism. Among the dimensions of academic self-efficacy, self-regulation emerged as the highest, whereas among the three dimensions of optimism, trust in teachers was the dominant area, suggesting that the students could plan, monitor, and evaluate their own learning processes, and also believe in the teachers' guidance, assistance, and abilities. Perceived control, competence, persistence and self-regulated learning all predicted students' optimism meaning that students who perceive themselves as capable, using a strategy for self-regulating their learning, and persistent when encountering barriers to their learning are likely to trust their teachers, value their academic goals, and have school bonding.

Furthermore, the relationship between academic self-efficacy and optimism is moderated by students' demographic and technological contexts, including sex, family income, parents' educational attainment, and patterns of gadget and social media use. This underscores that optimism develops within a broader personal and environmental context, where both learners' beliefs and external supports shape their positive outlook. Rather than pulling some random motivational intervention off the shelf of one-size-fits-all techniques, schools should begin to build a holistic, contextualized approach that gradually builds students' self-regulated learning, enriches student competence and persistence, strengthens teacher-student bonds, and lets students learn about responsible and safe use of tech. By targeting needed internal resources and developing sought external conditions, educators will ultimately fine-tune students' motivation, grit, and sustained optimism so that students put high levels of academic self-efficacy to work for them in their high-volume learning.

Recommendations

The found data has led to the following recommendations:

1. School Administrators and teachers must build academic goal and achievement visibility and meaning for all. Recognition programs, goal-setting workshops, displays of students' excellent work, and inviting students into school decisions will enhance students' appreciation for academic priorities and cultivate students' emotional connectedness to the school Learning will occur through the use of these strategies.
2. Teachers must design learning tasks that are appropriately scaffolded and empowering and will allow students to be successful with small manageable steps. Learners need to grow in competence and autonomy and develop a sense of control over their learning outcomes through carefully scaffolded activities, assistance with the guiding problems through to resolution, and feedback.
3. Teachers and school leaders should tailor their approaches based on student demographic and technology context. In particular, more support and encouragement could go to those students who seem to have lower perceived control over technology and resource access. It will help them find their efficacy and develop a more overall optimistic view of school.

4. Mentorship, direction and resources should be provided to underprivileged students who are at risk for not realizing their full potential in school. Tutoring from their students, after school study groups, parent intervention, and other venues of coverage for when there's something missing at home, and keeping an eye on them so that they can be filled with the hope for a chance at success and the self-efficacy critical to that success.
5. Students should be taught how to make smart use of digital tools and AI resources in their learning zone. Use of specific digital literacy activities, tutorials on educational apps, and monitoring student use of social media can help student self-regulated learning, create student trust, and reduce distractions that provide students a negative impact on their optimism, despite the high level of student efficacy.

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