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Relationship of Students' Academic Optimism and Students'Academic Engagement to their Socio- Demographic Technological Profile

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Abstract

This study explores the relationship between students' socio-demographic technological profiles and their academic optimism and academic engagement at Nato National High School in Sagñay District. The research examines how the variable such as parental socio-economic status (monthly income), educational attainment, occupation, and access to technology and the internet correlates to students' trust in teachers, perceptions of academic press, and identification with school, collectively termed students' academic optimism. Additionally, the study evaluates cognitive, behavioral, and affective dimensions of students' academic engagement.

A descriptive-correlational research design was employed, utilizing both surveys and key informant interviews. The sample consisted of 320 students selected using Cochran's formula with a 5% margin of error and a 95% confidence level, ensuring a representative sample across grades 7 to 12.

The primary data collection tool was a set of validated and reliable questionnaires, including the academic optimism scale by Tschannen-Moran et al. (2013) and a modified version of Pareja's (2009) Student Engagement Scale. Ordinal regression analysis was used to determine how socio-demographic and technological profiles predict students' academic optimism and engagement, with Spearman's rank correlation assessing the relationship between these variables.

Key findings reveal that students' academic engagement had the strongest positive association with academic optimism and vice versa. The father's monthly salary had a significant negative association with academic optimism and the maternal education has a positive significant relationship with students' academic engagement. The study highlights the significant role of academic engagement in fostering academic optimism and suggests targeted interventions to ensure academic success and positive experience of the students in school.

Keywords: Students' Academic Optimism, Students' Academic Engagement, Socio- Demographic Technological Profile

Chapter I

The Problem and Its Setting

This chapter includes the background of the study, statement of the problem, hypothesis, significance of the study, and the scope and delimitation.

Background of the Study

In recent years, academic optimism has gained attention in educational research as a key factor influencing student development. Defined by Hoy et al. (2006) as the collective belief in a school's ability to promote learning, optimism enhances students' motivation and enthusiasm. For teachers and administrators, academic optimism is linked to transformational leadership, professional commitment, and supportive policies (Hong, 2016; Anderson et al., 2018). Additionally, factors like hope, positive psychology, and perceptions of poverty impact academic optimism (Rand et al., 2020; Othman et al., 2021). However, the relationship between students' academic optimism and socio-economic status (SES) is inconsistent as Tschannen-Moran et al. (2013) found a negative correlation and Othman et al. (2021) identified a positive link between perceptions of poverty and optimism while Tetzner and Becker (2018) reported that higher parental SES positively affects adolescent optimism.

Moreover, one of the most pressing issues in the society today is ensuring that students can adapt to the constantly changing environment they live in. Amidst researches on academic engagement, the COVID-19 pandemic introduced challenges to the students' learning and engagement. For instance, according to the data results from Philippine Informal Reading Inventory (Phil IRI) and Albay Numeracy Assessment Tools (ALNAT), Sagñay District has a significant number of high school non-readers (68 out of 3439 students), and a substantial portion of students (26.74%) who requires major support in numeracy assessments. Studies have also documented declines in student engagement and emotional well-being, necessitating innovative approaches to support students' academic experiences (Wester et al., 2021; Limniou et al., 2022).

In addition, the use of technology in education has offered new opportunities for learning (Baylen, 2018; Marcial, 2020) while also presenting risks such as cyberbullying, digital distractions (Ramírez, et al., 2021) and other effects that may lead to a low optimism and engagement of the students. Access to internet and technology has become increasingly important in modern education, shaping how students interact with learning materials and engage with academic content. However, the Municipality of Sagñay is a 4th Class Municipality that has 44. 99% of poverty incidence. This implicates that families in Sagñay belong to low- income class and may be less likely to have access to the resources they need to succeed in school, such as computers and internet access (Rombaoa, 2019) and cannot provide their children with advantages in acquiring educational qualifications (Broer, Bai, & Fonseca, 2019).

Aside from that, engagement in academic activities is lower among socioeconomically more disadvantaged students (Kravchenko et al., 2023). Moreover, in accordance to Item 33 of DepEd Order No. 034, s. 2022, curricular activities in school have been limited to avoid the disruptions of classes which may hinder in providing a rich environmental context for positive youth development (Hanks, 2018). Engagement in extracurricular activities is linked to increased life satisfaction and optimism, as well as reduced anxiety and depressive symptoms (Johnson, 2022).

In light of these circumstances, this study seeks to contribute to the existing literature by addressing several gaps. Firstly, it aims to clarify the variances in previous research regarding the influence of socio-economic status on academic optimism. This study specifically examines socio-demographic and technological profile such as parental occupation, parental educational attainment, parental monthly income and access to internet and technology. Secondly, the study aims to provide a comprehensive understanding of academic optimism by considering the students' perspective. This includes exploring its relationship with students' academic engagement and socio-demographic technological profile, especially in the post-COVID-19 era. The study particularly focuses on rural areas, specifically Sagñay District. Ultimately, the goal is to strive towards improving academic experiences and outcomes for students.

Statement of the Problem

The purpose of this study is to investigate the Relationship of Students' Academic Optimism and their Academic Engagement to the Socio- Demographic Technological Profile of students in Public Secondary School in Sagñay District. Specifically, the study tried to answer the following research problems:

1. What is the socio-demographic and technological profile of the students with a focus on:
1.1. Socio- Demographic Profile,
1.1.1. Parental Occupation,
1.1.2. Parental Highest Educational Attainment, and
1.1.3. Parental Monthly Income?
1.2. Technological Profile
1.2.1. Access to Internet
1.2.2. Access to Technology?
2. What is the level of academic optimism of Junior High School and Senior High School Students, along:
2.1. Trust in teachers,
2.2. Perception of academic press, and
2.3. Identification with school?
3. What is the level of academic engagement of Junior High School and Senior High School Students, in terms of:
3.1. Cognitive engagement,
3.2. Behavioral engagement, and
3.3. Affective engagement?
4. How does students' academic optimism relate to their academic engagement based on socio-demographic technological profile?
5. What effective interventions can be developed to enhance students' academic optimism and students' academic engagement?

Hypothesis

The following hypotheses were formulated in this study:

Hypothesis 1:

H_0: There is no significant relationship between students' academic optimism and their level of academic engagement.

H_1: There is a significant positive relationship between students' academic optimism and their level of academic engagement.

Hypothesis 2:

H_0: Socio-Demographic Technological Profile does not significantly correlate with students' academic optimism and students' academic engagement.

H_1: Socio-Demographic Technological Profile significantly correlates positively with students' academic optimism and students' academic engagement.

Significance of the Study

The significance of this study lies on different aspects as it delves into the different variables that impact students' academic success in public secondary schools in Sagñay District. By examining the socio-demographic and technological backgrounds of students, as well as their levels of academic optimism and engagement, the research aims to uncover important insights into what drives educational success. Understanding factors such as parents' occupations, education levels, and income, along with students' access to technology and the internet, will provide a clearer picture of the external influences on students' learning environments. Additionally, assessing students' trust in their teachers, their perception of academic pressure, and their school identification will shed light on the internal factors that contribute to their academic optimism. By also looking at how students engage cognitively, behaviorally, and emotionally with their studies, the research aims to create a comprehensive understanding of their academic interactions. The insights gained from this study can help shape effective strategies and policies to boost student academic engagement and academic optimism, ultimately leading to better educational outcomes. This research is intended to benefit not only the students in Sagñay District but also serve as a useful resource for educators, policymakers, and researchers working to improve academic environments in similar settings.

Scope and Delimitation

This study investigated the relationship of socio- demographic and technological profile to students' academic optimism and students' academic engagement limited to Nato National High School as the chosen school among public secondary schools in Sagñay District and a selection of 320 respondents, so the findings may not be generalizable to other schools or students in different settings.

Despite these limitations, the study is expected to make a significant contribution to the understanding of the relationships between academic optimism, academic engagement, and socio-demographic and technological factors in a public secondary school in the Philippines. The findings will be used to develop interventions to improve academic optimism and engagement for students. While this research provides a broad understanding of the subject, it is important to note that it focuses more on the topic's breadth than its depth.

The study also involves collecting data from students using surveys and key informant interviews (KII). The data collection method employed in the study and surveys automatically has limitations that all elaborated further in Chapter 3

Chapter II

Review of Related Literatures and Studies

This chapter presents relevant literature and studies that the researcher considered in strengthening the importance of the present study. It also presents the synthesis of the state-of-the-art, the gap bridged by the study, the theoretical and conceptual frameworks and the definition of terms for better comprehension of the study.

Academic Optimism

Academic optimism is a construct that has mostly been researched from the teachers and schools' perspective, as it focuses on faculty members' collective perceptions of trust in students, academic emphasis, and collective efficacy, the term was first coined by Hoy et al., (2006). In the past years, it has been a topic in research studies as it has evolved to be one of the main indicators that influence academic experiences.

For instance, Hong (2016) examined the relationships among school principals' transformational leadership, school academic optimism, teachers' academic optimism and teachers' professional commitment and have found that schools with high academic optimism have high academic emphasis, teacher self-efficacy beliefs, and trust in parents and students. His study came up with a recommendation that there should be a further examination on the influence of teachers' demographic characteristics (such as gender and years of teaching) and school attributes (such as teaching grades, school size, and characteristics) on school academic optimism and teachers' academic optimism.

Similarly, Anderson et al., (2018) investigated the relationships among enabling structures, academic optimism, and student achievement and found out that policies and procedures that support and encourage teachers' efforts and allow them to do their jobs better is significantly correlated with the components of academic optimism, including academic emphasis particularly on norm-referenced tests in both reading and math, thus Anderson et al., (2018) recommended to replicate their study in different locations and populations to determine if the findings are consistent. They added that additional research be conducted to understand why the relationships between the attributes and mediation did not appear when criterion-referenced tests were used.

Moreover, a study conducted by Oludipe & Dixon (2020) suggested that FT, AE, and CE are significantly related among science students. Students have positive responses towards Faculty Trust (FT) and Academic Emphasis (AE), but negative towards Collective Efficacy (CE). The study also found a significant positive relationship between CE and FT, and between FT and AE. However, the relationship between CE and AE was found to be positive but insignificant ($r=0.348$, $p>0.05$).

In another study, Rand et al., (2020) extended research showing that higher hope, but not optimism, indirectly predicted better academic performance through specific grade expectancy. However, both hope and optimism predicted changes in subjective well-being. Generalization of the findings is to have studies in more diverse populations and contexts beyond academic settings and examine the roles of hope and optimism in different racial and ethnic groups, socio-economic backgrounds, and life domains, such as sports, health, and relationships.

Furthermore, Velea et al., (2021) examined the contribution of self-efficacy, optimism, resilience, and perceived stress on academic performance (GPA) in medical undergraduate students. The data analysis revealed significant associations between low optimism, low resilience, high perceived stress, and poor academic performance (GPA) and stress is negatively correlated with GPA.

Additionally, the study of Ratnawati et al., (2021) added to the knowledge about positive psychology studies and supported democratic parenting, school climate, self-concept, and internal locus of control as ultimate factors for creating students' academic optimism. Researchers have found out that democratic parenting positively and significantly influences students' internal locus of control and academic optimism. The results suggested the importance of considering alternative factors or approaches to enhance academic optimism among urban poor students and should carry out more in-depth research on the academic optimism of students at different school levels and regions to add more accurate and up-to-date reference sources related to students' problems in the educational field, such as academic self-confidence, the academic achievement of students during the Covid-19 pandemic, and others.

Also, Lileiur et al., (2022) mentioned that academic optimism is a triadic combination of subconstructs that interact and mutually influence each other, they developed a new questionnaire called the aSAO-questionnaire, which separates trust in students from trust in parents and disentangles teachers' perceptions of academic optimism at the classroom level on the one hand and at the school level on the other. Meanwhile Usan et al., (2022) analyzed the relationship among the variables self-efficacy, optimism, and academic performance in adolescent students and has found out that self-efficacy is positively correlated with optimism and academic performance. The correlation coefficient (r) between self-efficacy and optimism is 0.375, and the correlation coefficient between self-efficacy and academic performance is 0.370. The correlation coefficient between optimism and academic performance is 0.106, which is much weaker compared to the correlation coefficient between self-efficacy and academic performance. Thus, it was recommended that future studies should examine the role of self-efficacy in relation to other psychological variables and that longitudinal studies be undertaken to examine the evolution of these constructs over a longer time span while also considering other academic tiers, such as primary school and university, and others.

Students' Academic Optimism

Amidst all studies about academic optimism that focus on school and teachers' perspective of students' capability, some academics, however, investigated similar categories from a student perspective, such as student trust to teachers, student perceptions of academic press, and student identification with school. Tschannen-Moran et al. (2013) who coined the term students' academic optimism through a confirmatory analysis, have discovered that there was a noteworthy negative correlation between academic optimism and socio-economic status. The researchers used the percentage of students eligible for the free and reduced lunch program, a government aid initiative implemented in schools, to represent socioeconomic status. Furthermore, Othman et al., (2021), investigated the relationship between urban poor students' perceptions of government assistance and poverty and their level of academic optimism and they have found out that there was a clear and significant positive relationship between how students perceived poverty and their academic optimism. However, the study did not find any significant indirect impact between how students perceive poverty and their academic optimism through government assistance.

Meanwhile, study of Hayat et al., (2022) compared and evaluated the relationship between the academic achievement of medical and paramedical students with hope and optimism and they found that students who had higher levels of academic optimism and hope also had higher academic achievement, with a significant positive correlation between student identification and academic achievement. The results also showed that students who had greater agency thinking and pathways thinking, which are dimensions of hope, had higher academic achievement. Furthermore, mindfulness-based cognitive therapy had a positive impact on the intervention group, increasing positive emotions like pleasure, hope, and pride while decreasing negative emotions like anger, anxiety, shame, disappointment, and fatigue ($P< 0.01$). The therapy was associated with an increase in trust and academic emphasis ($P < 0.01$) in the component of academic optimism, while having no significant effect on the sense of identity ($P > 0.01$). The results suggested that mindfulness training could be an effective intervention in promoting positive academic emotions and increasing academic optimism among students (Asani et al., 2022).

Students' Academic Optimism Measurement

The Survey Questionnaire of Students' Academic Optimism was actually designed by Tschannen-Moran et al., (2013) and was originated from the Academic Optimism Tool of Hoy et al., (2006), which included the Student Trust in Teachers Survey, the Identification with School Questionnaire, and an adaptation of Academic Press and has used structural equation modeling (SEM). Meanwhile, Beeyoki et al., (2021) study The Structural Model of Students' Academic Motivation Based on Teacher-Student Relationship, Attachment to School, and Metacognitive Awareness by the Mediator of Academic Optimism among High-School Students have applied structural equation and modeling correlation while Hayat et al., (2022) have employed descriptive-correlative and cross-sectional research design and utilized the Tschannen-Moran et al., (2013) student academic optimism questionnaire to evaluate the academic optimism of students. It comprises three components: a) student trust in teachers (consisting of 10 items), b) students' opinions regarding the academic press (SAP) (comprising 8 items), and c) the identification of students with their school (including 10 items). Participants rated the extent to which each item accurately described them on a 5-point Likert scale. Usan et al., (2023) used quantitative approach employing semi-intervention type with convenience sampling to get the needed results.

Students' Academic Engagement

The concept of student engagement refers to the extent to which students are actively participating and involved in their own learning and school life. Abbot- Chapman et al., (2014) mentioned in their study that students' participation in a range of activities, including sports, associated with higher levels of school engagement. School engagement was found to mediate the association between the personality characteristic of agreeableness and education outcomes. Meanwhile, Amir et al., (2014) explored students' engagement level at schools based on gender and age and the results indicated that students' engagement levels in school varied based on their age and gender. Younger students exhibited higher levels of school engagement compared to older students. Additionally, female students reported higher levels of engagement compared to male students.

In the study of Gray and DiLoreto (2016), student engagement is defined as "students' willingness, need, desire, and compulsion to participate in, and be successful in, the learning process" as it also mediates the relationship of learner interaction and instructor presence on both perceived student learning and student satisfaction. Peng (2017) analyzed and studied the current student engagement model in the context of

online learning activities and online student characteristics and introduced a student engagement model that considered three dimensions: behavioral engagement, cognitive engagement, and emotional engagement. He discussed student engagement as an important element of active learning and participatory learning and an important factor in student learning success.

One of the most pressing issues in the society today is ensuring that students can adapt to the constantly changing environment they live in. One way to achieve this is by promoting good school adjustment. The study of Goñi et al., (2018) revealed that students born to native parents had higher levels of affective engagement and achieved better academic results. In general, girls had a higher level of adjustment than boys, suggesting that gender plays a role in school adjustment Also, students in the last two years of secondary school had lower levels of performance and engagement compared to those in the first two years of secondary school and those in higher education. Along this, Martinez et al., (2019) investigated the relationship between academic engagement, psychological capital (PsyCap) resources (efficacy, hope, optimism, resilience), and academic performance among undergraduate students in two different universities in Spain and Portugal. It was revealed that relationship existed between academic engagement, psychological capital (PsyCap), and academic performance in both samples (Spain and Portugal). The findings also supported psychological capital as a full mediator in the relationship between academic engagement and academic performance. This suggests that academically engaged students are more likely to possess higher levels of psychological resources, which, in turn, positively influence their academic performance. Another study conducted by Kim et al., (2019) examined university students' perceptions of e-learning to understand the mediating roles of academic engagement and digital readiness in relation to academic achievement within the context of an e-learning environment at a Korean university. The results of the study revealed the significance of students' academic engagement and digital readiness as mediators in their perceptions of e-learning, which in turn predicted their academic achievement (as measured by grade point average). The findings indicated that while students generally had positive perceptions of e-learning experiences on campus, their digital skills played a crucial role in their ability to effectively engage in academic work and actively participate in the e-learning environment.

According to the study of Bond et al., (2020) entitled “Mapping Research in Student Engagement in Educational Technology in Higher Education: A Systematic Evidence Map”, there is a lack of consensus on the definition of student engagement, as evidenced by the fact that only 7% of the 225 studies in the corpus attempted to define the concept. The most commonly cited definitions of student engagement in the studies were those that emphasized active participation and involvement, as well as interaction with peers and faculty. Other definitions included expending time and effort, as well as physical and psychological energy. The lack of a standardized definition for student engagement highlights the complexity of the construct and the need for a clearer understanding across the field. Therefore, in this study, the researchers define the term “Student Engagement” as the energy and effort that students employ within their learning community, which are observable via any number of behavioral, cognitive, or affective indicators across a continuum and that is shaped by a range of structural and internal influences, including the complex interplay of relationships, learning activities, and the learning environment. This means that more students are engaged and empowered within their learning community, the more likely they are to channel that energy back into their learning, leading to a range of short- and long-term outcomes, that can likewise further fuel engagement.

From 2020 onwards, research topics about engagement has shifted towards the engagement of students in digital or online learning due to the pandemic. According to Wester, et al., (2021), a significant decline in engagement primarily in the emotional engagement category has been seen though there was no significant change in cognitive engagement, with students reporting a drastic decline in positive attitudes. In their investigation, 104 students out of 178 (58%) mentioned the connection of their learning motivation with the COVID-19 pandemic, which led to feeling "very unmotivated" to study and learn. The COVID-19 pandemic affected students' mental health, and/or their ability to work and relax in the same environment. Thus, it has affected the students' mental health, and/or their ability to work and relax in the same environment and resulted to decrease in their positive attitude towards a subject (Limniou et al., 2022 and Wester et al., 2021). Students' Academic engagement of students is influenced by multiple factors, including their individual traits, the teacher's approach, the learning methodology, their peers, and the learning environment. These factors can be categorized into different components, such as cognitive, metacognitive, affective, social, task-related, communicative, and foreign language-related aspects (Amerstorfer & Münster-Kistner, 2021). In addition, students' engagement become challenging in both the online and offline settings. To achieve engagement, teachers need to be highly committed and dedicated. This requires them to be open-minded and reflective individuals who are willing to continuously update their professional development (Ginting, 2021). Furthermore, Wang et al., (2021) aimed to define academic burnout and examine the connections between academic burnout, academic engagement, and psychological capital in nursing students attending traditional Chinese medicine universities. Results showed that 39.29% of the participants experienced some level of academic burnout. Academic engagement and psychological capital were found to have a negative correlation with academic burnout among these nursing students. Additionally, psychological capital was positively associated with academic engagement. These findings suggest that academic engagement played a partially mediating role in the relationship between psychological capital and academic burnout.

Meanwhile, Perry (2022) highlighted the importance of student engagement in STEM education in his study entitled "Students Engagement, No Learning Without it ". His study mentioned the National Association of Independent Schools that provided its members access to a student engagement survey which schools could use for school accreditation and improving student engagement in schools. Accordingly, student engagement plays a crucial role in academic success, and this is especially important during emergencies involving a sudden change in educational setting (Limniou et al., 2022 and Perry, 2022).

Students' Academic Engagement Measurement

Measuring Students' Academic Engagement is essential for understanding how students interact with their learning environments, both online and in traditional settings. Several studies have developed and employed various tools to assess academic engagement, each focusing on different aspects, such as behavioral, cognitive, and affective engagement.

Gray & DiLoreto (2016) used 5 questions in a form of survey questionnaire to assess the level of students' engagement of the students. Other questions are about students' satisfaction and perceived learning. Participants were students enrolled in a minimum of one online course during the spring 2015 semester. The descriptive data of the study are summarized by the means, standard deviations, and range for each of the variable is reported and findings have concluded that students' engagement mediates the relationship

of learner interaction and instructor presence on both perceived student learning and student satisfaction. Meanwhile, the study of Martínez et al., (2019) and Wang, et al., (2021) measured the academic engagement using the Short (nine-item) Utrecht Work Engagement Scale (Schaufeli, Bakker & Salanova, 2006). The academic engagement of participants was assessed using the 17-item academic engagement scale (AES), which was a modified version of the Utrecht Work Engagement Scale-Student (UWES-S) (Schaufeli et al., 2002a) by Li and Huang (2010). The AES included three subscales, namely dedication (5 items), vigor (6 items), and absorption (6 items). Each item was rated on a 7-point Likert scale, with higher scores indicating greater academic engagement. The AES demonstrated good reliability and structural validity. The research of Kim, Hong, & Song (2019) used the scale created by Handelsman, Briggs, Sullivan, and Towler (2005) in assessing the level of academic engagement of the students, which they defined as the psychological and behavioral efforts and investment made by a student in their academic work to learn, understand, and master skills and knowledge. Further, the study of Limniou, et al., (2022) used 38 questions that aimed to assess students' engagement with their learning processes, including factors such as clear goals, teacher support, teacher feedback, teacher facilitation, online activities, synchronous session, collaborative learning, and learning outcome. The study identified 12 subcategories related to challenges and opportunities in online learning, which were grouped into three main theme categories: Behavioral, Affective, and Cognitive engagement dimensions. These theme categories and subcategories were defined based on abstract concepts extracted from the data, such as lack of communication, heavy workload, interactive learning, authentic assessment, technical issues, and lack of personalized learning.

Socio Economic Status

According to Tschannen-Moran et al. (2013) there was a noteworthy negative correlation between academic achievement and socio-economic status (SES). This indicated that there was a significant correlation between academic achievement and socioeconomic status, with higher socio-economic status being associated with lower academic achievement levels. Moreover, research of Tetzner & Becker (2018) revealed that parental socioeconomic status positively affected adolescent optimism, suggesting that favorable socioeconomic conditions and associated advantages contribute to a more positive outlook. This means that adolescents from more favorable socioeconomic backgrounds, where their parents have higher socioeconomic status, tend to have a more positive outlook on life compared to adolescents from lower socioeconomic backgrounds.

Moreover, the study of Stumm et al., (2019) showed that socio-economic status (SES) and genetic differences aggregated in Genetic Polygenic Scores (GPS) were powerful predictors of educational achievement, which accounted for 27% of variations in children's achievement during compulsory schooling. The influence of GPS and SES was most pronounced at the extremes of the achievement distribution. For instance, high GPS could partially compensate for the disadvantages faced by children from low-SES families, significantly increasing their chances of attending university.

Students whose parents/guardians had low educational attainment tended to have low total family income which affect the continuance of students with their studies (Avilado, Enierga, & Llave, 2020). The study of Nja, et al., (2022) discussed that family income encompasses both absolute and relative aspects, affected students' cognitive ability, academic performance, and study habits. While absolute income is strongly correlated with the physical or objective development of children's outcomes, relative income relates more

to emotional and psychological aspects. It becomes evident that a combination of economic stability and a positive social environment is essential for enhancing science students' cognitive ability, academic achievement, and study habits. Recognizing the connection between poor academic performance and low SES could help teachers identify students who might face challenges at home (Abduh, Purwanta, & Hermanto, 2023).

The impact of parental involvement on a child's academic performance or achievement varies depending on the socio-economic status of the child's parents. the influence of parental involvement on a student's educational outcomes is not the same for all students and can be influenced by their family's socio-economic background. Also, the relationship between certain aspects of parental involvement and student achievement can be moderated by socio-economic status (SES), particularly as measured by parental education (Tan, Lyu, & Peng, 2019).

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Thus, a family's socio-economic status affects the children's capacity and capability to attain quality education. Access to education and equity in education is scarce among low-income families (Rombaoa, 2019). Families from higher social classes provide their children with advantages in acquiring educational qualifications, primarily attributed to the concept of cultural capital, which is recognized as a significant contributor to academic achievement (Broer et al., 2019).

Use of Technology in Learning

In recent years, virtual education has become increasingly significant, particularly due to the pandemic.

The availability of electronic devices and services has become an urgent priority, highlighting the need to acquire digital skills such key technologies like cell phones, iPads, computers, and the internet have revolutionized communication and teaching methods, fostering deeper learning experiences and skill development in problem-solving, creativity, and critical thinking. These digital skills are essential for effective participation in the teaching and learning process (Abanto, 2023). This leads to the understanding that technology becomes more intensely important in reshaping activities in homes, workplaces, and classrooms, influencing communication, creation, learning, and teaching. Integrating technology into the curriculum empowers students to take ownership of their learning. Thus, educators are increasingly adopting new technologies such as mobile learning, online and blended learning, and e-textbooks to provide technology-enabled learning experiences. These advancements facilitate rapid and widespread information exchange, leading to positive outcomes for students when applied in education (Baylen, 2018; Murshed et al.,2020).

According to the study of Marcial (2020), the perception of Gen Z students about technology are better employment prospects in the future, and access to more information. Statistics indicate that a significant portion of Gen Zers students use technology for learning, including watching lessons online and reading e-books. However, Gen Zers experience negative effects of technology, including low self-esteem, lack of confidence, exposure to inappropriate material, and the risk of cyberbullying. Facebook addiction and behaviors tied to narcissism are also reported among teenagers due to social media. Other damaging impacts include a breakdown of communication and human interaction, degraded societal morals and values, an inability to handle normal tasks, and the misuse of widely available information.

Another research on the use of technology and its effect on learning shows that spending more time on cellphones and playing video games during weekdays associated with lower academic performance. Engaging in online risk experiences, such as playing with strangers and seeing violent content, also associated with lower academic performance. However, students who believe that playing video games after 9 pm affects their sleep are more likely to have higher GPA scores (Ramírez, et al., 2021). On the contrary, the study of Schindler et al. (2017) highlights the technology's influence on student engagement, particularly emphasizing digital games and web-conferencing software as highly effective tools. Digital games, designed for authentic learning experiences and enjoyment, excel in engaging students across various indicators. Web-conferencing software, offering numerous collaborative features, enhances student engagement significantly. Facebook also appears as impactful due to its familiarity and versatility. However, wikis demonstrate the lowest influence on engagement.

Synthesis of the State-of-the-Art

The related literature and studies gathered and reviewed provided the baseline information and fruitful insights and contribution of the conceptualization of the study.

Academic Optimism by Hoy et al., (2006) have been the center of the studies on the past years by different researchers, and associated it with different variables. For instance, academic optimism which was on teachers and schools perspective was related to school principals' transformational leadership and teachers' professional commitment (Hong, 2016), policies and procedures that support and encourage teachers' efforts and allow them to do their jobs better (Anderson et al., 2018), relationships between the domains (Oludipe & Dixon, 2020), hope (Rand et et al.,2020), positive psychology studies and supports democratic parenting, school climate, self-concept, and internal locus of control as ultimate factors for creating students' academic optimism (Ratnawati et al., 2021). Meanwhile, Usan et al., (2022) have analyzed the relationship of self-efficacy, optimism, resilience, and the contribution of perceived stress (Velea et al., 2021) on academic performance. On the other hand, Tschannen-Moran et al., (2013), have coined the term Students' Academic Optimism and developed the Student's Academic Optimism Survey Questionnaire Tool. Tschannen-Moran et al., (2013) revealed that there is a noteworthy negative correlation between academic optimism and socio-economic status which was contradicted by the study of Othman et al., (2021) saying that there was a clear and significant positive relationship between how students perceive poverty and their academic optimism while indicating that higher parental SES positively impacts adolescent optimism (Tetzner & Becker, 2018). On the other context, Stumm et al. (2019) demonstrated that SES and genetic factors accounted for significant variance in children's academic achievement while Rombaoa (2019) emphasized the influence of SES on access to quality education.

Furthermore, Hayat et al., (2022) compared and evaluated the relationship between the academic achievement of medical and paramedical students with hope and optimism while Asani et al., (2022) and Panahali et al., (2023) discussed the effectiveness of mindfulness training as an intervention in boosting academic emotions and academic optimism among students.

Student Engagement is the energy and effort that students employ within their learning community, observable via any number of behavioral, cognitive or affective indicators (Peng, 2017) as analyzed across a continuum. It is shaped by a range of structural and internal influences, including the complex interplay of relationships, learning activities and the learning environment (Bond et al., 2020). Goñi et al., (2018) revealed that students born to native parents had higher levels of affective engagement and achieved better academic results. The relationship of learner interaction and instructor presence on both perceived student learning and student satisfaction also indicates student's engagement (Gray and DiLoreto, 2016) while personality characteristic of agreeableness (Abbot- Chapman et al., 2014), age and gender (Amir et al., 2014), psychological capital (Martinez et al., 2019) and digital readiness (Kim et al., 2019) served as the mediator in the relationship between academic engagement and academic performance.

Technological advancements have greatly transformed learning, offering both benefits and challenges. Baylen (2018) and Marcial (2020) noted the positive impacts of technology on learning and skill development, though they also pointed out negative effects like low self-esteem and cyberbullying. Meanwhile, Ramírez et al. (2021) associated excessive cellphone use and online risks with lower academic performance and Schindler et al. (2017) highlighted the effective role of digital games and web-conferencing software in boosting student engagement.

Gap Bridged by the Study

While previous studies have explored the impact of socio-economic status (SES) on Academic Optimism with mixed results (Tschannen-Moran et al., 2013; Othman et al., 2021; Tetzner & Becker, 2018), this research aims to clarify these discrepancies by focusing on the relationship of parental education and the household income to the students' academic optimism and engagement.

Also, Anderson et al., (2018) and Ratnawati et al. (2021) emphasized the need for more extensive research on academic optimism across different school levels and regions and different locations and populations. Academic optimism research often focuses on the teachers and school perspective and academic achievement metrics. This study on the other hand, considers the students perspective on trust in teachers, academic press, and identification with school as components of students' academic optimism of Tschannen-Moran et al., (2013), providing a more comprehensive visualization of academic optimism impact on student engagement and experiences.

Additionally, the COVID-19 pandemic highlighted significant challenges in maintaining student engagement, with studies reporting declines in emotional engagement (Wester et al., 2021) and suggesting innovative approaches (Limniou et al., 2022) to students. Furthermore, while technological advancements have transformed learning environments, presenting both opportunities and challenges (Baylen, 2018; Schindler et al., 2017), they also pose risks such as cyberbullying and low self-esteem (Marcial, 2020). This study investigates how access to technology and internet are related to students' academic optimism and students' academic engagement, thus, highlighting the need for accurate and current references on student issues in education, particularly regarding academic optimism and engagement in post-COVID-

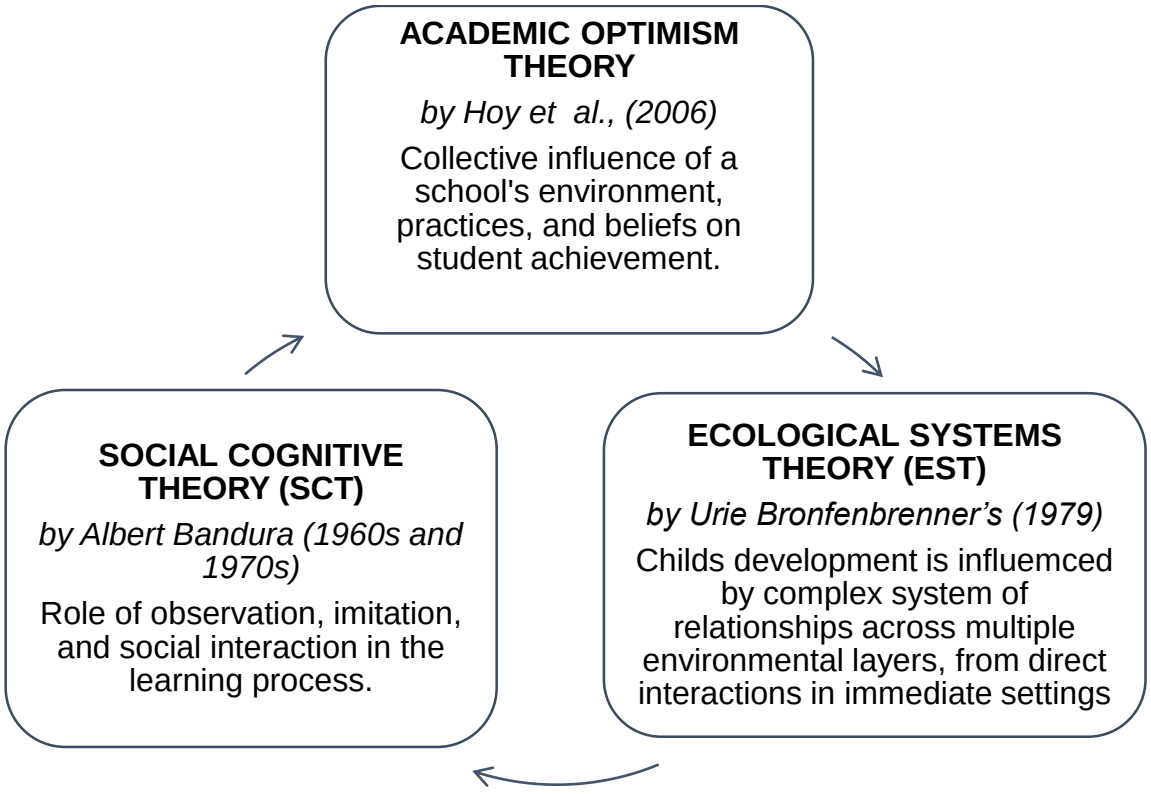
19 situation and ultimately aiming to enhance academic experiences, outcomes and success, especially in rural areas like Sagñay District.

Theoretical Framework

This study incorporates the Academic Optimism Theory, Social Cognitive Theory (SCT) and Ecological System Theory (EST) to investigate the relationship between students' academic optimism, academic engagement, and socio-demographic technological profile in public secondary schools in Sagñay District.

Figure 1.

Theoretical Paradigm



Academic Optimism Theory of Hoy et al., (2006), highlights the collective influence of a school's environment, practices, and beliefs on student achievement. The theory integrates three core elements: academic emphasis, collective efficacy, and faculty trust. When these elements are present, they create an optimistic academic climate that enhances student performance and overall school effectiveness. It supports that schools with high levels of academic optimism achieve better student outcomes, regardless of socioeconomic factors, making it a valuable framework for improving educational success. In this study, it serves as the main foundation of students' academic optimism and provides an understanding of how various factors such as parental occupation, educational attainment, monthly income, access to the internet, and access to technology are all related to their academic optimism (trust in teachers, academic press and identification with school). For example, students from lower-income families may face more challenges in accessing technology and resources, which could affect their academic optimism and engagement levels.

Urie Bronfenbrenner's Ecological Systems Theory (1979) posits that child development is influenced by a complex system of relationships across multiple environmental layers, from direct interactions in immediate settings like family and school (microsystem) to broader society, and cultural contexts (macrosystem), as well as changes over time (chronosystem). To fully understand a child's development, one must consider both the child's direct environment and the interplay with larger societal forces (Evans, 2024). In this study, the relevance of Ecological Systems Theory (EST) examines how different environmental systems interact to influence an individual's development. The microsystem (parent's occupation, highest educational attainment, socio- economic status, access to internet and technology), mesosystem (interactions between microsystems), exo-system (technological literacy) and macrosystem (student's academic optimism and academic engagement) all contribute to a student's academic experiences. Thus, it implies that the socio-demographic and technological profiles of students, as part of their ecological systems, can significantly impact their academic optimism and engagement.

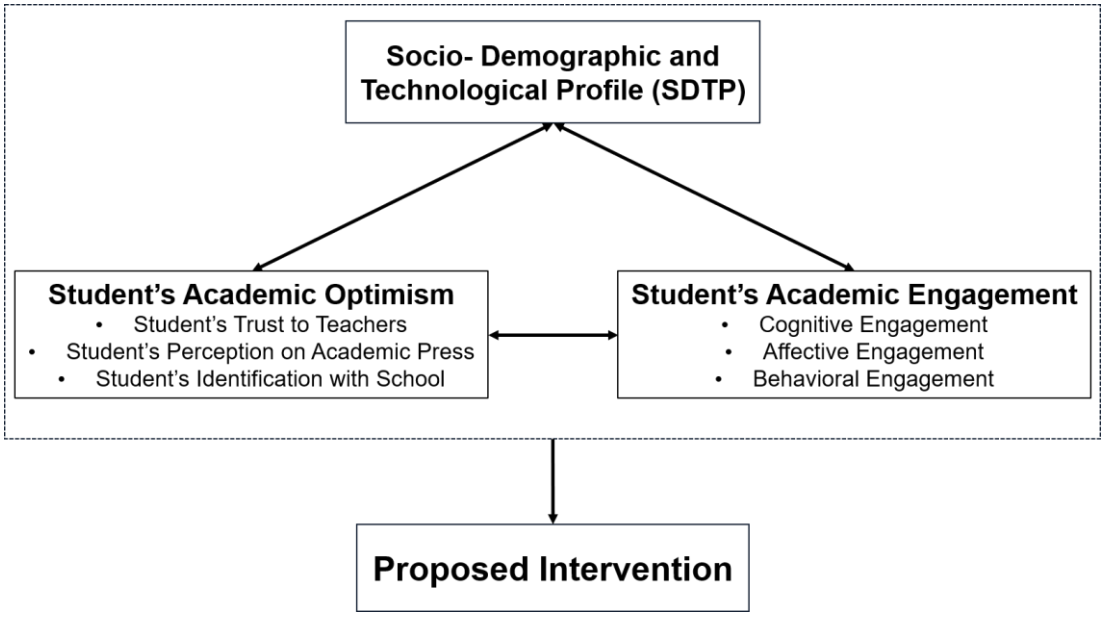
The social cognitive theory (SCT) is a theory of learning and behavior that emphasizes the role of observation, imitation, and social interaction in the learning process. It was developed by psychologist Albert Bandura in the 1960s and 1970s as an extension of his earlier work on social learning theory. In Social Cognitive Theory (SCT), individuals are viewed as active agents who proactively navigate life by making judgments about the interplay among their environment, personal factors, and behavioral consequences. It goes beyond traditional learning theories by acknowledging the influence of cognitive processes like thoughts and expectations onto the behavior of an individual (LaMorte, 2022). SCT suggests that individuals learn through observing others and that their self-efficacy beliefs, or their beliefs in their ability to succeed at a particular task, play a crucial role in shaping their behavior. SCT is important for understanding the relationship between students' academic optimism, engagement, and socio-demographic technological profile because it highlights the role of the social environment and self-efficacy in shaping students' beliefs about their academic abilities and their motivation to learn. For example, students who observe their parents, teachers and peers being successful academically are more likely to develop a positive outlook on their own academic abilities and to engage in their learning. Similarly, students with high self-efficacy are more likely to be academically optimistic and engaged.

Conceptual Framework

The conceptual framework of this study proposes that student's academic optimism and student's academic engagement are correlated to their socio-demographic and technological profile.

Figure 2.

Conceptual Paradigm



The framework also suggests that there is a correlation between academic optimism and academic engagement. The independent variables are the Socio-Demographic Technological Profile, consisting of parental monthly income, parental occupation, parental highest educational attainment, access to technology and access to internet.

These factors are manipulated or categorized to observe their relationship with the dependent variables. The dependent variables include Students' Academic Optimism, comprising student trust to teachers, student perceptions of academic press, and student identification with school. Additionally, Students' Academic Engagement is a dependent variable with cognitive, behavioral, and affective engagement as its dimensions. The intervention will be proposed after getting the relationship of socio- demographic technological profile of the students to their academic optimism and academic engagement

Definition of Terms

To aid in comprehending the study, the following terms are hereby defined conceptually and operationally:

Academic Optimism. It refers to the belief of teachers and school leaders in their ability to positively influence student learning outcomes (Hoy et al., 2006). In this study, it refers to a school culture that is characterized by a belief in the ability of all students to succeed academically.

Engagement. It refers to the degree to which students are involved in and invested in their learning (Salmela-Aro, et al., 2022). In this study, it refers to the state of being mentally and emotionally involved in something. It is characterized by a sense of interest, focus, and commitment.

Intervention. It refers to the act of becoming involved in a situation in order to improve it or prevent it from getting worse. In this study, it refers to the strategy or set of strategies used to help students who are struggling academically to reach their academic potential.

Optimism. It is an inherent inclination within individuals that influences the way individuals perceive and interpret external circumstances, ultimately influencing one's decision-making processes (Usán et et al.,2022). In this study, it is a general mental attitude characterized by a hopeful and positive outlook on life. In this study,

Socio- Demographic Technological Profile (SDTP). It is a term that encompasses a wide range of factors related to a person's social and economic status, their demographic characteristics, and others. In this study, socio-demographic and technological profile encompasses factors, such as parental socio-economic status, parental occupation, parental highest educational attainment and access to technology and internet

Access to Internet. It facilitates the exchange of data, information, and services across vast distances, enabling communication, collaboration, and access to resources on a global scale. In this study, it refers to having an access to Wireless fidelity (Wi-fi), Data, Piso Net and other form of signal using networks that rely on various technological components, such as routers, servers, and protocols.

Access to Technology. It refers to the application of scientific knowledge for practical purposes or applications to solve problems, improve efficiency, and enhance our lives. In this study, access to technology refers to the availability of modern gadgets to the students in learning such as cellphone, tablet, desktop laptop, or computers.

Profile. It refers to a short description of someone's life, work or character. In this study, it refers to the collective information of the students' socio- demographic and technological profile.

Socio- Demographic Profile. It refers to the social, economic and demographic position of a child's parents. In this study it is identified through parental income, education level and occupation.

Technological Profile. It refers to a detailed overview or analysis of an individual's technological capabilities, infrastructure, resources, and expertise. In this study, it is identified through access to technology and internet

Students' Academic Optimism (SAO). It refers to students' perceptions of trust in teachers, academic press, and identification with school that are related to their academic achievement (Tschannen-Moran et al.,2013). In this study, it is a belief of students in their ability to succeed academically and is characterized by a positive outlook on learning, a sense of self-efficacy, and a commitment to achieving their academic goals.

Student trust to teachers. It refers to a student's belief that their teachers are competent, caring, and trustworthy. In this study, it was measured by asking students to rate their agreement with statements such as " Teachers are always ready to help " and "Teachers are easy to talk to at this school".

Student Perceptions of academic press. It refers to a student's perception of the expectations and demands placed on them academically. In this study, it was measured by asking students to rate their agreement with statements such as "Student respect others who get good grades", "Students work hard to get good grades" and etc.

Academic Press. It encompasses the idea of creating an environment that encourages a culture of hard work, respect for peers, and dedication to academic tasks and activities (Fati et al., 2019). In this study, it

refers to having clear rules and expectations that everyone respects which can create pressure to excel but also encourages hard work and respect for others who are trying to do well.

Student Identification with School. It refers to a student's sense of belonging to and connection with their school. In this study, it was measured by asking students to rate their agreement with statements such as “I feel proud of being part of my school”, “School is one of my favorite places to be”, and etc.

Students’ Academic Engagement (SAE). It refers to the quality of students' involvement and connection with their educational activities and encompasses cognitive, emotional, and behavioral investment in learning academic content (Wang & Ye, 2021; Limniou, et al., 2022). In this study, it pertains to the extent of a student's involvement and participation in academic activities.

Affective engagement. It refers to a student's emotional investment in their learning. It includes feelings such as interest, motivation, and enjoyment. Affective engagement in this study includes students’ emotional investment, interest, and enthusiasm towards learning.

Behavioral engagement. It refers to a student's observable participation in learning activities. such as paying attention, completing assignments, and participating in class discussions. In this study, behavioral engagement pertains to their physical involvement, participation, and adherence to learning tasks.

Cognitive engagement. It refers to a student's deep involvement in learning. It includes processes such as critical thinking, problem-solving, and metacognition. In this study, it pertains to the extent to which students are intellectually involved in understanding, processing, and mastering academic content

Chapter III

Methodology

This chapter focuses on the discussion of research methods and procedures adhered to by the researcher in order to systematically answer the specific problems presented for investigation. Specifically, the research design, location of the study, sampling methodology, respondents, data gathering procedures, data gathering instruments and data analysis are explained in this chapter.

Research Design

This study utilized a descriptive-correlational design to examine and describe the relationships between variables without implying causation. This design measures the degree of association between variables and enables informed predictions based on identified relationships (Clarete et al., 2023). Specifically, it assessed the relationships between socio- demographic technological profile, students’ academic optimism, and students’ academic engagement in the sample population. The data collected allowed for analysis and interpretation of these relationships to formulate conclusions and explanations.

Locale of the Study

This study was conducted in Sagnay, Camarines Sur.

Figure 3.

Sagñay District Map

Sagñay District has seven (7) public secondary schools, five (5) of which are located in far flung area, one (1) in an island and two (2) near población. Sagñay is a 4th class municipality, considered as a rural area with 44.99% poverty rate which indicates a very high number of residents living in poverty compared to the national average (10.9% poverty incidence). To represent the schools in the district, the researcher has chosen the Nato National High School since it has the largest and biggest population among the public secondary schools in Sagñay District with 1,856 students from Grade 7 to 12 coming from different barangays in Sagñay and in the nearby town.

Sampling Methodology

To ensure the selection of a representative and efficient sample of participants, this study employed a cluster sampling methodology. In cluster sampling, researchers divide a population into smaller groups known as clusters, then randomly select among these clusters to form a sample which is often used to study large populations (Nanjundeswaraswamy, 2021). To determine the appropriate sample size, given the finite population of students in the school, the Cochran formula was utilized. This approach not only facilitated ease of data collection but also enhanced the generalizability of the findings to the broader student population within Nato National High School.

Respondents

The respondents to this study consisted of 320 students from Grades 7 to 12 of Nato National High School.

Table 1.

Distribution of the Respondents of the Study

Grade Level	**Population**	**Sample**
Grade 7	259	53
Grade 8	279	53
Grade 9	284	53
Grade 10	366	53
Grade 11	315	54
Grade 12	353	54
Total	**1856**	**320**

Using the Cochran's' Formula with a 5% Margin of Error and 95% Confidence Level, from the total number population of 1856. The number of respondents was narrowed down to 320 students of Nato National High School.

Cochran Formula:

$$n = \frac{n_o}{1 + \frac{(n_0 - 1)}{N}}$$

Where:

n_0 = The sample size calculated from the Cochran formula

N = Population size

n = Adjusted sample size for finite population

Cochran formula is used to calculate the essential sample size for the required level of precision, confidence level and the estimated proportion of the attribute present in the population. Cochran formula is most suitable for a large population (Nanjundeswaraswamy, 2021).

Through equal allocations, the researcher had included students equally from different levels, the researcher aims to gather data from a broader perspective, allowing for a more comprehensive analysis.

Equal Allocation= $\frac{N}{n}$= $\frac{320}{6}$= 53 or 54

Where:

N= Sample size from Cochran

n= Number of Grade level

The researcher also conducted Key Informant Interview (KII) with 30 students- 15 students in junior high school and 15 students in senior high school. They were chosen according to the answers reflected in their survey questionnaires.

Data Gathering Procedure

To gather the necessary data, the researcher followed several methodical steps.

Validation of Survey Questionnaire

Initially, survey questionnaires were adopted, modified, and created to achieve the research objectives. The researcher sought permissions from authors of the survey questionnaire that was adopted for the study. These questionnaires were subjected to a validity test by four expert validators using the Survey Instrument Validation Rating Scale of Oducado (2020). This step ensured that the questions were appropriate and effective for measuring the intended constructs.

Reliability Testing of Survey Questionnaire

After establishing the validity of the survey questionnaires, a pilot test was conducted to assess the reliability. This involved using Cronbach's Alpha, a statistical tool that measures internal consistency, to confirm that the questionnaires reliably measured what they were intended to measure. The adapted survey questionnaire for students' academic optimism had a reliability result of 0.760, and all indicators were accepted. The modified survey questionnaire for students' academic engagement had a Cronbach's alpha reliability result of 0.718. The items for each area achieved acceptable internal consistency.

Administration of Survey Questionnaire

Following the validation and reliability tests, the researcher sought and obtained approval to conduct the study from the principal of Nato National High School. It involved formally requesting permission to conduct the survey with the school's students. The approval letter outlined the study's objectives, the procedures to followed, and the anticipated benefits of participation, thereby ensuring transparency and gaining the principal's support. Once permission was granted, the survey questionnaires were distributed to the selected respondents. The researcher also asked the permission of the respondents beforehand through a consent form that they filled out and explained the purpose of the study. The data collection process adhered to standard protocols to maintain consistency and accuracy.

Conduct of Key Informant Interview

The responses from the survey questionnaires were then analyzed, and the results formed the basis for Key Informant Interviews (KII). During these interviews, the researcher delved deeper into the students' answers, categorizing them into themes and patterns. This analysis provided a richer understanding of the relationships between the variables, enabling the researcher to draw more substantial implications and conclusions about the study's findings.

Data Generating Instruments

The researcher utilized a diverse range of data-gathering instruments.

Socio- Demographic Technological Profile Survey Questionnaire

To identify the socio-demographic technological profiles of the respondents, which was a self-made survey questionnaire, was used. This questionnaire collected data on the respondents' personal identity, grade levels, parental monthly incomes, parental highest educational attainments, and parental occupations. Additionally, there were five questions about the respondents' access to internet and technology which students answered by checking the relevant options on the survey questionnaire.

Students' Academic Optimism Survey Questionnaire

To measure the levels of students' academic optimism in terms of trust in teachers, perceptions of academic press, and identification with the school, the researcher adopted a survey questionnaire developed by Tschannen-Moran et al. (2013), consisting of 28 items rated on a 5-point Likert scale of agreement. Furthermore, to assess the students' academic engagement—encompassing cognitive, behavioral, and affective engagement—the researcher used modified survey questionnaires derived from Pareja's (2009) original Student Engagement Scale, which included 15 items rated on a 5-point Likert scale of agreement. To further validate the results, Key Informant Interviews (KII) were conducted with 30 selected students. The KII questions were derived from the survey questions that had lower response rates.

Students' Academic Engagement Survey Questionnaire

From the initial validation using the Survey Instrument Validation Rating Scale of Oducado (2020) and reliability testing using Cronbach's Alpha, to the administration of the survey and the conduct of KIIs, this study ensures the validity and reliability of its results.

Data Analysis

In analyzing the data from the results of each research problem (SOP), several steps were undertaken. Firstly, to explore socio-demographic and technological profile, response frequency was computed for variables like parental income, parental highest educational attainment, parental occupations and access to technology and internet

In determining the level of Students' Academic Optimism and the level of Student's Academic Engagement, descriptive statistic, specifically, the mode, was used. It was ranked accordingly to identify which indicators comes first and which indicators indicated low responses. In identifying the relationship between Students' Academic Optimism and Students' Academic Engagement, a Spearman Rho correlation analysis was performed to examine the relationship between these variables. Spearman's rank correlation was used to assess the strength and direction of association between two variables (Students' Academic Optimism and Students' Academic Engagement) that have been ranked. It evaluated the degree to which the relationship between these variables could be described using a monotonic function (Gupta, 2024).

The formula for Spearman's rank coefficient is:

$$\rho = 1 - \frac{6\Sigma\, d_i^2}{n(n^2-1)}$$

Where:

$\boldsymbol{\rho}$ = Spearman's rank correlation coefficient

di = Difference between the two ranks of each observation

n = Number of observations

The Spearman Rank Correlation can take a value from +1 to -1 where a value of +1 means a perfect association of rank, a value of 0 means that there is no association between ranks and a value of -1 means a perfect negative association of rank.

In determining how socio-demographic and technological profiles correlated with students' academic optimism and students' academic engagement, ordinal regression analysis was used. Ordinal regression is a statistical method used to model how one or more independent variables relate to an ordinal-level dependent variable (Williams, 2008). In this study, the proportional odds model was used, assuming that the effects of predictor variables on the log odds of being in a higher category of the ordinal outcome were consistent across all levels of the outcome presented. Moreover, McFadden's pseudo R2 in this model is a measure of the goodness-of-fit of the ordinal regression model. It compares the log-likelihood of the fitted model to the log-likelihood of a model with no predictors.

Applying ordinal regression analysis helps to explore how socio-demographic technological profiles predict students' academic optimism and engagement. Socio-demographic factors like parental occupation, education, income, and access to internet and technology were treated as independent variables. This methodical approach enables researchers to identify significant relationships and informs strategies for improving educational outcomes.

The results from these analyses provided insights in aiding the formulation of interventions as addressed in SOP 5.

Chapter IV

Results

This chapter primarily focuses on the results derived from the survey questionnaire.

Socio-Demographic and Technological Profile of the Respondents

Socio- Demographic Profile of the respondents encompassing the Parental Occupation based on 2012 Philippine Standard Occupational Classification (PSOC) Major Categories, the Parental Monthly Income based on 2018 Philippine Institute for Development Studies (PIDS) and the Parental Educational Attainment alongside with its frequency and percentage is outlined in Table 2. While Table 3 shows the respondent's profile on their access to internet and technology.

Table 2.

Socio- Demographic Profile of the Respondents

2012 PSOC Categories	Parental Occupation			
	Father	%	Mother	%
1. Managers	10	3.13%	4	1.25%
2. Professionals	6	1.88%	8	2.50%

3. Technicians and Associate Prof.	12	3.75%	1	0.31%
4. Clerical Support Workers	4	1.25%	7	2.19%
5. Service and Sales Workers	33	10.31%	72	22.50%
6. Skilled Workers (Fishing/Farming)	96	30%	24	7.50%
7. Craft and Related Trade Workers	23	7.19%	4	1.25%
8. Plant and Machine Operators	53	16.56%	3	0.94%
9. Elementary Occupations	37	11.56%	80	25.00%
10. Non-gainful Activities etc.	17	5.31%	108	33.75%
11. N/A (Non- Existent)	29	9.06%	9	2.81%
2018 PIDS Income Brackets	**Parental Monthly Income**			
Below 10,957	182	62.54%	124	40.00%
10,957 to 21,193	74	25.43%	48	15.48%
21,194 to 43,827	14	4.81%	26	8.39%
43,828 to 131,483	6	2.06%	5	1.61%
No Income	15	5.15%	108	34.84%
Education Level	**Parental Educational Attainment**			
Elementary	83	28.52%	65	20.97%
Secondary	145	49.83%	184	59.35%
Tertiary	61	20.96%	60	19.35%
Masters	2	0.69%	2	0.65%

Socio- Demographic Profile

As outlined in Table 2, among the 320 respondents, the most prevalent of the fathers' occupations are under the category of skilled agricultural, forestry, and fishing workers with 96 individuals (30.00%) working in the field as farmers and fishermen while among the mothers, the highest percentage is under the category of non-gainful activities and special occupations, mainly as being housewives with 108 (33.75%) individuals. Moreover, the majority of parental monthly incomes fall below 10, 957 with 182 (62.64%) for fathers and 124 (40%) for mothers. Additionally, both parents have finished secondary education with 145 or 49.53% of the fathers and 184 or 59.85% of the mothers. Other occupations, monthly income and educational attainment of the respondents are outlined in the table.

Technological Profile

Table 3.

Technological Profile of the 320 Respondents

Access to Technology	**Technologies at home**		**Technologies owned and used**		**Technologies that are not owned but familiar with**	
	F	**n=320**	**F**	**n=320**	**F**	**n=320**
Cellphone	312	97.5%	299	93.44%	17	5.31%
Tablet	8	2.5%	3	0.94%	30	9.38%
Laptop	4	1.25%	1	0.31%	192	60%
Computer	12	3.75%	1	0.31%	45	14.06%
Cellphone and Tablet	4	1.25%	0	0.00%	0	0.00%
Cellphone and Computer	10	3.13%	0	0.00%	1	0.31%
Internet Access	**YES**	**n=181**	**NO**	**n=89**	**SOMETIME**	**n=50**
Wi-fi	96	53%	2	2%	8	16%
Data Registered	56	31%	24	27%	21	42%
Free Data	15	8%	20	22%	4	8%
Piso Net	12	7%	43	48%	15	30%

Based on Table 3, 97.5% of the respondents own a cellphone at home, totaling to 312 individuals, and 93.44% of these cellphones are owned and used by the respondents themselves.

Additionally, 192 individuals (60%) are familiar with using laptops, and 45 individuals (14.06%) are familiar with using computers, despite not owning any. Moreover, 181 out of 320 or 56.56% respondents have internet access in their area with 96 respondents (53.04%) accessing shared Wi-Fi, 89 individuals (27.81%) do not have internet access. Other ways of accessing internet are also outlined in the table.

Level of Students' Academic Optimism along Trust in Teachers, Students Perception on Academic Press and Identification with the school

The level of Students Academic Optimism is divided into 2 groups, that of the Junior High School and the other for the Senior High School. Using the Survey Questionnaire adopted from Tschannen-Moran et al., (2013), the most frequent responses from the respondents regarding their students' academic optimism, categorized into three domains: Students' trust in teachers, Students' perception of academic press, and Identification with school. These are shown in Table 4 and Table 5. To get the normal assumption and

minimal loss of information (Westland, 2022), results were obtained using a Likert scale ranging from 1 to 5 where 5 indicates "Strongly Agree," 4 indicates "Agree," 3 indicates "Neither Agree nor Disagree," 2 indicates "Disagree," and 1 indicates "Strongly Disagree." Responses of 4 and 5 were then merged to get the rank of each indicator. Also, the indicators are already arranged by rank.

Junior High School

As shown in Table 4, within the domain of students' trust in teachers, ten (10) items were assessed.

Table 4.

Junior High School Level of Student's Academic Optimism

Junior High School Student's Academic Optimism			
Trust to Teachers		**Level of Agreement (n= 212)**	**Rank**
1.	Teachers are always ready to help	89.15%	1
2.	Teachers at this school are good at teaching	86.79%	2
3.	Teachers always do what they are supposed to do	82.08%	3
4.	Students learn a lot from teachers in this school	77.83%	4
5.	Teachers are easy to talk to at this school	75.00%	5
6.	Teachers at this school do a terrific job	74.53%	6
7.	Teachers at this school are always honest with me	69.81%	7
8.	Students at this school can depend on teachers for help	68.87%	8
9.	Students are well cared for at this school	68.40%	9
10.	Teachers at this school really listen to students	66.98%	10
Academic Press		**Level of Agreement (n= 212)**	**Rank**
11.	My teachers believe that I can learn	88.68%	1
12.	Students work hard to get good grades	85.38%	2
13.	This school is serious about learning	84.91%	3.5
14.	The content of my courses is challenging	84.91%	3.5
15.	Students try hard to improve	82.55%	5

16.	Good grades are recognized	78.30%	6
17.	Students respect others who get good grades	74.06%	7
18.	I can get extra help at school if needed	68.87%	8
Identification with School		**Level of Agreement (n= 212)**	**Rank**
19.	I feel proud of being part of my school	83.96%	1
20.	School is more important than most people think	83.02%	2
21.	Teachers respect me	81.60%	3
22.	School is one of my favorite places to be	79.72%	4
23.	I feel like I am a part of my school	75.47%	5
24.	My teachers care about me	74.06%	6
25.	I fit in with students at this school	55.66%	7
26.	There are adults at school who are interested in me	46.70%	8
27.	Most of the things we learn in school are worthless	31.13%	9
28.	Going to school is a waste of time	8.96%	10

Students in Junior School express strong agreement with the statement that teachers are always ready to help (89.15%) that appears to be the 1st in rank among others while indicator that Teachers at this school really listen to students have 66.98%, which is the last in rank on this domain.

From the transcribed responses of the Key Informant Interviews regarding teachers at this school really listen to students, 3 themes have emerged as the reason students feel that way: lack of proper communication, trust issues and time constraints.

Not enough time for proper communication leads to the feeling of why their teachers don't listen to them as what informant A says,

> "… in terms of personal life or reason why nakakagibo ako nin bagay na medyo nakakaviolate sa rule, minsan I think dae ninda naiintindihan. Minsan tigpipirit man ninda intindihon pero I think kulang ang oras po ninda na magdangog." (…in terms of personal life or reason why I able to do things that violated the rules, I don't think they understood the reason. Sometimes they were trying to understand but I think, they had no time to really listen.)

While lack of proper communication leads is one of the reasons why students feel teachers didn't really listen to them as Informant B revealed,

> "Sometimes, lalo na kapag late kunware late po ako naglaog or nag- abot sa school tas may valid reason man talaga ako, hadaw late ako, may ibang teacher na nagtutubod sa reason mo, may iba

din na dae....” (Sometimes, like for example I were late, but I had my valid reason, there were teachers who believed my reason and there were teachers who won’t. That’s why for me, it is at all times that teachers will listen to you.)

Also, teachers didn’t really listen because they don’t trust their words in which according to Informant C,

> “… Feeling ko dae siya nagtutubod dawa may mga rason ako na mapatunay na bako man talaga ako ang nagkua. Feeling ko dae nagdadangog si Mam kan reason ko and mas nagdadangog siya sa mga kaklase ko.” (…I felt like she didn't believe me, even though I had reasons to prove it was not really me who took something. I feel that Ma’am does not listen to my reason and she listens more to my classmates.)

On students' perception of academic press domain as outlined in Table 5, 8 items were assessed, with statement My teachers believed that I can learn placed at rank 1 with 88.68% level of agreement. The statement I can get extra help from school if needed is the least with 68.87%. The responses from key informant interviews have shown that getting extra help from school is sometimes hindered by 3 themes: insufficient funds, lack of support, and poor communication. Informant A explained that,

> “Tabang from school para sa problema kan personal kong buhay, dae pa po ako nakaranas. Maybe because dae man po ako open sa mga problema ko. Pero po when in terms of tabang na mapataas ang marka ko, it’s my classmate…” (Help from school for my personal problems, I have not experienced that yet. Maybe because I am not open about my problem. But in terms of help to get high grades, it’s my classmates…)

in which not informing the school personnel about her need for help is the reason she isn't receiving assistance from the school. While Informant B had justified that it is because of insufficient funds and lack of support from the school as explain in this:

> “Dae ko po ramdam ang support kan school financially when the time na naglaban.... kami po ang naggastos sa gabos and naangutan pa ako ni nanay ta puros daa sana po ako gastos. Morally, kulang din po ang support kan mga teachers ta ang iba mayo lamang plus points sa grades.” (I didn’t feel the financial support of the school when we joined contests… we were the ones who funded everything and I was even once scolded by my mother because of too much expenses. Morally, support from the teachers was also lacking because some of them didn’t even give additional points for grades.)

In the domain of identification with school as outlined in Table 4, the students’ high level of agreement in the indicator I feel proud being part of the school has 83.96% high level of agreement and appears as the 1st in rank while the statement Going to school is a waste of time is the least with only 8.96% level of agreement. Hence, on the positive note, 91.04% of students are actually perceiving school as a time-worthy.

The responses from the Key Informant Interview revealed that going to school is not really a waste of time because of additional knowledge, awards and enjoyment they get. Informant A explained that going to school gives additional learning, in which she says,

> “Gusto ko po pirmi nasa school ta mas bwelo po ako igdi kesa sa harong. Sa harong po kaya grabe sugo si mama. Tsaka mas nakakanuod po ako igdi kesa sa harong.” (I really like going to school

because I feel freer here than at home. At home, my mother always has me running errands. In school, I learn more than I do at home.)

This corresponded with the response of Informant B in which she explained that going to school is not a waste of time but the other way around,

> "Bako po siyang waste of time. Actually po, ang pagklase po ang way para dae masayang ang oras ta mas nakakanuod pa po." (It is not actually a waste of time. Actually, going to school is a way not to waste any time because I am learning.)

Informant C also rationalized that going to school is not a waste of time rather it is rewarding and full of fun,

> "Minsan po nakakasayang sa pamasahe especially po pag mayong tultol na klase and attendance lang ang habol ko. Pero po at least may award na perfect attendance. Tsaka po mas maogma ang aldaw pag mayong teacher. Dawa po mayo nanunod-an pero at least po maka enjoy makipag-istoryahan sa mga kaklase ko." (Sometimes it feels like a waste of money, especially on days when there's no organized class and attendance is all that mattered to me. However, I still value having perfect attendance. Even when there's no teacher and we don't learn anything new, it's enjoyable to chat with classmates and have fun together.)

Senior High School

Table 5 shows that senior high school students express their trust to teachers through the indicator which is Teachers are always ready to help, receiving the highest level of agreement of 94.44% while Teachers at this school are always honest with me ranked the lowest among other indicators with 76.85% level of agreement.

Table 5.

Senior High School Level of Student's Academic Optimism

Senior High School Student's Academic Optimism		
Trust to Teachers	**Level of Agreement (n= 108)**	**Rank**
1. Teachers are always ready to help	94.44%	1
2. Teachers always do what they are supposed to do	92.59%	2
3. Teachers at this school are good at teaching	91.67%	3
4. Students learn a lot from teachers in this school	91.67%	4
5. Teachers are easy to talk to at this school	87.04%	5

6. Students at this school can depend on teachers for help	86.11%	6
7. Students are well cared for at this school	84.26%	7.5
8. Teachers at this school do a terrific job	84.26%	7.5
9. Teachers at this school really listen to students	80.56%	9
10. Teachers at this school are always honest with me	76.85%	10
Academic Press	**Level of Agreement (n= 108)**	**Rank**
11. This school is serious about learning	91.67%	1
12. Students try hard to improve	89.81%	2
13. My teachers believe that I can learn	88.89%	3
14. Students work hard to get good grades	86.11%	4
15. The content of my courses is challenging	84.26%	5
16. Students respect others who get good grades	83.33%	6
17. Good grades are recognized	81.48%	7
18. I can get extra help at school if needed	73.15%	8
Identification with School	**Level of Agreement (n= 212)**	**Rank**
19. I feel proud of being part of my school	91.67%	1
20. School is more important than most people think	85.19%	2
21. Teachers respect me	85.19%	3
22. School is one of my favorite places to be	84.26%	4
23. I feel like I am a part of my school	83.33%	5
24. My teachers care about me	75.93%	6
25. I fit in with students at this school	72.22%	7
26. There are adults at school who are interested in me	44.44%	8

27. Most of the things we learn in school are worthless	20.37%	9
28. Going to school is a waste of time	14.81%	10

To substantiate this data, key informant interview was then conducted. Through the responses, there are two themes that emerged why students feel that their teachers are not always honest with them: The first theme is the relationship dynamics that includes protecting feelings, strategic pedagogy, and part of classroom management to which informant A says:

> "Not all the time honest ang teachers samo dahil siguro habo ninda kami makulugan. For example, sa projects or activities, masabi sinda okay man so gibo mi pero ang totoo, dae man talaga gayo okay. Kulang sinda sa honest feedbacks kaya imbes po na mas mag- improve, nagsesettle na lang po sa medyo okay na." (Teachers are not always honest with us maybe because they don't want us to get hurt. For example, in projects or activities, they might tell us that our output is okay when it's not really. This lack of honest feedback prevents us from improving, and instead, we settle for just being okay.) This statement shows that the teacher may be trying to protect the student's feelings by not directly giving honest feedbacks or observations which the students could be a way for them to do better.

The second theme is the pressure to confidentiality of the information, avoidance of conflict and display of positive outcome. Informant B answered that the pressure of showing positive outcome and avoiding conflict is one of the reasons why teachers are not always honest.

> "Para po sako, most of the time bakong honest ang teacher especially in giving grades. For example po, kaitong grade 10 ako, may saro po akong kaklase na dae man gayo naglalaog, pirmi absent. Halos mayo quiz pero may grades.Tinaanan na lang po garo grades para dae na po siya magpagal tsaka naheherak din po siya sa kaklase ko ta baka dae makapaso." (For me, most of the time, teachers are not honest, especially in giving grades. For example, when I was in grade 10, I had this classmate who was always absent. He missed quizzes but still received grades. The teacher might have given him grades so that he wouldn't have to exert much effort, and our teacher pitied him, thinking he wouldn't be able to graduate.)

> The second domain of Students' Academic Optimism outlined in Table 5 is the Academic Press with 8 indicators. Among these indicators, the statement The school is serious about learning ranked 1st with 91. 67% level of agreement while the lowest in rank is the statement I can get extra help at school if needed with 73. 15% level of agreement.

To deepen the understanding about the result, responses from Key Informant Interview were analyzed and 3 key themes have emerged. These are lack of awareness, lack of necessary actions and lack of control. Informant A explained that not getting help from school most of the time is because the school is not aware of the student's situation.

> "… dae man aware ang school na may pinag- aagihan ako especially family problem…" (…because the school is not aware that I am going through something especially family problem…)

Informant B justified that he didn't get extra help from school because of lack of control due to overwhelming situations.

> "… when I feel so depressed po during the pandemic. Grabeng modules na dapat tapuson and dae ko po aram ang iinuton. Feeling ko po kapag nagreklamo ako, mayo man mangyayari kasi po nagsusunod man lang ang school and bawal man po ang face to face kaito…" (…when I felt depressed during the pandemic. There were a lot of modules that I needed to finish that time and I didn't know which one should come first. My feeling was that If I complained, it would be of no use because the school was just following the protocols and face to face class was strictly prohibited.)

While informant C explained that it is because the school don't take necessary actions.

> "…Nagreklamo po ako ta hababa ang grades ko. Nagreklamo po si Mama pero after kan pag-urulay, mayo man po nangyari. Naglangkaw lang po 1 point and dae din ako nakabali sa honors." (…I complained because my grade was low. My mother complained, but after that, nothing happened. My grade increased by one point, but I still wasn't included in the honor's list.)

The 3rd domain of students' academic optimism as shown in Table 5 is the identification with school where 91. 67% senior high school students expressed their agreement with the statement, I feel proud of being part of school which ranked first among other indicators while the statement Going to school is a waste of time gets 14.81% ranks the lowest. Since the statement is stated in negative way, positively, 85.19% of the students actually perceive the school as a worthwhile place to be. Key Informant Interview was then conducted to substantiate the data where two (2) key themes emerged.

The first key theme is building confidence. According to Informant A, going to school is not a waste of time but a way to build confidence.

> "…naranasan na mas maging confident. My parents tend to compare me to my siblings pero sa school I can be whoever I am…" (…I experience to be confident. My parents tend to compare me to my siblings but in school, I can be whoever I am…)

Also, Informant B says that aside from it boosts confidence, going to school is also her way of helping others.

> "…nakakaboost ning confidence pagtigpu-puri ako kan mga teachers ko. Even my classmates nagpapatabang sako minsan sa acads. So, it is not a waste of time po lalo na nakakatabang din po ako sa iba." (…it boosts my confidence when my teachers praise me. Even my classmates sometimes ask for my help in academics. So, it is not a waste of time especially that I am also able to help others.)

While the second key theme is career preparation. Informant C just briefly answered,

> "Going to school is not a waste of time. It is my preparation for my future."

Level of Junior High School and Senior High School Students Academic Engagement in Terms of Cognitive Engagement, Behavioral Engagement, and Affective Engagement

The responses of students concerning students' behavioral, cognitive engagement, and emotional, engagement in their academic activities is shown in Table 6 and Table 7 . To get the normal assumption and minimal loss of information (Westland, 2022) results were obtained using a Likert scale ranging from 1 to 5 where 5 indicates "Strongly Agree," 4 indicates "Agree," 3 indicates "Neither Agree nor Disagree," 2 indicates "Disagree," and 1 indicates "Strongly Disagree." Level of Students' Academic Optimism is categorized into two (2), the Junior High School and the Senior High School.

Table 6.

Level of Junior High School Student's Academic Engagement

Junior High School Student's Academic Engagement		
Behavioral Engagement	**Level of Agreement n= 212**	**Rank**
1. I attend my classes regularly.	86.32%	1
2. I participate in class discussions and activities.	77.36%	2
3. I ask help from my teachers when I need it.	76.89%	3
4. I complete my assignments/projects on time and to the best of my ability.	72.17%	4
5. I use my class time wisely and avoid distractions.	66.98%	5
Cognitive Engagement	**Level of Agreement n= 212**	**Rank**
6. I challenge myself to learn more about the subjects I am interested in.	85.85%	1
7. I apply what I am learning in my classes to real- life situations.	82.55%	2
8. I try to connect new information to what I already know.	76.89%	3
9. I think critically about the lessons I am learning in my classes.	74.53%	4
10. I raised hands and ask questions during class discussions.	49.53%	5
Emotional Engagement	**Level of Agreement n= 212**	**Rank**
11. I believe that my education is important and will help me achieve my goals.	91.98%	1

12. I enjoy learning new things.	89.62%	2
13. I am proud of my academic accomplishments.	86.79%	3
14. I feel challenged and motivated by my school activities.	79.25%	4
15. I enjoy participating in group activities during class time.	73.58%	5

Junior High School

As shown in table 6, In terms of behavioral engagement, Junior High School students demonstrate strong commitment and attendance by having a response of 86.32% level of agreement for attending classes regularly which is the highest in rank among behavioral engagement indicators while the statement I use my class time wisely and avoid distractions got 66.98% level of agreement which is the lowest in rank.To substantiate the data, Key Informant Interview was then conducted. From the KII responses, 2 key themes emerged: The first theme is external distractions with 2 subthemes which are the presense of social media and smartphones, and classroom environment. The second theme is internal distractions with subthemes poor time management skills and personal issues.

Informant A pointed out that she is easily distracted by her smart phone browsing her social media accounts.

> "… mas nagfofocus po ako sa cellphone ko, minsan nagfe- facebook or minsan nagkakawat po". (…I focus more on my cellphone, browsing my facebook or sometimes playing.)

Informant B said that,

> "… maribok- ribok man po kaya tapos pagkainit pa. Pangit pa po tukawan ko kaya mas gusto ko naglilipat lipat minsan." (… it is quite noisy and it is really hot inside. My chair is also uncomfortable that's why I want to transfer seats from time to time.)

The preceeding statement explains that using classtime wisely is sometimes impossible because of the classroom environment.

Moreover, Informant C pointed out that,

> "Kung sa pagfocus po, dae po gayo lalo na po minsan kadakulon gibuhon tapos nagsasarabay sabay ang activities. Dae ko aram po ang iinuton. Makahugakon pong maray minsan." (I can't really focus, especially when there are lots of activities to be done. I don't know which one to accomplish first. It feels overwhelming.)

This means that using classtime wisely is sometimes impossible because of his poor time management and overwhelming activities.

While Informant D justified,

> "… dae ko man namamaanan ang nakasurat sa board dawa nasa inutan na ako… makulog po sa payo magparabasa nin lesson." (… I can't really see what is written on the board … my head aches

from reading the lessons.) This statement means internal factors also affect using classtime, especifically the personal issues such as poor eyesight.

For the cognitive engagement as shown in Table 6, 85.85% Junior High School students express their highest level of agreement to the indicator I challenge myself to learn more about the subjects I am interested in. Whereas, the statement I raised hands and ask questions during class discussion was given only 49.53% level of agreement which is the lowest in rank among other indicators.

To deepen the understanding about the result, responses from Key Informant Interview were analyzed and 2 themes emerged. The first theme is the social and emotional factors with subthemes of fear of judgement and lack of confidence and shyness. The second theme is teacher's rule and response.

For social and emotional factor, Informant A answered that,

> "…pag napapasala ako magpronounce, tig- aarog arog ako kan mga kaklase ko." (…if I mispronounced a word, my classmates repeat what I say.)

This statement shows that the fear of judgement is the reason why she does not raise hands during class discussion.

Informant B explained that raising hands during class discussion is difficult because of shyness and lack of confidence, wherein,

> "Dawa po aram ko ang answer, nasusupog po ako magrecite kasi po baka sala. Pero pag inapod man po ako, nakakasimbag man po ako." (Even if I knew the answer, I feel ashamed to answer because my response may be wrong. But if I get called on, I can answer.)

Informant C claimed that it is the response of the teacher why raising hands during class discussion is hard as such,

> "… mas nakakagana magtaas kamot kapag may positive feedback man si Mam lalo pag tama man po." (…it is more motivating to raise hands if there is positive feedback from the teachers especially when the answer is right.)

While the rule of the teacher during recitation makes it hard for the student to raise hand during class discussion. As Informant D says,

> "Minsan po kaya kapag may hinahapot ang teacher mi, ang mga kaklase ko dae din nagtataas kamot ta sobrang strikto ni Mam. Lalo na kaipuhan pa magsimbag English. Dawa aram ko ang simbag, dae ko po gayo kaya ipaliwanag." (Sometimes, if the teacher is asking the question, my classmates also don't raise their hands because our teacher is super strict. Especially, when we needed to answer in English, so, even if I knew the answer, I couldn't explain it very well.)

For emotional engagement as shown in Table 6, 91. 98% of Junior High School students have expressed their highest level of agreement on the indicator I believe that my education is important and will help me achieve my goals placing it in 1st rank. While statement I enjoy participating in group activities during class time has 73. 58% level of agreement which is the lowest in rank among other indicator in emotional engagement. To further deepen the understanding about the result, responses from Key Informant

Interview were analyzed and two (2) themes emerged: Personality Differences and Unequal Distribution of Work.

Unequal Distribution of Works makes the group activities less enjoyable as Informant A explained,

> "… kasi po minsan leader sana po ang naghihiro while so iba pa- libre sana. Tapos pag hababa ang score, nagsisirisihan." (…because sometimes some of our groupmates don't contribute to the work and just depend on the leader. Then, if the grades are low, they would blame each other.)

While Personality Differences is also one reason as Informant B pointed out that,

> "… kapag ka- vibes ko po ang mga ka- grupo ko. Minsan po kaya judgemental ang iba, porke bako gayo matalino, mayo na silbi. So matitibay lang po ang nagbibida- bida sa mga arog kaiyan." (… when I like the vibe of my groupmates. However, there are times when others are being judgmental, when one is not that bright, he/she is useless. Only the bright students are seen as the main characters in these activities."

Senior High School

For Senior High School Students, as shown in Table 7, under behavioral engagement, I attend my classes regularly and I participate in class discussions and activities with 88. 89%, received the highest level of agreement while the lowest in rank is I complete my assignments/projects on time and to the best of my ability with 77. 78% level of agreement.

Table 7.

Level of Senior High School Student's Academic Engagement

Senior High School Student's Academic Engagement		
Behavioral Engagement	**Level of Agreement n= 108**	**Rank**
1. I attend my classes regularly.	88.89%	1.5
2. I participate in class discussions and activities.	88.89%	1.5
3. I use my class time wisely and avoid distractions.	83.33%	3.5
4. I ask help from my teachers when I need it.	83.33%	3.5
5. I complete my assignments/projects on time and to the best of my ability.	77.78%	5
Emotional Engagement	**Level of Agreement n= 108**	**Rank**
6. I enjoy learning new things.	97.22%	1

7. I believe that my education is important and will help me achieve my goals.	95.37%	2.5
8. I am proud of my academic accomplishments.	95.37%	2.5
9. I feel challenged and motivated by my school activities.	87.04%	4
10. I enjoy participating in group activities during class time.	82.41%	5
Cognitive Engagement	**Level of Agreement n= 108**	**Rank**
11. I challenge myself to learn more about the subjects I am interested in.	93.52%	1
12. I apply what I am learning in my classes to real- life situations.	91.67%	2
13. I try to connect new information to what I already know.	84.26%	3
14. I think critically about the lessons I am learning in my classes.	83.33%	4
15. I raised hands and ask questions during class discussions.	61.11%	5

To further validate the result, Key Informant Interview was then conducted. Responses revealed 2 themes: Negative attitude and External Responsibilities.

For the first theme, negative attitude is shown in Informant A's response which is:

"Tinatapos ko man ang mga gibuhon pag may katabang. Pero pag mayo, tighuhugakan ako ta dae ako sure kung tama ba ginigibo ko. (I finish my work if I have someone to help me. If not, I feel lazy because I'm not sure if I'm doing it right.)

The second theme is external responsibilities such as overwhelming workloads which was explained by Informant B as,

> "Minsan po dae kaya kang oras ko maggibo projects lalo na pag nasasabay sa raket ko..." (Sometimes, I can't complete assignments on time, especially when they coincide with my part-time job...)

For Senior High School emotional engagement, as shown in Table 7, the indicator which received the highest level of agreement is I enjoy learning new things with 97. 22% level of agreement while the lowest in rank is I enjoy participating in group activities during class time with 49. 53% level of agreement. To further validate the result, Key Informant Interview was then conducted. Responses have revealed into 2 themes: Personality Differences and Unequal Distribution of Work.

The first theme is Personality Differences with a focus on preference for individual work as explained by Informant A,

> "Mas prefer ko po ang solo activity rather than group activity para dae na ako makikisama sa mga ka- grupo ko. I am an introvert and nalolowbat ako when I am dealing with other people." (I prefer solo activity over group activity because I don't have to interact with my groupmates. As an introvert, I feel drained when dealing with other people.)

While Informant B pointed the unequal distribution of work is one of the reasons, as such,

> "Minsan kaya dae malinaw ang role kan kada ka- member. So ang nangyayari po, nagpapalibre ang iba while ang iba, mas grabe ang effort then parareho man sana ang grades." (Sometimes, the roles of each member are unclear. As a result, some do nothing while others exert too much effort, yet everyone receives the same grade.)

For cognitive engagement of senior high school students, Table 7 shows that among the indicators within this dimension, the statement I challenge myself to learn more about the subjects I am interested in with 93. 92% level of agreement ranked 1st while the lowest in rank is the indicator stating that I raised hands and asked questions during class discussions with 61. 11% level of agreement.

To further validate the result, the Key Informant Interview was then conducted. The transcribed responses have emerged into only one theme, the social and emotional factor with subthemes of peer pressure, lack of confidence and fear of judgement.

Informant A specifically pointed out peer pressure as significant in this context:

> "Bihira po ako magtaas kamot and maghapot kasi po may mga kaklase po akong dae naapreciate ang mga naghahapot. They labeled them as bida- bida or sometimes sipsip." (I rarely raise my hands and ask questions during class discussion because I have classmates who don't appreciate those who ask questions and labeled them as "bida- bida" or having a main character attitude or sometimes as "sipsip" or someone who is obsequious.)

While Informant B is afraid of being wrong, he answered like:

> "Bihirang bihira po. Like mabibilang lang sa kamot. Habo ko po maghapot kasi natatakot po akong mapasala ang hapot and mapasupog. May mga teacher po kayang pag naghapot ka, ibabalik man giraray saimo ang hapot which is nakakadown minsan". (Barely. You can count them on your fingers. I'm afraid to ask questions because I fear getting it wrong and be embarrassed. Some teachers throw the questions back at you which can make you feel downgraded.)

Relationship between Students' Academic Optimism, Students' Academic Engagement and Socio Demographic Technological Profile

The Relationship between Students' Academic Optimism and Students' Academic Engagement was measured through the Spearman Rho Correlation as shown in Table 8 while Ordinal Regression Analysis was used to obtain the relationship between Socio- Demographic Profile to Students' Academic Optimism and Students Academic Engagement as outlined in Table 9 and Table 10 respectively.

Table 8.

Relationship between Students' Academic Optimism and Students' Academic Engagement

		STT	AP	SI	BE	AE	CE
STT	Spearman's rho	—					
	p-value	—					
AP	Spearman's rho	0.565***	—				
	p-value	< .001	—				
SI	Spearman's rho	0.793***	0.733***	—			
	p-value	< .001	< .001	—			
BE	Spearman's rho	0.319***	0.444***	0.414***	—		
	p-value	< .001***	< .001	< .001	—		
AE	Spearman's rho	0.428	0.394***	0.472***	0.559***	—	
	p-value	< .001***	< .001	< .001	< .001	—	
CE	Spearman's rho	0.37	0.361***	0.403***	0.511***	0.453***	—
	p-value	< .001***	< .001	< .001	< .001	< .001	—

Legend: >=0.70- Very Strong Relationship; 0.40-0.69- Strong Relationship; 0.30- 0.39- Moderate Relationship; 0.20- 0.29- Weak Relationship; 0.01- 0.19- No Relationship (Adapted from Dancey and Reidy, 2004)

Relationship between students' academic optimism and students' academic engagement

The Spearman's rho correlation results reveal that there is a very strong relationship between students' trust in teachers (STT) and school identification (SI) (ρ= 0.793) as well as between academic press (AP) and school identification (SI) (ρ= 0.733), while strong relationships are observed between students' trust in teachers (STT) and academic press (AP) (ρ= 0.565), students' trust in teachers (STT) and affective engagement (AE) (ρ= 0.428), academic press (AP) and behavioral engagement (BE) (ρ= 0.444), school identification (SI) and behavioral engagement (BE) (ρ= 0.414), school identification (SI) and affective engagement (AE) (ρ= 0.472), school identification (SI) and cognitive engagement (CE) (ρ= 0.403), behavioral engagement (BE) and affective engagement (AE) (0.559), behavioral engagement (BE) and cognitive engagement (CE) (ρ= 0.511), and affective engagement (AE) and cognitive engagement (CE) (ρ= 0.453).

Moderate relationships are noted between academic press (AP) and affective engagement (AE) (ρ= 0.394) and between academic press (AP) and cognitive engagement (CE) (ρ= 0.361).

Relationship of Students Academic Optimism to Socio- Demographic Technological Profile and Students' Academic Engagement

The results of the ordinal regression for the dependent variable students' academic optimism are presented in Table 9. The overall model explained 19.2% of the variance in students' academic optimism, indicated by McFadden's R^2 of 0.192. The Chi-Square statistic (χ^2), which tests the null hypothesis that the model with no predictors fits the data as well as the model with the predictors, was 122 with 12 degrees of freedom (df). The model's p-value (P) is less than 0.001, indicating that the predictors combined are significantly associated with students' academic optimism.

Three significant predictors stood out in the regression results of the student academic engagement. These are: monthly salary of the father, information and data management, and student's academic engagement.

Table 9.

Relationship of Students Academic Optimism to Socio- Demographic Technological Profile and Students' Academic Engagement

Model	Overall Model Test			
	R^2_{McF}	χ^2	Df	P
Students' Academic Optimism	0.192	122	12	< .001

Note. The dependent variable 'Students' Academic Optimism' has the following order: 1 | 2 | 3 | 4 | 5

Model Coefficients - Students' Academic Optimism

Predictor	Estimate	SE	Z	P
Highest Educational Attainment of the Father	0.3468	0.1875	1.849	0.064
Monthly Salary of the Father	**-0.3493**	**0.1799**	**-1.942**	**0.05**
Highest Educational Attainment of the mother	-0.1531	0.2009	-0.762	0.446
Monthly Salary of the mother	-0.1115	0.1376	-0.81	0.418
Technology at Home	0.0476	0.0642	0.741	0.459
Technology Owned and Used	-0.1791	0.197	-0.909	0.363
Technology that Isn't Owned but Familiar with	0.079	0.0649	1.217	0.224
Information and Data Management	**0.1777**	**0.0629**	**2.824**	**0.005**
Digital and Content Creation	0.0107	0.0653	0.164	0.869
Communication and social media	0.0672	0.1152	0.583	0.56

Model Coefficients - Students' Academic Optimism

Predictor	Estimate	SE	Z	P
Online and Practical Application	-0.0486	0.076	-0.639	0.523
Students' Academic Engagement	1.6577	0.1917	8.645	< .001

The first statistically significant predictor was the monthly salary of the father (p=0.05). It has a negative coefficient (-0.3490) which suggests that a lower monthly salary of the father will result in higher level of student's academic optimism. If the monthly salary of the father is increased by a unit, the ordered log-odds of students' academic optimism decreases by 0.3490, holding all other predictors constant.

Moreover, Information and data management (p=0.005) showed a positive coefficient of 0.1777. This implies that with every one-unit increase in information and data management, the ordered log-odds of students' academic optimism increase by 0.1777, keeping other factors constant. This predictor highlights the importance of skills related to managing information and data in enhancing students' academic optimism.

Also, students' academic engagement (p<0.001) had the most substantial effect, with a positive coefficient of 1.6577. This indicates that for every one-unit increase in students' academic engagement, the ordered log-odds of students' academic optimism increase by 1.6577, when all other predictors are held constant. This demonstrates a strong relationship between academic engagement and optimism, suggesting that more engaged students are likely to have higher academic optimism.

Relationship of Students' Academic Engagement to Socio- Demographic Technological Profile and Students' Academic Optimism

The results of the ordinal regression for the dependent variable academic engagement are presented in Table 10. The overall model explaines 18.3% of the variance in students' academic engagement, indicated by McFadden's R^2 of 0.183. The Chi-Square statistic (χ^2), which tests the null hypothesis that the model with no predictors fits the data as well as the model with the predictors, is 119 with 12 degrees of freedom (df). The model's p-value (p) was less than 0.001, indicating that the predictors combined are significantly associated with students' academic engagement.

Three significant predictors stood out in the regression results of the student academic engagement. These are: highest educational attainment of the mother, communication and social media, and student's academic optimism.

Table 10.

Relationship of Students Academic Engagement to Socio- Demographic Technological Profile and Students' Academic Optimism

Model	Overall Model Test			
	R^2_{McF}	χ^2	Df	P
Students' Academic Optimism	0.192	122	12	< .001

Note. The dependent variable 'Students' Academic Optimism' has the following order: 1 | 2 | 3 | 4 | 5

Model Coefficients - Students' Academic Optimism

Predictor	Estimate	SE	Z	P
Highest Educational Attainment of the Father	0.3468	0.1875	1.849	0.064
Monthly Salary of the Father	**-0.3493**	**0.1799**	**-1.942**	**0.05**
Highest Educational Attainment of the mother	-0.1531	0.2009	-0.762	0.446
Monthly Salary of the mother	-0.1115	0.1376	-0.81	0.418
Technology at Home	0.0476	0.0642	0.741	0.459
Technology Owned and Used	-0.1791	0.197	-0.909	0.363
Technology that Isn't Owned but Familiar with	0.079	0.0649	1.217	0.224
Information and Data Management	**0.1777**	**0.0629**	**2.824**	**0.005**
Digital and Content Creation	0.0107	0.0653	0.164	0.869
Communication and social media	0.0672	0.1152	0.583	0.56
Online and Practical Application	-0.0486	0.076	-0.639	0.523
Students' Academic Engagement	1.6577	0.1917	8.645	< .001

The first statistically significant predictor is the highest educational attainment of the mother (p=0.02) which exhibited a positive coefficient of 0.4865, indicating that as the mother's educational attainment increases by one unit, the ordered log-odds of students' academic engagement increase by 0.4865, holding all other predictors constant. This suggests that the higher educational attainment of the mother is associated with higher levels of students' academic engagement. Meanwhile, communication and social media (p=0.05) has a positive coefficient of 0.2292, suggesting that an increase in communication and social media use is associated with a higher level of students' academic engagement. Although the p-value is at the threshold of significance, it indicates a potentially meaningful relationship. Moreover, the

students' academic optimism ($p<0.001$) showed the most substantial effect, with a positive coefficient of 1.7594. This implies that for every one-unit increase in students' academic optimism, the ordered log-odds of students' academic engagement increase by 1.7594, keeping other factors constant. This strong relationship suggests that higher levels of academic optimism significantly enhance students' academic engagement.

Intervention Program

Project SPECTRUM (**S**haping **P**otential, **E**nsuring Academi**C** Success of Students **T**hrough **R**esources, **U**nderstanding, and **M**eaningful Support): **A Comprehensive Intervention Program**

Project SPECTRUM stands for "Shaping Potential, Ensuring Academic Success of Students Through Resources, Understanding, and Meaningful Support" consisting of 4 different programs namely Project HEAR Me and Project FOCUS for Junior High School Students and Project ASCEND and Project CONFIDENT for Senior High School Students. These names reflect the project's comprehensive approach to fostering students' academic optimism and engagement. These are designed to address critical issues identified in Franco's (2024) study on Junior High School (JHS) and Senior High School (SHS) students' academic optimism and engagement where findings highlighted several key areas where students faced significant challenges, including communication barriers, inadequate support systems, and ineffective reward structures.

Project SPECTRUM recognizes that each student has unique needs and learning styles. By providing a spectrum of resources, from affordable tutoring to technology access, the project aims to equip students with the tools they need to excel. Furthermore, it emphasizes the importance of understanding individual students. Through open communication and acknowledging diverse learning styles, the project fosters a supportive environment where students feel heard. But support goes beyond simply being present. It also focuses on providing meaningful support, tailored to address each student's strengths and weaknesses, ensuring that this intervention will truly benefit them.

This project intervention goes beyond academics. Recognizing the importance of mental well-being, Project SPECTRUM integrates stress management strategies and provides emotional support to create a holistic learning environment. By fostering collaboration between teachers, parents, and the community, Project SPECTRUM builds a strong support network that empowers students to develop a growth mindset, viewing challenges as opportunities for learning and advancement.

Therefore, to improve the over- all students' academic optimism and students' academic engagement involving the impact of socio- demographic technological profile of the students, this intervention seeks to:

1. enhance student support and communication, increase academic engagement and participation and promote student well-being and positive development of Junior High School Students, and
2. foster a supportive and inclusive learning environment, enhance academic competence and engagement and promote student well-being and development of Senior High School Students.

This intervention holdssignificance in creating a more inclusive, supportive, and effective educational environment for both JHS and SHS students and reduce disparities and promote a more equitable and

high-quality education system and improved academic outcomes, better mental health, and more prepared and confident students ready to succeed in their future endeavors.

Chapter V

Discussion

This chapter discusses the results obtained solely from the survey questionnaire and interviews.

Socio-Demographic and Technological Profile of the Respondents

The data reveal traditional gender roles in rural areas, with many fathers working in skilled agricultural, forestry, and fishing jobs, while most mothers engage in non-gainful activities, primarily as housewives. This pattern indicates a strong presence of agriculture, where men are the primary earners and women contribute to household tasks (Abrigo & Francisco-Abrigo, 2019). The majority of parents have only completed secondary education, limiting their access to higher-paying jobs and resulting in low family income, with most families earning below 10,957 PHP monthly. The high percentage of mothers with no income underscores the economic reliance on paternal earnings, aligning with the Philippine Jobs Report (2023) that correlates education level with earnings (Avilado, Enierga, & Llave, 2020).

In technological profile, cellphone ownership is common among the respondents which highlights the gadget's importance for communication and accessing information. This findings aligns with Adriani & Asyifa's (2022) findings on the importance of these devices. However, ownership of advanced devices like tablets, laptops, and computers is shown to be limited, suggesting economic constraints. Despite this, familiarity with laptops and computers indicates access through shared facilities such as schools or computer shops. Internet access, primarily through shared Wi-Fi, promotes collective learning, though reliance on services like Piso Net and prepaid data highlights challenges in affordable and consistent home internet access, impacting educational and professional opportunities. This concurs with Abanto's (2023), who noted the increased prioritization of electronic devices and services due to the shift to virtual education during the pandemic. The importance of digital skills and access to key technologies is emphasized, as these have transformed communication and information exchange (Baylen, 2018; Murshed et al., 2020). Contrarywise, Dincer (2018) and Ramboa (2019) argue that the high cost of living and limited affordability of ICT hinder access for low-income families, which can affect educational success.

These findings imply the need for policies that enhance educational opportunities and technological access to bridge income differences and support the economic and educational improvement of rural families.

Level of Junior High School and Senior High School Students' Academic Optimism

Junior High School (JHS) and Senior High School (SHS) students' academic optimism reveal distinct perspectives in three key areas: trust in teachers, academic press, and identification with school.

Trust between teachers and students is widely acknowledged as significant for effective learning (Platz, 2021). Data reveal that in both Junior High School (JHS) and Senior High School (SHS), students prioritize the belief that "Teachers are always ready to help", with SHS students displaying slightly higher levels of trust. This suggests that students view their teachers as accessible and supportive which is pivotal for enhancing the quality of the teaching-learning process (Padmadewi, 2020) especially for Senior High School students. However, JHS students' express concerns about feeling unheard, citing poor

communication and time constraints as significant issues. Meanwhile, SHS students perceive that teachers may not always be honest with them, often due to the complexities of relationship dynamics and pressures to demonstrate positive outcomes while avoiding conflicts. These concerns indicate a need for improved communication and support in JHS to ensure that students feel heard and valued because ensuring that students feel listened to is essential as it supports their conceptual learning process (English, 2022). Findings also indicate that there is a need to develop greater transparency and trust in SHS to address perceived dishonesty and relational pressures because honesty plays an important role in developing academic excellence by implementing transparent grading systems, offering constructive feedback, and maintaining open channels of communication with both students and parents (Vivekananda & Meenakshi, 2022). By providing honest assessments of students' strengths and weaknesses, educators can tailor their support strategies, ultimately improving academic outcomes. These findings align with Tschannen-Moran et al., (2013) confirmatory factor analysis, which identifies competence, honesty, benevolence, reliability, and openness as key factors influencing student trust in teachers. When students perceive their teachers as competent and supportive of their autonomy, they are more likely to develop trust in them (Shaw, 2022). The implications of the result in students trust to teachers highlight the importance of developing trust and honesty between teachers and students in both Junior High School (JHS) and Senior High School (SHS). For JHS, improving teacher-student communication and ensuring that students feel heard is important for creating a supportive learning environment. While in SHS, maintaining transparency in teacher-student interactions and promoting ethical conduct can enhance academic performance and ensure academic success (Tschannen-Moran et al., 2013; Vivekananda & Meenakshi, 2022). These efforts are essential in building strong relationships that support students' educational growth and overall well-being.

For academic press, the data reveal that both Junior High School (JHS) and Senior High School (SHS) students show a high level of academic press, particularly valuing their belief in their ability to learn and the school's serious approach to education. This positive indication suggests that students recognize the importance of learning and are motivated to strive for academic excellence, which can lead to improved academic outcomes and a more engaged student body. The strong emphasis on academic press can develop a culture of high expectations and achievement, encouraging students to set and reach higher goals (Fati, Ahmed, Umrani, & Zaman, 2019). Additionally, students' belief in their ability to learn can enhance their self-efficacy, leading to greater persistence and resilience in the face of academic challenges (Velea et al., 2021; Usan et. al., 2022).

However, the study also highlights significant negative implications. The JHS students face issues with accessing extra help due to insufficient funds, lack of support, and communication barriers. This can lead to frustration and can hinder their ability to overcome academic difficulties, potentially widening the achievement gap. Similarly, SHS students cited challenges such as lack of awareness, perceived ineffectiveness, and inadequate action in receiving additional support. These hindrances can impede academic progress and negatively affect the overall school experience. If left unaddressed, these issues could lead to lower morale and motivation, ultimately impacting academic performance and future opportunities.These findings highlight the critical need for teachers and educational institutions to provide healthy support systems, academic programs, and services that can enhance student performance and academic achievement. Resources such as these not only motivate students to excel academically but also foster a culture where student efforts and achievements are valued and recognized (Estacio et al., 2022; White et al., 2023; Achdiyah, 2023).

Furthermore, identification with the school is strong in both groups, with pride in being part of the school ranking the highest, though SHS students feel slightly prouder. The JHS students value school for additional learning, awards, and enjoyment in which the school's reward systems have both positive and negative effects on students' development. Thus, the school attract students' interests, foster good learning habits, establish a positive learning atmosphere, and increase students' motivation (Chen, 2023) while it influence students' positive emotions - enjoyment, excitement, relaxation and engagement (Phungphai and Boonmoh 2021). On the other hand, SHS students see it as a confidence booster, career preparation platform, and also a way of helping peers. Self- confidence according to Lone (2021) leads to optimism and energizes a person to believe in his/her abilities regardless of the challenges of the task and makes a person take risks, try novel ideas, new things and acquire different skills to combat a situation. In addition, school for the SHS students is a career preparation for them which justifies that SHS's preparation of students for transfer to university included academic adaptation, environmental adaptation, individual-emotional adaptation, pre-transitional preparation, and organizational-managerial factors of educational system (Samadi et. al., 2024). This result implicates that the strong identification with schools among both JHS and SHS students, combined with the positive impact of school reward systems and the cultivation of self-confidence, highlights the importance of nurturing supportive environments and motivational strategies in enhancing students' overall academic and personal growth. This accords with Academic Optimism Theory of Hoy et. al., (2006) which states that collective influence of a school's environment, practices, and beliefs impacts student achievement and performance.

Level of Junior High School and Senior High School Students' Academic Engagement

The study investigates the levels of students' academic engagement across behavioral, cognitive, and affective (emotional) dimensions (Peng, 2017) among Junior High School and Senior High School students. The data, derived from a modified Pareja (2009) survey, highlights both the quantitative responses (Likert scale percentages) and qualitative insights (Key Informant Interviews).

According to Bond et. al., (2020), the more students are engaged and empowered within their learning community, the more likely they are to channel that energy back into their learning, leading to a range of short- and long-term outcomes that can likewise further fuel engagement. For behavioral engagement between Junior High School (JHS) and Senior High School (SHS) students, both groups exhibit strong attendance habits, yet the JHS students struggle more with effectively utilizing class time, citing external distractions such as the use of smartphones and social media and an unsupportive classroom environment. This aligns with the findings of Ramírez et al. (2021) and Alvi, Kayani, & Lakhan (2022) exposing smartphones and social media as a digital distraction that allow minimal students' engagement in school (Assefa, Moges, & Kumar, 2023), and the importance of creating conducive learning environments to enhance academic performance (Akomolafe & Adesua, 2015).

Internal factors like poor time management, identified as a serious issue by Wilson et al. (2021) and Baida & Brinzei (2021), also hinder JHS students' ability to maximize their class time effectively. Conversely, SHS students face challenges in completing assignments on time, often influenced by negative attitudes and external responsibilities like part-time jobs. These findings resonate with the insights of Amir et al. (2014) and Goñi et. al., (2018) suggesting that older students generally exhibit lower engagement levels compared to their younger counterparts. This therefore, gives an implication of the need to have an

intervention such as time management training and support programs focusing on helping students balance academic requirements with external commitments.

Furthermore, the cognitive engagement of JHS and SHS students are high and that they show motivation to learn about subjects of interest. Yet, both groups showed hesitance to participate in class discussions due to fear of judgment, lack of confidence, and strict classroom environments. These findings also mirror the study of Ahmad (2021) and Qudoos and Samad (2022) which revealed that the top three causes of not participating are being tensed when forced by teachers to answer a question; getting tensed and nervous to speak in front of the whole class, and having faulty pronunciation resulting to anxiety in speaking. This highlights the need for educators to provide supportive classrooms and encourage participation by providing positive feedback and reducing peer pressure through teacher training in effective instructional methods and supportive behavior, addressing students' confidence issues through counseling, and enhancing language skills.

For emotional engagement, JHS and SHS students valued their education and enjoyed learning. However, group activities were considered less enjoyable due to personality differences and unequal distribution of work.

This positive engagement indicates a strong commitment to academic success and personal growth. However, the study also highlights some negative implications. Group activities, in particular, are less enjoyable for students due to personality differences and the unequal distribution of work. These issues can lead to frustration, reduced collaboration, and diminished satisfaction with group tasks, potentially impacting overall student morale and the effectiveness of collaborative learning experiences. According to LaBeouf et al., (2016) the benefits of group work are well recognized throughout the educational literature because it is beneficial and helps prepare students for real life experiences. This implicates that students, especially senior high school students, should actively participate in and learn from group activities, as these experiences prepare them for future careers that require teamwork. To address these challenges, teachers should focus on improving group dynamics by clearly defining roles and promoting healthy competition. This approach will not only enhance students' emotional engagement but will also better prepare them for the collaborative aspects of professional life.

Relationship between Students' Academic Optimism, Students' Academic Engagement and Socio Demographic Technological Profile

The researcher used the descriptive- correlational design, as also used by Mitchell (2016) and Hayat (2022) employing the Spearman Rho in establishing the relationship between the dimensions of students' academic optimism and domains of students' academic engagement while regression analysis was used in establishing the relationship of socio- demographic technological profiles to students' academic optimism and students' academic engagement.

Relationship between Students' Academic Optimism and Students' Academic Engagement.

The hypotheses that guided this study were strongly supported. The first hypothesis that there is a significant positive relationship between students' academic optimism and their level of academic engagement was confirmed, indicating that dimensions of students' academic optimism is positively related to the domain of students' academic engagement.

Through Spearman's rho correlation, the data show several key relationships between students' academic optimism and students' academic engagement. Trust in teachers and school identification are very strongly correlated, indicating that efforts to build strong, trusting relationships between students and teachers can significantly enhance students' identification with their school (Mitchell et. al., 2016). Similarly, academic press and school identification are very strongly correlated, suggesting that maintaining high academic standards within a supportive environment can strengthen students' sense of belonging and identification with their school. The findings relate with the study of Montiero et. al., (2021) which claimed that creating a supportive classroom environment through effective feedback had an effect on students' school identification.

Strong relationships exist between trust in teachers and both academic press and affective engagement, implying that having trust between students and teachers can enhance students' perception of academic press and their emotional involvement in school activities. This coincides with Ennen et. al., (2015) argument that trust is strongly and positively related to satisfaction and motivation. Additionally, academic press is strongly related to behavioral engagement, indicating that clear academic expectations as such goal-setting is an effective way to enhance academic engagement (Rowe et. al., 2017) and structured support can lead to increased student engagement in school activities (Achdiyah, 2023).

School identification strongly correlates with behavioral, affective, and cognitive engagement, highlighting the importance of promoting activities and programs that enhance students' connection to their school, which in turn strengthen their engagement. Furthermore, behavioral engagement is strongly correlated with both affective and cognitive engagement, suggesting that students who are actively involved in school activities are also likely to be emotionally and intellectually engaged. Affective engagement is strongly connected to cognitive engagement, indicating that emotionally supportive learning environments can enhance students' intellectual involvement academically.

Meanwhile, moderate relationships are found between academic press and both affective and cognitive engagement, suggesting that while academic pressure influences emotional and cognitive involvement, additional support may be needed to strengthen these connections. This result defies the study of Fati, Ahmed, Umrani, & Zaman (2019), which stated that there was an insignificant relationship between academic press and overall student engagement. However, it conforms with the study of Sabbaghi, et.al., (2020) revealing a significant relationship between academic optimism, competence perception, and academic excitement with academic conflict, suggesting that these factors influenced students' engagement with their academic endeavors.

These findings highlight the importance of creating a nurturing and challenging educational environment to promote various dimensions of student engagement. Schools should focus on building trust, maintaining high academic standards, and promoting a strong sense of school identification to enhance students' emotional, behavioral, and cognitive engagement.

Relationship of Students Academic Optimism to Students Academic Engagement and Socio-Demographic Technological Profile

The findings of the ordinal regression shows that students' academic engagement has the strongest positive association with academic optimism which validates the null hypothesis of this study. This significance suggests that enhancing academic engagement is likely to strengthen students' optimism towards their

academic performance. This finding implies that teachers and schools should prioritize strategies that increase student engagement, such as interactive learning, personalized feedback, and supportive learning environments.

While for socio- demographic technological profile, the monthly salary of the father has a significant negative association with academic optimism while access to internet and technology and other predictors are insignificant. This finding indicates that higher paternal income may be associated with higher pressure and expectations on students, leading to lower academic optimism. Students from families with higher incomes might feel greater pressure to achieve academic success, which could lead to feelings of failure or anxiety about meeting those expectations. The findings coincide with the study of Tschannen-Moran et al., (2013) and Othman et al. (2021) stating that while SES increases, academic optimism tends to decrease, and vice versa. This however opposes the study of Tetzner & Becker (2018) who affirms that higher SES is equivalent to higher general optimism (including academic optimism). Moreover, the discovery that parental occupation, internet access, and technology availability do not significantly impact students' academic optimism has mixed implications. Positively, it highlights that students' belief in their academic potential and the importance they place on education can thrive independently of socio-economic factors. This offers hope to educators and policymakers that fostering academic optimism is possible across diverse student backgrounds. On the other hand, the findings might lead to neglecting the importance of providing equitable resources. It is important to recognize that, although these factors may not directly affect academic optimism, access to internet and technology still play an important role in academic achievement (Baylen, 2018; Murshed et.al., 2020). Therefore, efforts to ensure fair access to technology and address socio-economic inequalities are still important for creating a supportive educational environment.

Relationship of Students Academic Engagement to Students Academic Optimism and Socio-Demographic Technological Profile

Students' academic optimism emerged as the strongest predictor of academic engagement. The large and highly significant estimate suggests that as students' optimism regarding their academic capabilities increases, their engagement in academic activities also rises. It counters the null hypothesis stating that there is no significant relationship between students' academic optimism and their level of academic engagement.

This finding highlights the importance of developing a positive academic mindset among students and implies that schools and educators should implement interventions and support systems aimed at boosting students' confidence and positive outlook towards their studies, which in turn can enhance their engagement and participation in academic activities. These findings also justify the findings of Pukkeeree et.al., (2020), stating that positive thinking affects attainment value and engagement with regards to work behaviour.

Moreover, while other socio- demographic technological profiles are found to be insignificant, maternal educational attainment correlates positively with increased levels of academic engagement among students. This relationship emphasizes the role of educated mothers as influential role models who prioritize and encourage the importance of education (Ceka & Murati, 2016; Erawati, 2016) and proves the Urie Bronfenbrenner's Ecological Systems Theory which states that direct interactions in immediate settings like family influence the child's development. Additionally, the COVID-19 pandemic caused

widespread disruption, significantly intensifying the challenges faced by child-rearing mothers in balancing childcare, work, and household responsibilities (San Jose et. al., 2022). Maternal education provides access to educational resources and nurtures environments conducive to learning, enhancing children's motivation and commitment to academic tasks. Moreover, educated mothers are more likely to be actively involved in their children's education, engaging with schools and supporting educational activities, which further promotes a positive educational atmosphere (Awan & Hassan, 2020). The findings imply that supporting maternal educational attainment through policies that facilitate access to education and promote parental involvement can contribute significantly to improving students' academic engagement and long-term educational outcomes.

Moreover, the findings that parental occupation, access to the internet, and access to technology are insignificant in students' academic engagement has both positive and negative implications. Positively, it suggests that students' academic engagement is not heavily dependent on their socio-economic background or technological resources, indicating that intrinsic motivation and school-related factors might play a more significant role. This highlights the potential for schools to foster engagement through supportive environments and effective teaching practices, regardless of students' external circumstances. However, the negative implication is that it may confuse the challenges faced by students lacking resources. While overall students' academic engagement might not be affected, individual students without adequate access to technology or internet may still struggle with specific academic tasks, creating hidden biases that need to be addressed through targeted support and interventions.

Features and Workplan of Project SPECTRUM

Project **SPECTRUM** is an intervention that consists of 4 different programs that aim to address all the challenges faced by the Junior High School and Senior High School students as mentioned in the study of Franco (2024):

1. Project **H.E.A.R** Me (**H**eard and Supported, **E**quitable Access, **A**wards for all, **R**elationship Matter, and **Me**ntal Well- Being) – Weakness on JHS students' academic optimism reveals the feeling of being unheard due to poor communication and time constraints. They struggle to access extra help because of insufficient funds, lack of support, and communication barriers. While JHS students value school for additional learning, awards, and enjoyment, the reward systems can positively and negatively affect their development. Project H.E.A.R Me is a program that focuses on creating a supportive learning environment where JHS students feel heard and supported. It aims to ensure equitable access to extra help and promotes a balanced approach to awards that recognizes effort alongside achievement. It emphasizes open communication and active listening by teachers, addressing student concerns to build trust and positive relationships. Aside from that, this will ensure all students have access to affordable tutoring, after-school programs, and resources to supplement their learning. It will also give a balanced awards for all that recognizes both academic achievement and positive contributions like effort, teamwork, and participation. In addition, it will foster positive connections between teachers and students through mentorship programs and collaborative learning experiences. This strategy will also integrate mental health awareness and stress management techniques into the curriculum alongside accessible resources for student well-being to ensures their overall mental well-being.

2. Project **C.O.N.F.I.D.E.N.T** (**C**ultivate **O**ptimism through **N**urturing and **F**ostering **I**nclusivity, **DE**veloping partnership and **N**etworks and initiating **T**echnology access) – SHS students perceive that teachers may not always be honest, often due to complex relationship dynamics and pressures to show positive outcomes while avoiding conflicts. They face challenges such as lack of awareness, perceived ineffectiveness, and inadequate action in receiving additional support. Also, SHS students see school as a confidence booster and career preparation platform but also face challenges with peer dynamics and support. Project **C.O.N.F.I.D.E.N.T** aims to empower SHS students by building a supportive and inclusive learning environment. It will emphasize open dialogue, transparent policies, and readily available information in the school to foster trust alongside with open access to support programs, ensuring their effectiveness and accessibility for all. To nurture the student's confidence this strategy will also focus on activities that build self-esteem, career exploration, and goal setting. Aside from that, by fostering trust through collaboration and respect, this program promotes a safe and inclusive environment for all students and strengthens the partnerships with parents and the community to create a strong support network. In addition, to equip students with competence and to ensure that all students have the tools they need to thrive, this program will initiate technology access for all.
3. Project **F.O.C.U.S** (**F**riendly **O**pportunities for **C**ollaboration, **U**nderstanding, and **S**uccess of every Junior High School Students)- Academic engagement faces extra challenge as JHS students struggle to effectively utilize class time due to external distractions such as smartphones and social media, along with an unsupportive classroom environment. They hesitate to participate in class discussions because of fear of judgment, lack of confidence, and strict classroom settings. Additionally, group activities are less enjoyable due to personality differences and unequal work distribution. Project **F.O.C.U.S.** aims to promote a supportive classroom culture that minimizes distractions, fosters teamwork, and celebrates differences. Also, it encourages participation in class discussions through positive feedback and a less judgmental environment and promotes open communication and understanding within groups. In addition, it provides opportunities for students to work together effectively by clearly defining roles and promoting teamwork while promoting acceptance and a positive group dynamic. Lastly, this program addresses all three engagement areas by providing students with the necessary skills to manage distractions, participate confidently, and work collaboratively including the time management, communication skills, and conflict resolution strategies.
4. Project **A.S.C.E.N.D** (Advancing Student Competence & Engagement for New Destinations in Senior High School Students)- SHS students face difficulty completing assignments on time, often influenced by negative attitudes and external responsibilities like part-time jobs. They also hesitate to participate in class discussions for fear of judgment, lack of confidence, and strict classroom environments. While SHS students enjoy learning, they find group activities less enjoyable due to personality differences and unequal distribution of work. The ASCEND program tackles the multifaceted challenge of academic engagement in SHS. For students struggling with balancing academics and external commitments like part-time jobs, this program will conduct time management training and support programs where students gain the skills and tools to manage their workload effectively, where they can juggle responsibilities without sacrificing academic success. Similarly, it also addresses the issue of hesitant participation in class discussions by fostering supportive classroom cultures through teacher training where students feel comfortable taking risks and engaging

actively. Confidence-building workshops and counseling further empower them to reach their full potential in the cognitive dimension of academic engagement. Finally, ASCEND tackles the emotional aspect of engagement by addressing the challenges of group work. By defining roles, promoting teamwork, and ensuring equal contribution, the program fosters positive group dynamics which makes group activities enjoyable and maximizes learning for all students.

To ensure the smooth conduct of the intervention, the following activities, time- frame, persons responsible and resources are created:

A. **Pre- Implementation**:

Activities	**Detailed Process**	**Resources Needed**	**Persons Responsible**	**Time Frame**
Needs Assessment	Conduct surveys, interviews, and focus group discussion (FGD) to identify the needs of the participants	Survey tools, interview guides, focus group facilitators	Project team (Proponent)	2 weeks
Planning	Develop objectives, goals, and an implementation plan.	Planning templates, stakeholder input	Project team (Proponent), school administrators	2 weeks
Stakeholder Engagement	Hold meetings involving key stakeholders.	Meeting space, communication materials	Project team (Proponent), stakeholders	1-2 days
Resource Allocation	Secure funding and allocate resources according to the plan.	Budget, resource allocation plan	Project team (Proponent), finance department	2 weeks-1 months

B. Implementation:

Activities	**Detailed Process**	**Resources Needed**	**Persons Responsible**	**Time Frame**
Rollout of Interventions	Implement workshops, programs, and initiatives outlined in	Training materials, technology	Project team (Proponent), school Personnel	Year Round or as Scheduled

	Project SPECTRUM.	tools, program resources		
Monitoring and Evaluation	Collect data on intervention effectiveness and make adjustments as necessary.	Data collection tools, evaluation framework	Project team (Proponent), monitoring committee	Quarterly
Capacity Building	Provide training and support to enhance skills and competencies.	Training materials, professional development resources	Project team, professional trainers	Year Round or as Scheduled

C. Post Implementation

Activities	**Detailed Process**	**Resources Needed**	**Persons Responsible**	**Time Frame**
Sustainability Planning	Develop strategies to ensure the ongoing success and sustainability of the project.	Sustainability plan, stakeholder input	Project Team (Proponent), School Administrators	2 weeks
Continued Monitoring and Support	Maintain oversight of project activities and provide ongoing support as needed.	Monitoring tools, support resources	Project Team (Proponent), Monitoring Committee	Year-round or as needed
Dissemination of Best Practices	Share successes, lessons learned, and best practices with	Communication channels, presentation materials	Project Team (Proponent), School Personnel	As needed

	relevant stakeholders.			

Chapter VI

Summary, Conclusion and Recommendation

This chapter provides a comprehensive summary, conclusion, and recommendations derived from the results and discussion.

Summary

This study examines the relationship between students' socio-demographic technological profiles, their academic optimism, and academic engagement in public secondary schools within the Sagñay District. As it aims to bridge the gap in literature regarding the influence of socio-economic status on academic optimism, particularly in rural settings like Sagñay District, this study focuses on how factors such as parental socio-economic status, educational attainment, occupation, and access to technology and the internet impact students' trust in teachers, perceptions of academic press, and identification with school, collectively referred to as students' academic optimism. Additionally, it evaluates the cognitive, behavioral, and affective dimensions of students' academic engagement.

The primary problem the study seeks to address is understanding the relationship between students' socio-demographic technological profiles and their levels of academic optimism and engagement. Specific research questions include:

a. What is the socio-demographic and technological profile of the students with a focus on Socio-Demographic Profile (Parental Occupation, Parental Highest Educational Attainment, and Parental Monthly Income) and Technological Profile (Access to Internet and Access to Technology)?
b. What is the level of academic optimism of Junior High School and Senior High School Students, along Trust in teachers, Perception of academic press and Identification with school?
c. What is the level of academic engagement of Junior High School and Senior High School Students, in terms of Cognitive engagement, Behavioral engagement and Affective engagement?
d. How does students' academic optimism relate to their academic engagement based on socio-demographic technological profile?
e. What effective interventions can be developed to enhance students' academic optimism and students' academic engagement?

This research used a descriptive-correlational design, employing surveys and key informant interviews to collect data from 320 students selected using Cochran's formula. The study used validated and reliable questionnaires, including the academic optimism scale by Tschannen-Moran et al. (2013) and a modified version of Pareja's (2009) Student Engagement Scale. Spearman's rank correlation and ordinal regression analysis were the primary statistical tools used to assess the relationships between variables.

The findings of this study highlight the following:

1. The socio-demographic technological profile of 320 respondents shows an important insight into their economic and educational situation. Agricultural, forestry, and fishing occupations (30%) are the fields in which fathers are mostly skilled. On the other hand, large proportion of mothers engaged in non-gainful activities (33.75%) which primarily as housewives. The majority of parental monthly incomes fall below 10, 957 PHP, with 62. 54% of fathers and 40% of mothers who earn within this bracket. Educational attainment is predominantly secondary, with 49.83% of fathers and 59.35% of mothers completing it. In terms of technological access, 97.5% of respondents have cellphones. 93.44% of these are owned and used by the respondents themselves. Despite the small number of individuals who own laptops and computers, it is noticeable that they are familiar with the said technology, suggesting they have access at shared facilities. The same with this, internet access is primarily accessed through shared Wi-Fi (53%), with 27.81% relying on Piso Net services and 15.63% using prepaid data
2. Students' academic optimism for junior high school shows trust to teachers with 89.15% agreeing that teachers are always ready to help, while only 66.98% felt teachers really listen to students. Interviews revealed communication issues, trust problems, and time constraints as reasons. In SHS, 94.44% trusted that teachers are always ready to help, but fewer (76.85%) believed teachers are always honest. The key reasons for perceived dishonesty include relationship dynamics, pressure on teachers to avoid conflict and show positive outcomes. JHS students felt strongly that teachers believe they can learn (88.68%), but fewer agreed they could get extra help if needed (68.87%). The barriers mentioned during Key Informant Interview include insufficient funds, lack of support, and poor communication. Similarly, in SHS, the school being serious about learning was rated highly (91.67%), whereas getting extra help if needed was rated lower (73.15%). Key themes concerning barriers were lack of awareness, lack of necessary actions, and noticeable ineffectiveness of support systems. JHS students felt proud of being part of their school (83.96%), while only 8.96% thought going to school was a waste of time. They mentioned additional learning, enjoyment, and a less restrictive environment as reasons. In SHS, pride in the school was also high (91.67%), with only 14.81% seeing school as a waste of time. Confidence building and career preparation were important reasons for their positive views on school.
3. With students' academic engagement for junior high school students, the highest level of agreement (86.32%) was on attending classes regularly, whereas the lowest (66.98%) was on using class time wisely and avoiding distractions. Key themes from interviews revealed external distractions such as the use of smartphones and an unsupportive classroom environment, and internal distractions like poor time management and personal issues. For SHS students, both attending classes regularly and participating in class discussions (88.89%) were ranked the highest, while completing assignments on time (77.78%) was the lowest. Interviews highlighted negative attitudes and external responsibilities, such as part-time jobs, as barriers. The JHS students' cognitive engagement demonstrated the highest agreement (85.85%) on challenging themselves to learn about subjects of interest, but were least likely (49.53%) to raise hands and ask questions during class. Themes included fear of judgment, lack of confidence, and teacher's strict rules. SHS students also showed high agreement (93.52%) on challenging themselves but had lower engagement (61.11%) in asking questions. Social and emotional factors including peer pressure and the fear of being wrong were mentioned in interviews. Both JHS (91.98%) and SHS (97.22%) students valued their education and enjoyed learning, with the highest agreement on the importance of education for achieving goals. However, group activities were less

enjoyable, with JHS students showing 73.58% agreement and SHS students showing 82.41%. Themes from interviews highlighted personality differences and unequal distribution of work as major issues.

4. There is a strong positive relationship between students' academic engagement and their academic optimism. Trust in teachers and school identification exhibited a very strong correlation (ρ= 0.793), as did academic press and school identification (ρ= 0.733). Strong correlations were also found between trust in teachers and both academic press (ρ= 0.565) and affective engagement (ρ= 0.428). School identification strongly correlated with behavioral (ρ = 0.414), affective (ρ= 0.472), and cognitive engagement (ρ= 0.403). Moderate relationships were observed between academic press and affective (ρ= 0.394) and cognitive engagement (ρ= 0.361). This suggests that as students become more engaged in their academic activities, their optimism about academic success increases. The study emphasizes the importance of fostering engagement through strategies like interactive learning, personalized feedback, and supportive environments. The study also identified a significant negative association between the father's monthly income (E= 1.6577, $p < 0.001$) and students' academic optimism (E= 1.6577, $p < 0.001$). Higher paternal income may be linked to greater pressure and expectations which could lower students' academic optimism. Moreover, a positive correlation was found also found between maternal educational attainment (E= 0.4865, p= 0.02), and increased levels of academic engagement (E= 1.75944, p< 0.001). among students. This suggests that educated mothers may serve as influential role models in prioritizing education. Factors such as parental occupation, access to technology, and internet availability did not significantly impact academic optimism. However, these resources are still essential for overall academic achievement.

Based on the findings, this study proposes an intervention program named Project SPECTRUM, consisting of four different programs. Two programs target junior high school students, while the other two focus on senior high school students, aiming to enhance their academic optimism and academic engagement.

Conclusion

This study concluded the following based on the findings:

1. With a significant portion of fathers engaged in agriculture, forestry, and fishing, and a large proportion of mothers in non-gainful activities as housewives, there is an economic and educational challenges faced by families in the Sagñay District that leads to low family incomes and dependence on paternal earnings. Limited educational attainment restricts job opportunities, and while cellphones are common, access to the latest devices and consistent internet connectivity is limited. The high rate of cellphone ownership suggests that mobile technology is a primary tool for communication and learning, but limited access to laptops, computers, and stable internet connections indicates a digital divide that could affect students' academic performance.
2. Students generally trust their teachers and take pride in their schools, although there are concerns about communication, trust, and support systems. The variation in trust and perception between junior high school (JHS) and senior high school (SHS) students suggests that as students advance in their education, their expectations and perceptions of teacher honesty and support evolve. The lower levels of agreement on receiving extra help and the belief that teachers truly listen to students point to potential gaps in teacher-student communication and support mechanisms. Addressing these gaps through enhanced teacher training, better communication strategies, and improved support systems could further strengthen students' academic optimism.

3. Most students attend classes regularly and value their education. Although there are challenges in maintaining focus, managing distractions, and engaging in class activities. The lower levels of engagement in using class time wisely, completing assignments on time, and participating in discussions suggest that external distractions, negative attitudes, and personal responsibilities are barriers to full academic engagement. Additionally, the reluctance to ask questions during class, driven by fear of judgment and lack of confidence, highlights the need for creating a more supportive and inclusive classroom environment. Schools should focus on strategies that promote active participation, effective time management, and emotional support to enhance students' cognitive, behavioral, and affective engagement.
4. Enhancing students' academic optimism can positively influence the academic engagement and vice versa. The very strong correlations between trust in teachers, school identification, and academic press with different forms of engagement underscore the importance of creating a supportive and motivating school environment. The significant negative association between the father's monthly income and students' academic optimism indicates that economic pressures may adversely affect students' attitudes toward academic success. On the other hand, the positive impact of maternal educational attainment on academic engagement highlights the role of educated mothers as key influencers in their children's education. These findings suggest that schools should implement strategies that reduce pressure on students from higher-income families, support parental involvement, and foster trust and identification with the school to boost both academic optimism and engagement.
5. Proposed Project SPECTRUM as a comprehensive intervention program can actually help to enhance academic optimism and engagement based on socio- demographic technological profile of the students.

Recommendations

Based on the findings and conclusion of this study, the researcher recommends several ways to address specific areas of need identified through the research and aim to improve educational outcomes in public secondary schools.

1. Increase access to laptops and stable internet through school-based programs or community initiatives to bridge the digital divide and enhance learning opportunities, particularly for students from economically disadvantaged backgrounds.
2. Implement teacher training programs focused on improving communication, trust-building, and support mechanisms. These initiatives should aim to better address student needs, fostering an environment where students feel supported and optimistic about their academic potential.
3. Develop classroom strategies that minimize distractions, promote active participation, and provide emotional support. These strategies are essential for improving students' cognitive, behavioral, and affective engagement, ensuring they remain focused and motivated in their academic pursuits.
4. Create programs that reduce academic pressure on students from higher-income families while encouraging greater parental involvement, especially from educated mothers. These initiatives should aim to strengthen students' academic optimism and engagement, providing them with the necessary support to succeed academically.

To further enhance the validity and impact of research in this area, additional recommendations are suggested to address the limitations and weaknesses of the current study, as well as to guide future researchers:

1. Expand the sample size and geographic scope to include a more diverse population across different rural and urban settings.
2. Incorporate longitudinal data collection to track changes in students' academic optimism and engagement over time.
3. Utilize a mixed-methods approach by combining quantitative surveys with more in-depth qualitative methods, such as focus groups or case studies.
4. Investigate the role of additional socio-economic factors, such as parental involvement, home learning environments, and peer influence, to gain a more nuanced understanding of the variables affecting students' academic optimism and engagement.
5. Assess the effectiveness of specific interventions proposed by the researcher aimed at improving academic optimism and engagement through experimental or quasi-experimental designs. This would help identify the most impactful strategies that schools and educators can implement.
6. Examine the impact of emerging technologies and digital learning tools on students' academic optimism and engagement, especially in light of ongoing advancements in educational technology and remote learning.

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