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TEACHER DISPOSITION, CLASSROOM MANAGEMENT, AND STUDENT ACADEMIC MOTIVATION: A PATH MODEL ANALYSIS ON ENGAGEMENT OF SENIOR HIGH SCHOOL STUDENTS

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Abstract:
This study aimed to identify the best-fit model for student engagement among senior high school students in public schools in Region XII, focusing on teacher disposition, classroom management, and student academic motivation. A quantitative, non-experimental research design was used, employing correlational techniques and path analysis. The sample included 400 senior high school students from General Santos City, Koronadal, Sarangani, and South Cotabato, selected via stratified random sampling. Statistical tools used were mean, Pearson's r, and path analysis, with adapted and validated survey questionnaires. The results revealed that teacher disposition and classroom management levels were very high, while student academic motivation was high. As a result, student engagement was also very high. Further analysis showed that teacher disposition, classroom management, and academic motivation were significantly correlated with student engagement. Model 3 emerged as the best fit, emphasizing the role of teacher disposition in terms of motivation to teach, teacher efficacy, willingness to learn and conscientiousness influencing student engagement through classroom management in terms of time management, routines, preventive and reactive strategies with student academic motivation in terms of intrinsic and extrinsic motivation. The findings suggest that educators should enhance competencies and foster student motivation to boost student engagement and improve learning outcomes. These factors

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are crucial in promoting a more engaging and effective learning environment for senior high school students.

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Keywords: educational management, teacher disposition, classroom management, student academic motivation, student engagement, path analysis, senior high school students, Region XII, Philippines

1. Introduction

Student engagement has been a persistent challenge in education and has been a focus for educational researchers for decades. The problem of student disengagement has been linked to issues related to curriculum relevance, instructional design, and pedagogical approaches (Barac *et al.*, 2021). It is well documented that across the nation, many at-risk students display patterns of disengagement from school, which can result in low academic achievement and ultimately school dropout (Cromwell, 2022). Moreover, the role of motivational and psychological factors, such as self-efficacy, intrinsic motivation, and well-being, in influencing student disengagement (Fredricks *et al.*, 2019).

Hence, student engagement is one of the important constructs that is used to understand the behavior of the student towards the teaching-learning process (Delfino, 2019). Examining the concept of student engagement necessitates recognizing the significant influence teachers have in shaping and promoting engagement. The role of teachers as critical contributors to the teaching and learning process in schools is widely acknowledged, as they have direct interactions with students; as such, they are considered a key factor in shaping the learning outcomes for students (Wang, 2024).

Several recent studies have explored the connections between teacher dispositions and student engagement. Lohbeck and Möller (2021) demonstrated that teacher enthusiasm and supportive classroom environments can positively influence students' academic self-concept, engagement, and normative beliefs. Larson and Shelley (2020) conducted a case study examining how teacher dispositions, such as caring and critical thinking, impacted student engagement in a teacher education program. Additionally, teachers' persistence, enthusiasm, and commitment are also related to student motivation, which brings about high student achievement (Guhao, 2019). On the other hand, negative teacher work values can harm students' academic performance and increase psychological and physical stress symptoms (Quines & Piñero, 2022).

Moreover, classroom management practices have been found to play a crucial role in fostering student engagement. Pedersen and Blijie (2022) investigated the effects of teachers' classroom management strategies on student engagement and achievement, revealing that proactive approaches that emphasize clear rules and routines were associated with higher engagement levels. Cheng *et al.* (2021) explored the mediating role

of teacher-student relationships in the link between classroom management and student engagement, highlighting the importance of positive teacher-student interactions.

Furthermore, the relationship between student academic motivation and engagement has been extensively explored in recent research. Smillie *et al.* (2019) demonstrated that student engagement mediated the relationship between motivation and academic achievement, highlighting its central role in translating motivation into successful learning outcomes. Jacobs *et al.* (2020) examined the impact of different types of motivation (intrinsic, identified, introjected, and extrinsic) on cognitive, emotional, and behavioral engagement, revealing that autonomous forms of motivation were more strongly associated with higher levels of engagement.

Despite extensive research on student engagement, significant knowledge gaps persist in understanding the interplay between teacher disposition, classroom management, and student academic motivation, particularly in the specific context of senior high school students in Region XII. In the growing body of research examining educational effectiveness, there remains a significant gap in understanding the complex interrelationships among teacher disposition, classroom management, and student academic motivation in senior high school settings (Anderson & Thompson, 2023). While studies have independently investigated teacher disposition and classroom management strategies, limited research has employed path model analysis to examine how these variables collectively influence student engagement (Williams & Park, 2020).

This study determined the path model of student engagement among senior high school students in Region XII. Specifically, it intended to achieve the following objectives: First, to describe the level of teacher disposition in terms of motivation to teach, teacher efficacy, willingness to learn, conscientiousness, and interpersonal and communication skills. Second, to determine the efficacy of classroom management of teachers in terms of time management, routines, preventive strategies, and reactive strategies. Third, to ascertain the level of student academic motivation in terms of intrinsic motivation, extrinsic motivation, and amotivation. Fourth, to identify the level of student engagement among senior high school students in terms of affective as to liking for learning, affective as to liking for school, behavioral engagement as to effort and persistence, behavioral engagement as to extracurricular activities and cognitive. Fifth, to determine the significant relationship between teacher disposition and student engagement, classroom management and student engagement, and student academic motivation and student engagement. Finally, to find the best fit model of student engagement among senior high school students.

2. Literature Review

Teachers with more positive dispositions also demonstrated more student-centered pedagogical approaches (Fonseca-Chacana, 2021). Additionally, teachers who demonstrated higher emotional intelligence were more adept at creating supportive

classroom environments that fostered student participation and interest (Lombardi *et al.*, 2021).

Moreover, Moore and Hill (2022) investigated the dispositions of effective teachers and their impact on classroom dynamics. Through qualitative interviews and observations, the researchers identify key dispositions such as empathy, resilience, and a growth mindset, which contribute to creating positive learning environments. The findings indicate that teachers who exhibit these dispositions not only enhance student engagement but also foster a sense of community and support among their students, ultimately leading to improved academic outcomes. This study underscores the importance of cultivating positive teacher dispositions within educator preparation programs to better equip teachers for the challenges of the classroom. In general, teachers' dispositions, including their enthusiasm, emotional support, and beliefs about students' abilities, are important contributors to fostering student engagement in the classroom (Fredricks *et al.*, 2019).

Furthermore, recent studies have investigated that well-organized and structured classrooms with clear routines, expectations, and procedures have been found to foster student engagement by minimizing distractions and promoting a sense of order (Dicke *et al.*, 2021). Effective behavior management strategies, such as positive reinforcement, consistent consequences, and proactive approaches, contribute to reducing disruptive behavior and increasing student engagement (Beymer *et al.*, 2021).

According to Quines and Relacion (2022), good classroom management means that teachers provide an opportunity for students to work meaningfully in accordance with their own real-life experiences. Moreover, the effectiveness of proactive classroom management strategies in promoting positive student behavior and enhancing academic engagement. The study highlights the critical role of teacher preparedness in utilizing these strategies effectively, suggesting that professional development focused on proactive management can lead to improved student outcomes (Linscott & Colvin, 2020).

Additionally, developing research emphasized that students' academic motivation is significantly influenced by their sense of belonging in the learning environment, with higher belonging associated with increased intrinsic motivation, engagement, and academic achievement, particularly for underrepresented minority students (Gopalan & Brady, 2020). The teacher's ability to develop students' competence, interest in the subject taught, and perception of self-efficacy are all important factors that influence students' motivation to learn (Quines & Relacion, 2022).

Moreover, it was found out that academic goals that students set for themselves were influenced by their perceived self-efficacy for academic accomplishment, which was influenced by their beliefs in their ability to learn through self-regulation. By increasing students' grade goals, academic self-efficacy has a direct and indirect impact on achievement (Zimmerman *et al.*, 1992).

The urgency of this research is underscored by the critical challenges facing contemporary education, particularly in senior high school settings where student engagement is increasingly complex and challenging. With rising rates of academic

disengagement, dropout rates, and diminishing student motivation, there is an immediate need to understand the intricate mechanisms that drive student engagement. The proposed study becomes particularly urgent in light of recent educational disruptions which have significantly impacted students' learning experiences, psychological well-being, and academic motivation. This imperative aligns directly with the United Nations Sustainable Development Goal 4 (SDG4), which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030. The goal's emphasis on quality education and equal access resonates strongly with the need to understand and enhance student engagement through improved teaching practices and classroom dynamics.

Hence, by systematically examining the interrelationships between teacher disposition, classroom management, and student academic motivation, this research can provide timely, actionable insights to address the mounting educational crisis while contributing to the broader global agenda of achieving quality education for all.

This study was anchored on the self-determination theory by Ryan and Deci (2000). This provides an excellent theoretical anchor for student engagement, offering a comprehensive framework that illuminates how psychological needs fundamentally drive learner motivation and participation. Also, it reveals that engagement emerges through the interplay of autonomy, competence, and relatedness, demonstrating how supportive learning environments can catalyze intrinsic motivation and sustained student involvement (Reeve & Lee, 2019).

Moreover, a supporting theory in this study is the attachment theory proposed by Bowlby in 1969. It suggests that positive teacher-student relationships, built through effective classroom management, fulfill students' needs for connection and increase engagement. Students are more likely to be engaged when teachers manage their anger and build warm relationships (Roorda *et al.*, 2011).

Additionally, another supporting theory is Skinner's (1974) behavioral management theory. This provides a foundational understanding of how classroom management influences student engagement through clear expectations and routines, positive reinforcement systems, and consistent consequences. The theory suggests that well-structured behavioral management systems increase student engagement by creating predictable learning environments and reinforcing desired behaviors (Simonsen *et al.* 2008).

Furthermore, another supporting theory is the Ames (1992) goal orientation theory. This examines how different types of goals influence students' motivation, learning strategies, and engagement in academic settings. It primarily distinguishes between two types of goal orientations, the mastery orientation and the performance. Students seek to achieve high grades and recognition, often focusing on outcomes rather than the learning process itself (Dweck & Leggett, 1988).

3. Material and Methods

The respondents involved in this study were Senior High School Students in public schools of the Department of Education, Regional Office XII. The region has approximately 154,154 senior high school students who are qualified to be included as participants in this study. However, this will only include a total number of 400 respondents as computed using the Raosoft calculator. The breakdowns of the respondents were as follows: General Santos City (99), Koronadal City (32), South Cotabato (148), and Sarangani (121). The Raosoft sample size calculator was used to calculate the sample size for this study. The sample size was calculated based on a confidence interval of 95%, a margin of error of 0.05 and a response distribution of 50% using the recommended formula in the Raosoft® sample size calculator (Azhan *et al.*, 2024).

The study used stratified random sampling to ensure a representative sample and minimize biases. Participants will be randomly selected within each stratum. According to Taherdoost (2016), stratified random sampling is a probability sampling technique in which the researcher divides the entire population into different subgroups or strata, then randomly selects the final subjects proportionally from the different strata. This type of sampling is used when the researcher wants to highlight specific subgroups within the population. Stratified sampling ensures that each subgroup is properly represented within the sample.

In addition, criteria were established for the participants to meet in order to qualify as study respondents (inclusion). Participants must be bonafide senior high school students. This ensures that the study focuses on the target educational level. Students must be enrolled in public schools under the Department of Education, Region XII. This narrows the scope to a specific educational system and geographic area. Participants must have an approved and signed assent form. This is crucial for ethical research practices, especially when working with potentially underage students. The respondents are expected to provide accurate data of teacher disposition, classroom management, student academic motivation, and student engagement.

On the other hand, out-of-school youth will not be included in the study. This maintains the focus on currently enrolled students. Students from private schools are also excluded. This decision helps to control for potential variables that might differ between public and private educational settings. Furthermore, respondents had the option of withdrawing from the survey if their interests precluded it, if they were uncertain about the confidentiality of the data, or if devoting time to the survey was not a priority due to prior commitments.

The researcher employed a non-experimental research method utilizing a descriptive-correlational research design. According to Cresswell and Gutterman (2023), descriptive-correlational research aims to describe and quantify the strength and direction of connections between phenomena in real-world contexts by analyzing correlations between variables as they occur naturally without changing any conditions.

When studying complex behavioral, social, or educational phenomena where experimental manipulation is impractical or unethical, this non-experimental approach is particularly helpful because it allows researchers to identify patterns and make predictions while acknowledging that correlation does not imply causation.

Moreover, this study utilized statistical tools such as mean, Pearson r, regression analysis and path analysis method. These were used to measure the relationship between teacher disposition, classroom management, and student academic motivation towards engagement among senior high school students in Region XII. The Path Analysis Model is highly valuable for analyzing intricate models with multiple variables, as it reveals both direct and indirect relationships between these variables. It also explored the model fit value (Bastasa & Guhao, 2024).

In gathering the relevant data for this research, the following steps were followed: First, the researcher asked for approval from the University of Mindanao Ethics Review Committee by submitting all the required documents. After the approval, the researcher requested permission from the appropriate authorities of the Department of Education, Region XII, such as the regional director, superintendents, and principals to conduct the survey study in their schools. This will ensure compliance with policies and approval to collect data. Second, upon approval, the Assent Form was distributed to the parents or guardians of the respondents if they would allow their child to participate in the survey. Given the permission from the parents or guardians, the survey questionnaires were distributed to the selected respondents. Care will be taken to ensure respondent anonymity. Students were given ample time to complete the survey on their own time. Reminders were sent to prompt completion. Students who wished to opt out could voluntarily withdraw from the process. Third, completed surveys were gathered by the researcher. The survey responses were compiled for the next stage of analysis. Fourth, survey questionnaires were checked for completion and prepared for analysis by coding responses and inputting data into statistical software.

The data were reviewed and interpreted using the appropriate statistical treatments. First, the mean, was used to assess the teacher disposition, classroom management, student academic motivation and student engagement. Second, the Pearson product-moment correlation coefficient (Pearson's r) is a widely used measure of the strength and direction of the linear relationship between two continuous variables. It was used in this study to explore how the teacher disposition, classroom management, and student academic motivation interact with the endogenous variable, student engagement. Third, Regression Analysis was used to determine the significant influence between teacher disposition, classroom management, student academic motivation, and student engagement. Lastly, a Path Model Analysis was used to determine the effect of teacher disposition, classroom management, and student academic motivation interacting with the endogenous variable, student engagement. It also explored the model fit value.

Further, Bhale and Bedi (2024) study stated that when evaluating the goodness-of-fit of a model, it is recommended to consider multiple fit indices, as no single index is

universally accepted as superior. Commonly reported fit indices include the comparative fit index of 0.95 or above, the root mean square error of approximation of less than or equal to 0.06, the standardized root mean square residual is less than or equal to 0.08, and the Tucker-Lewis index of 0.95 and above (Hooper, Coughlan, & Mullen, 2008). Additionally, the chi-square statistic and its associated p-value can be reported, although it is sensitive to sample size (Bhale & Bedi, 2024). A combination of these fit indices should be examined to assess the overall model fit and identify the best-fitting model (Byrne, 2022).

There were significant ethical considerations in this quantitative study regarding proper research operation, confidentiality, anonymity, and adherence to university standards. The key ethical principles guiding this research are: voluntary participation, informed consent, respect for respondent privacy, avoiding plagiarism or fabrication, securing permission, and avoiding conflicts of interest or deceit. This study followed the ethical guidelines set by the University of Mindanao Ethics Review Committee regarding the treatment of subjects and data with certificate of approval protocol number UMERC-2024-295 dated September 24, 2024.

An authorship provision was made clear in the study. The author is currently enrolled in the University of Mindanao Professional Schools. She experienced a series of modifications for her dissertation based on the ideas and recommendations offered by her adviser, who had helped her all throughout for the conclusion of this work. The refining of the work had been made feasible by the assistance of her adviser. Hence, the adviser was the researcher's co-author on the study when it was published.

4. Results and Discussion

Table 1: Level of Teacher Disposition

Indicators	Standard Deviation	Mean	Descriptive Equivalent
Motivation to Teach	0.50	4.60	Very High
Teacher Efficacy	0.46	4.57	Very High
Willingness to Learn	0.58	4.38	Very High
Conscientiousness	0.56	4.45	Very High
Interpersonal and Communication Skills	0.50	4.46	Very High
Overall	**0.42**	**4.49**	**Very High**

Presented in Table 1 is the level of teacher disposition, which has a weighted mean of 4.49 with a standard deviation of 0.42 and a verbal interpretation of very high. It is manifested that teachers exhibited outstanding professional qualities, attitudes, and behaviors. Moreover, among the five indicators, motivation to teach had the highest mean value of 4.57 and willingness to learn gained the lowest mean value of 4.38.

Consequently, the very high overall disposition score indicates that teachers treated students fairly and equitably, they showed and demonstrated passion for teaching, they understood their role and responsibilities in the school context and

demonstrated a commitment to students' learning. However, the lower mean value for willingness to learn implies that teachers need to improve in fostering students' self-directed learning, seeking support and advice from others, incorporating professional learning and feedback into practice and having high expectations of students.

Basically, teachers enter education with experiences, both personal and formalized through teacher preparation programs that influence their dispositions about people, learning, and how the world should work (Truscott & Obiwo, 2020). Further, teachers are expected to demonstrate appropriate appearance and decorum and model the value of punctuality and being careful about the effect of one's behavior on students (Ricaplaza & Quines, 2022).

Table 2: Level of Classroom Management

Indicators	Standard Deviation	Mean	Descriptive Equivalent
Time Management	0.48	4.52	Very High
Routines	0.53	4.50	Very High
Preventive Strategies	0.54	4.46	Very High
Reactive Strategies	0.54	4.55	Very High
Overall	**0.43**	**4.51**	**Very High**

Exhibited in Table 2 is the level of classroom management, with a weighted mean of 4.51 and a standard deviation of 0.43 with a descriptive equivalent of very high. It was observed that teachers are demonstrating highly effective strategies in creating and maintaining conducive learning environments. Moreover, the results show that reactive strategies got the highest mean value of 4.55 and preventive strategies gained the lowest mean value of 4.46.

Subsequently, the very high overall classroom management score implies that teachers gave a warning first when a student misbehaved, made sure that students were paying attention to the class, stopped doing things that disrupted the class and treated all students equally. On the other hand, the teacher needs to improve when setting clear rules about how students need to behave. They must ensure that the students know how to behave during lessons, and they must always notice what is happening in the classroom and so with controlling of what is happening during the lesson.

The result is similar to the idea of Guhao and Sichon (2020) that the use of positive discipline in classroom management showed a statistically significant improvement in the behavior of students. It has been observed that students' perception as being part of the school community decreases the incidence of socially risky behavior such as emotional distress and suicidal attempts or thoughts, cigarette, alcohol and marijuana use; violent behavior and increases academic performance.

In addition, making the classroom a learning environment means keeping the students related to the course and establishing order in the classroom by creating rules. The social, physical, psychological, and pedagogical conditions in which learning takes

place and which have an impact on students' academic performance and attitudes make up the learning environment (Quines & Tubo, 2023).

Table 3: Level of Student Academic Motivation

Indicators	Standard Deviation	Mean	Descriptive Equivalent
Intrinsic Motivation Knowledge	0.51	4.51	Very High
Intrinsic Motivation Accomplishment	0.59	4.31	Very High
Intrinsic Motivation Stimulation	0.58	4.38	Very High
Extrinsic Motivation Identified Regulation	0.40	4.75	Very High
Extrinsic Motivation Introjected Regulation	0.50	4.43	Very High
Extrinsic Regulation	0.48	4.64	Very High
Amotivation	1.26	2.02	Low
Overall	**0.36**	**4.15**	**High**

Table 3 presents the level of student academic motivation with an overall weighted mean score of 4.15 and a standard deviation of 0.36 with a verbal interpretation of high. This implies that students demonstrate substantial internal drive and reasons for engaging in academic activities and pursuing their educational goals. Moreover, results revealed that among the indicators, extrinsic motivation identified regulation received the highest mean value of 4.75 and amotivation gained the lowest mean of 2.02.

Accordingly, the high overall student academic motivation score indicates that the students want to show themselves that they can succeed in their studies, and education will help them better prepare for the career they will choose and will enable them to enter the job market in a field that they like. However, some students cannot understand what they are doing in school, and they feel that they are wasting their time, wondering whether they should continue to go to school or not.

These findings align with those of Anderson and Thompson (2023), who stressed that academic motivation encompasses both intrinsic and extrinsic factors that influence students' desire to learn, persist through challenges, and achieve educational goals. Moreover, students who view intelligence as malleable rather than fixed demonstrate greater persistence in facing academic challenges and maintain higher levels of motivation throughout their educational journey (Chen & Harrison, 2019). Hence, teachers' warmth, care and genuine interest in the student increase student achievement (Guhao, 2019).

Table 4: Level of Student Engagement

Indicators	Standard Deviation	Mean	Descriptive Equivalent
Affective (Liking for Learning)	0.53	4.61	Very High
Affective (Liking for School)	0.73	4.35	Very High
Behavioral Engagement (Effort & Persistence)	0.54	4.21	Very High
Behavioral Engagement (Extracurricular Activities)	0.86	3.97	High
Cognitive	0.45	4.44	Very High
Overall	**0.45**	**4.32**	**Very High**

Shown in Table 4 are the weighted means of each indicator of student engagement, in which the overall weighted mean is 4.32 with a standard deviation of 0.45 and a descriptive interpretation of very high. The results revealed that affective (liking for learning) has the highest mean score with a mean value of 4.61, and behavioral engagement (extracurricular activities) gained the lowest mean value of 3.97.

Thus, the very high overall student engagement score implies that most of the students are very interested in learning; they think that what they are learning in school is interesting, they like what they are learning, they enjoy learning new things in class, and they think learning is fun. Conversely, some of them need to take an active role in extracurricular activities and volunteer to help in school activities such as sport day and parent day.

This conforms to the findings of Quines and Relacion (2022), which revealed that engagement focuses on individuals' dispositions or attitudes about classroom experiences and life-long learning. Furthermore, student engagement is crucial for academic success and involves active participation, emotional connection to learning, and deep cognitive investment in educational activities (Thompson & Wilson, 2023).

Table 5: Significance of the Relationship between Teacher Disposition and Student Engagement

Teacher Disposition	**Student Engagement**					**Overall**
	Affective (Liking for Learning)	**Affective (Liking for School)**	**Behavioral Engagement (Effort & Persistence)**	**Behavioral Engagement (Extracurricular Activities)**	**Cognitive**	
Motivation to Teach	.207* (0.000)	.171* (0.001)	.151* (0.002)	.050 (0.317)	.226* (0.000)	.204* (0.000)
Teacher Efficacy	.319* (0.000)	.260* (0.000)	.245* (0.000)	.177* (0.000)	.343* (0.000)	.352* (0.000)
Willingness to Learn	.219* (0.000)	.173* (0.001)	.218* (0.000)	.120* (0.016)	.353* (0.000)	.274* (0.000)
Conscientiousness	.207* (0.000)	.230* (0.000)	.250* (0.000)	.129* (0.010)	.332* (0.000)	.297* (0.000)
Interpersonal and Communication Skills	.249* (0.000)	.225* (0.000)	.244* (0.000)	.229* (0.000)	.392* (0.000)	.354* (0.000)
Overall	**.292* (0.000)**	**.258* (0.000)**	**.272* (0.000)**	**.171* (0.001)**	**.405* (0.000)**	**.362* (0.000)**

*Significant at 0.05 significance level.

Shown in Table 5 are the results of the test of the relationship between teacher disposition and student engagement. As reflected in the hypothesis, the relationship was tested at a 0.05 significance level. The overall R-value of .364 with a p-value of less than 0.05 signified the rejection of the null hypothesis. It means a significant relationship exists between teacher disposition and student engagement. This means that teacher disposition is correlated with student engagement.

More specifically, the result reveals that all indicators of teacher disposition are positively correlated with student engagement. Since the p-value is less than 0.05, and the overall R-value is .204 on motivation to teach, .352 on teacher efficacy, .274 on willingness to learn, .297 on conscientiousness, and .354 on interpersonal and communication skills. As seen in the table, all indicators of each variable are correlated. Hence, data show a positive association between the two variables.

Correspondingly, Emiru and Gedifew (2024) study emphasized that teacher disposition affects student engagement in their learning through planning and accomplishing relevant activities that are indispensable in promoting and improving student engagement. Besides, Thien and Chan (2020) found that teacher self-efficacy influences students' engagement in learning. Further, teacher dispositions, including enthusiasm, empathy, and responsiveness, directly influence students' willingness to engage in learning activities (Mitchell & Rodriguez, 2023). Therefore, positive teacher-student relationships lead to increased cooperation and engagement in the classroom (Quines & Relacion, 2022).

Table 6: Significance of the Relationship between Classroom Management and Student Engagement

Classroom Management	Student Engagement					Overall
	Affective (Liking for Learning)	Affective (Liking for School)	Behavioral Engagement (Effort & Persistence)	Behavioral Engagement (Extracurricular Activities)	Cognitive	
Time Management	.266* (0.000)	.143* (0.004)	.152* (0.002)	.119* (0.018)	.264* (0.000)	.242* (0.000)
Routines	.330* (0.000)	.265* (0.000)	.240* (0.000)	.212* (0.000)	.366* (0.000)	.373* (0.000)
Preventive Strategies	.274* (0.000)	.176* (0.000)	.231* (0.000)	.269* (0.000)	.397* (0.000)	.357* (0.000)
Reactive Strategies	.301* (0.000)	.228* (0.000)	.247* (0.000)	.212* (0.000)	.340* (0.000)	.350* (0.000)
Overall	**.359* (0.000)**	**.250* (0.000)**	**.267* (0.000)**	**.251* (0.000)**	**.420* (0.000)**	**.407* (0.000)**

*Significant at 0.05 significance level.

Shown in Table 6 are the results of the test of the relationship between classroom management and student engagement. As reflected in the hypothesis, the relationship was tested at a 0.05 significance level. The overall R-value of .407 with a p-value of less than 0.05 signified the rejection of the null hypothesis. It means a significant relationship exists between classroom management and student engagement. This means that classroom management is correlated with student engagement.

More specifically, the result reveals that all indicators of classroom management are positively correlated with student engagement. Since the p-value is less than 0.05, and the overall R-value is .242 on time management, .373 on routines, .357 on preventive strategies, and .350 on reactive strategies. As seen in the table, all indicators of each

variable are correlated. Hence, data show a positive association between the two variables.

Indeed, the result is similar to the idea of Williams and Chen (2023) that effective classroom management creates an organized, supportive environment that directly enhances student engagement through structured routines, clear expectations, and positive learning experiences. Moreover, effective classroom management enhances student engagement through maximized instructional time, reduced behavioral disruptions, increased student participation, enhanced learning opportunities, stronger peer relationships, and improved academic achievement (Lee & Rodriguez, 2020). Therefore, the relationship between classroom management and student engagement represents a fundamental dynamic in educational effectiveness.

Table 7: Significance of the Relationship between Student Academic Motivation and Student Engagement

Student Academic Motivation	**Student Engagement**					**Overall**
	Affective (Liking for Learning)	**Affective (Liking for School)**	**Behavioral Engagement (Effort & Persistence)**	**Behavioral Engagement (Extracurricular Activities)**	**Cognitive**	
Intrinsic Motivation Knowledge	.341* (0.000)	.221* (0.000)	.277* (0.000)	.233* (0.000)	.404* (0.000)	.385* (0.000)
Intrinsic Motivation Stimulation	.427* (0.000)	.358* (0.000)	.375* (0.000)	.334* (0.000)	.446* (0.000)	.519* (0.000)
Extrinsic Motivation Identified Regulation	.415* (0.000)	.244* (0.000)	.316* (0.000)	.204* (0.000)	.392* (0.000)	.406 (0.000)
Extrinsic Motivation Introjected Regulation	.319* (0.000)	.342* (0.000)	.421* (0.000)	.338* (0.000)	.486* (0.000)	.509* (0.000)
Extrinsic Regulation	.354* (0.000)	.241* (0.000)	.356* (0.000)	.155* (0.002)	.469* (0.000)	.396* (0.000)
Amotivation	.054 (0.283)	.055 (0.268)	.244* (0.000)	.219* (0.000)	.044 (0.376)	.180* (0.000)
Overall	**.467* (0.000)**	**.382* (0.000)**	**.544* (0.000)**	**.434* (0.000)**	**.557* (0.000)**	**.637* (0.000)**

*Significant at 0.05 significance level.

Shown in Table 7 are the results of the test of the relationship between student academic motivation and student engagement. As reflected in the hypothesis, the relationship was tested at a 0.05 significance level. The overall R-value of .637 with a p-value of less than 0.05 signified the rejection of the null hypothesis. It means a significant relationship exists

between student academic motivation and student engagement. This means that student academic motivation is correlated with student engagement.

More specifically, the result reveals that all indicators of student academic motivation are positively correlated with student engagement. Since the p-value is less than 0.05, and the overall R-value is .385 on intrinsic motivation knowledge, .438 on intrinsic motivation accomplishment, .519 on intrinsic motivation stimulation, .406 on extrinsic motivation identified regulation, .509 on extrinsic motivation introjected regulation, .396 on extrinsic regulation and .180 on amotivation. As seen in the table, all indicators of each variable are correlated. Hence, data show a positive association between the two variables.

The results align with those of Thompson and Wilson (2023), who asserted that academic motivation functions as a fundamental driver of student engagement, with their research demonstrating strong correlations between motivational levels and students' behavioral, emotional, and cognitive engagement in learning activities. Further, Chen and Rodriguez (2021) support this understanding through their comprehensive study, which reveals the reciprocal nature of the motivation-engagement relationship, where increased motivation leads to enhanced engagement, which in turn strengthens motivational patterns. Consequently, student achievement improves when an encouraging educational environment is established and vice versa (Guhao & Sioting, 2023).

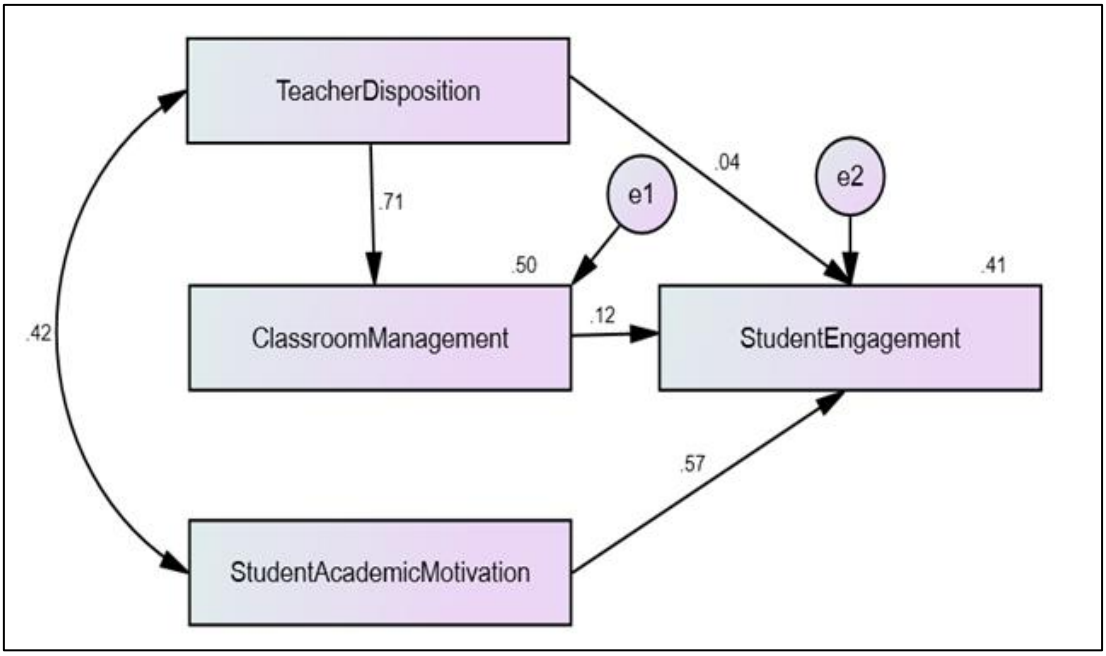


Figure 2: Path Analysis Model 1 in Standardized Solution

Legend:
TeacherDisposition = Teacher Disposition
ClassroomManagement = Classroom Management
StudentAcademicMotivation = Student Academic Motivation
StudentEngagement = Student Engagement

Figure 2 is the Path Analysis Model 1 in Standardized Solution, which reveals the intricate relationships between teacher disposition, classroom management, student academic motivation, and student engagement within the educational context. The standardized path coefficients demonstrate that teacher disposition has a strong positive direct effect on classroom management with a beta value of 0.71, yet only a minimal direct influence on student engagement with a beta value of 0.04. A moderate correlation exists between teacher disposition and student academic motivation with an R-value of 0.42, suggesting an important interconnection between these variables. Classroom management shows a relatively weak direct effect on student engagement with a beta value of 0.12, while student academic motivation emerges as the strongest direct predictor of student engagement with a beta value of 0.57. The model includes error terms for both classroom management of 0.50 and student engagement of 0.41, indicating that 50 percent and 41 percent of their respective variances remain unexplained by the variables in the model.

Therefore, these standardized solutions suggest that while teacher disposition strongly influences classroom management practices, its impact on student engagement operates primarily through indirect pathways. The dominant role of student academic motivation in directly affecting student engagement highlights its crucial importance in the educational process while also acknowledging that other unmeasured factors contribute to both classroom management and student engagement outcomes.

Table 8: Estimates of Variable Regression Weights in Path Analysis Model 1

			B	S.E.	C.R.	BETA	P
ClassroomManagement	<---	TeacherDisposition	.714	.036	19.915	.706	***
StudentEngagement	<---	ClassroomManagement	.124	.057	2.189	.119	.029
StudentEngagement	<---	StudentAcademicMotivation	.718	.053	13.497	.571	***
StudentEngagement	<---	TeacherDisposition	.046	.060	.766	.044	.444

Note: Chi-square = 26.673; Degrees of freedom = 1; Probability level = .000

Table 8 shows the Estimates of Variable Regression Weights in Path Analysis Model 1. Teacher disposition to classroom management revealed a significant regression with a p-value less than 0.001. This path signifies that every unit increase in teacher disposition corresponds to a .714-unit increase in classroom management with a standard error of .036. At the same time, classroom management with student engagement showed a regression with a p-value less than 0.001. It signifies that every unit increase in classroom management corresponds to a .124-unit increase in student engagement with a p-value of .029. Also, student academic motivation to student engagement obtained a significant regression with a p-value less than 0.001, which means that in every unit increase, student academic motivation corresponds to a .718 increase in student engagement. Lastly, teacher disposition to student engagement revealed a significant regression with a p-value less than 0.001, which means that in every unit increase, teacher disposition corresponds to a .046 increase in student engagement with a p-value of .444.

It has been found out that teacher disposition and classroom management have a statistically significant relationship. Also, classroom management, student academic motivation, and teacher disposition have a significant relationship to student engagement.

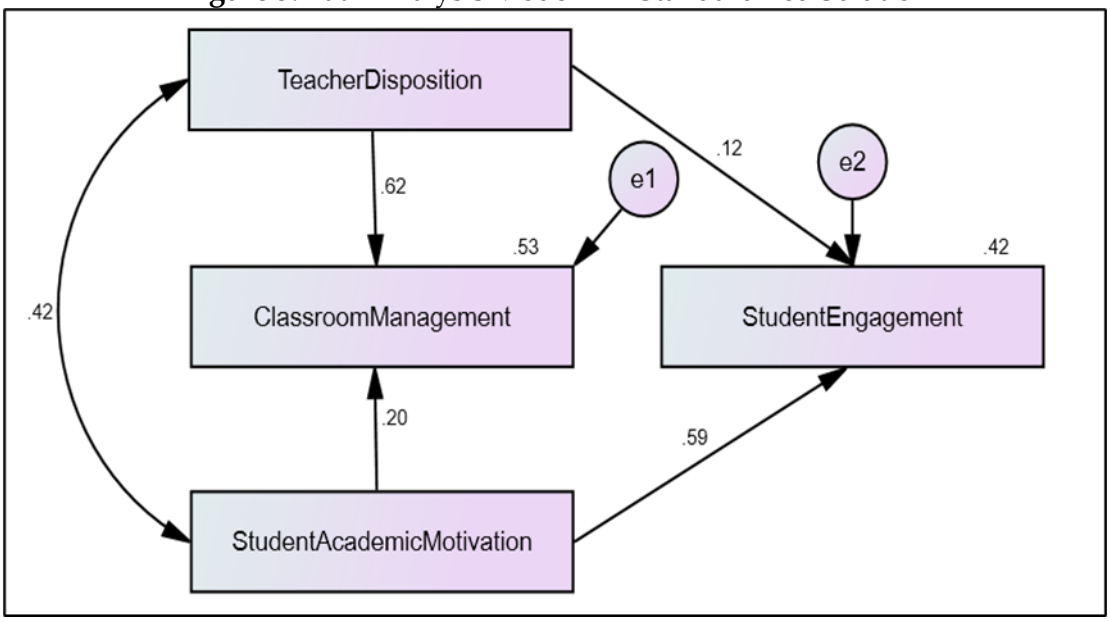
Table 9: Goodness of Fit Measures of Path Analysis Model 1

Index	Criterion	Model Fit Value
P-Close	> 0.05	.000
CMIN/DF	0 < value < 2	26.673
P-value	> 0.05	.000
GFI	> 0.95	.969
CFI	> 0.95	.957
NFI	> 0.95	.955
TLI	> 0.95	.740
RMSEA	< 0.05	.254

Legend:
CMIN/DF = Chi-Square/Degrees of Freedom
NFI = Normed Fit Index
TLI = Tucker-Lewis Index
CFI = Comparative Fit Index
GFI = Goodness of Fit Index
RMSEA = Root Means Square of Error Approximation
Pclose = P of Close Fit
P-value = Probability Level

Results from the data gathered, Goodness of Fit Measures of Path Analysis Model 1 on Table 9, shows that Chi-Square/Degrees of Freedom obtained wherein the value is greater than 0 but less than 2 with 26.673 model fit value; Goodness Fit Index has a criterion of greater than 0.95 with.969 model fit value; Comparative Fit Index of greater than .095 with.957 model fit value; Normed Fit Index of greater than 0.95 with model fit value of .955; Tucker-Lewis Index has a criterion of greater than 0.95 with .740 model fit value and RMSEA- Root Means Square of Error Approximation gained less than 0.05 and a model fit value of .254.

Figure 3: Path Analysis Model 2 in Standardized Solution



Legend:
TeacherDisposition = Teacher Disposition
ClassroomManagement = Classroom Management
StudentAcademicMotivation = Student Academic Motivation
StudentEngagement = Student Engagement

Shown in appended Figure 3 is the Path Analysis Model 2 in Standardized Solution, which demonstrates a modified network of relationships among teacher disposition, classroom management, student academic motivation, and student engagement in the educational environment. The standardized coefficients show that teacher disposition maintains a strong positive direct effect on classroom management with a beta value of 0.62 and has a slightly increased direct effect on student engagement with a 0.12 beta value compared to Model 1. Student academic motivation emerges as a more complex variable in this model, showing a moderate correlation with teacher disposition R-value of 0.42 and having a significant influence on both classroom management with beta value of 0.20 and student engagement with 0.59 beta value. The error terms for classroom management were 0.53 and student engagement with 0.42 indicates that 53 percent and 42 percent of their respective variances are unexplained by the model's variables. This revised model highlights a more interconnected system where student academic motivation plays a dual role - directly affecting student engagement while also contributing to classroom management. Hence, the standardized solutions suggest that while teacher disposition remains important for classroom management, student academic motivation has emerged as a more central factor, influencing both the management of the classroom and student engagement levels.

Table 10: Estimates of Variable Regression Weights in Path Analysis Model 2

			B	S.E.	C.R.	BETA	P
ClassroomManagement	<---	TeacherDisposition	.631	.038	16.527	.623	***
StudentEngagement	<---	StudentAcademicMotivation	.747	.053	13.976	.588	***
StudentEngagement	<---	TeacherDisposition	.125	.045	2.770	.117	.006
ClassroomManagement	<---	StudentAcademicMotivation	.238	.045	5.252	.198	***

Note: Chi-square = 4.458, Degrees of freedom = 1, Probability level = .035

Table 10 depicts the results of the Estimates of Variable Regression Weights in Path Analysis Model 2, which shows that teacher disposition to classroom management revealed a significant regression with a p-value less than 0.001. This path signifies that every unit increase in teacher disposition corresponds to a .631-unit increase in classroom management with a standard error of .038.

While student academic motivation to student engagement gained a regression of .747 with a standard error of .053, teacher disposition to student engagement obtained a .125 regression and a standard error of .045 with a p-value of .006. Also, student academic motivation to classroom management revealed a significant regression with a p-value less than 0.001. This signifies that every unit increase in student academic motivation corresponds to a .238-unit increase in classroom management.

Moreover, it has been found out that teacher disposition and student academic motivation have a significant relationship to classroom management. Therefore, student academic motivation and teacher disposition have a significant relationship to student engagement.

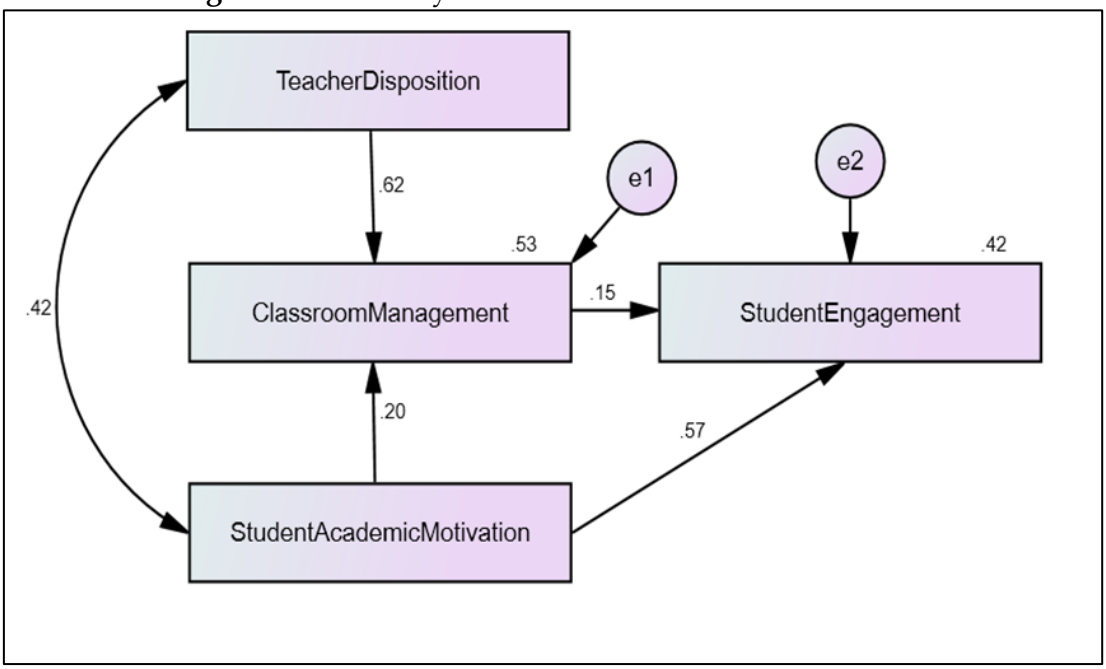
Table 11: Goodness of Fit Measures of Path Analysis Model 2

Index	Criterion	Model Fit Value
P-Close	> 0.05	.134
CMIN/DF	0 < value < 2	4.458
P-value	> 0.05	.035
GFI	> 0.95	.994
CFI	> 0.95	.994
NFI	> 0.95	.993
TLI	> 0.95	.965
RMSEA	< 0.05	.093

Legend:
CMIN/DF = Chi-Square/Degrees of Freedom
NFI = Normed Fit Index
TLI = Tucker-Lewis Index
CFI = Comparative Fit Index
GFI = Goodness of Fit Index
RMSEA = Root Means Square of Error Approximation
Pclose = P of Close Fit
P-value = Probability Level

Table 11 depicts the Goodness of Fit Measures of Path Analysis for Model 2. Results revealed from the data gathered on Goodness of Fit Measures of Path Analysis Model 2. Chi-Square/Degrees of Freedom obtained wherein the value is greater than 0 but less than 2 with a model fit value of 4.458; Goodness of fit index has a criterion of greater than 0.95 a model fit value of .994; Comparative Fit Index is greater than 0.95 and .994; Normed Fit Index has a criterion of greater than 0.95 with a model fit value of .993; Tucker-Lewis Index has greater than 0.95 criterion with .965 model fit value; RMSEA-Root Means Square of Error Approximation has a criterion of less than 0.05 with a model fit value of .093.

Figure 4: Path Analysis Model 3 in Standardized Solution



Legend:
TeacherDisposition = Teacher Disposition
ClassroomManagement = Classroom Management
StudentAcademicMotivation = Student Academic Motivation
StudentEngagement = Student Engagement

As shown in Figure 4, the Path Analysis Model 3 in Standardized Solution reveals the evolving relationships between teacher disposition, classroom management, student academic motivation, and student engagement in the educational setting. In this model, teacher disposition maintains a strong direct effect on classroom management with a beta value of 0.62, but notably, there is no direct path that operates entirely through indirect pathways. Student academic motivation continues to play a significant role, demonstrating a moderate correlation with teacher disposition R-value of 0.42 and maintaining substantial influence on both classroom management of 0.20 and student engagement of 0.57 beta values. Classroom management shows a slightly stronger direct effect on student engagement of 0.15 beta value compared to previous models. The error

terms for classroom management was 0.53 and student engagement was 0.42, indicating that 53 percent and 42 percent of their respective variances remain unexplained by the model's variables.

Consequently, this third model emphasizes a more streamlined path structure where teacher disposition's influence on student engagement is fully mediated through classroom management, while student academic motivation remains a powerful direct predictor of student engagement. The model suggests that effective educational outcomes result from a combination of teacher-driven classroom management practices and student-centered motivational factors, with each component contributing uniquely to overall student engagement.

Table 12: Estimates of Variable Regression Weights in Path Analysis Model 3

			B	S.E.	C.R.	BETA	P
ClassroomManagement	<---	TeacherDisposition	.631	.038	16.527	.623	***
ClassroomManagement	<---	StudentAcademicMotivation	.238	.045	5.252	.198	***
StudentEngagement	<---	StudentAcademicMotivation	.724	.054	13.309	.570	***
StudentEngagement	<---	ClassroomManagement	.154	.045	3.405	.146	***

Note: Chi-square = .634; Degrees of freedom =1; Probability level = .426

Table 12 depicts the results of the Estimates of Variable Regression Weights in Path Analysis Model 3, which shows that the teacher disposition to classroom management revealed a significant regression with a p-value less than 0.001. This path signifies that every unit increase in teacher disposition corresponds to a .631-unit increase in classroom management with a standard error of .038. At the same time, student academic motivation to classroom management gained a regression of .238 with a standard error of .045. Student academic motivation to student engagement obtained .724 regression and a standard error of .054. Also, classroom management to student engagement revealed a significant regression with a p-value less than 0.001. This signifies that every unit increase in classroom management corresponds to a .154-unit increase in student engagement.

The data revealed that teacher disposition and student academic motivation towards classroom management have a statistically significant relationship. In addition, student academic motivation and classroom management have a significant relationship with student engagement.

Table 13: Goodness of Fit Measures of Path Analysis Model 3

Index	Criterion	Model Fit Value
P-Close	> 0.05	.617
CMIN/DF	0 < value < 2	.634
P-value	> 0.05	.426
GFI	> 0.95	.999
CFI	> 0.95	1.000
NFI	> 0.95	.999
TLI	> 0.95	1.004
RMSEA	< 0.05	.000

Legend:
CMIN/DF = Chi-Square/Degrees of Freedom
NFI = Normed Fit Index
TLI = Tucker-Lewis Index
CFI = Comparative Fit Index
GFI = Goodness of Fit Index
RMSEA = Root Means Square of Error Approximation
Pclose = P of Close Fit
P-value = Probability Level

Table 13 depicts the Goodness of Fit Measures of Path Analysis for Model 3. Results revealed from the data gathered on Goodness of Fit Measures of Path Analysis Model 3. Chi-Square/Degrees of Freedom obtained wherein the value is greater than 0 but less than 2 with a model fit value of .634; Goodness of fit index has a criterion of greater than 0.95 a model fit value of .999; Comparative Fit Index is greater than 0.95 and 1.000; Normed Fit Index has a criterion of greater than 0.95 with a model fit value of .999; Tucker-Lewis Index has greater than 0.95 criterion with 1.004 model fit value; RMSEA-Root Means Square of Error Approximation has a criterion of less than 0.05 with a model fit value of .000.

Table 14: Summary of Goodness of Fit Measures of the Three Path Analysis Models

Model	P-Close	CMIN/DF	P- Value	GFI	CFI	NFI	TLI	RMSEA
	>0.05	**0<value<2**	**> 0.05**	**> 0.95**	**> 0.95**	**> 0.95**	**> 0.95**	**< 0.05**
1	.000	26.673	.000	.969	.957	.955	.740	.254
2	.134	4.458	.035	.994	.994	.993	.965	.093
3	.617	.634	.426	.999	1.000	.999	1.004	.000

Table 14 presents various model fit indices for three different models, labeled as 1, 2, and 3. These indices are commonly used to assess the goodness of fit of a structural equation modeling (SEM) or path analysis model.

For Model 1, the P-Close value is 0.000, which indicates a poor fit as it should be greater than 0.05 for a good model fit. The CMIN/DF value of 26.673 is also above the recommended threshold of less than 2, suggesting a poor fit. However, the P-Value, GFI, CFI, NFI, TLI, and RMSEA values all meet the recommended criteria, indicating an overall acceptable model fit.

Moreover, Model 2 has a P-Close value of 0.134, which is within the acceptable range, and the CMIN/DF value of 4.458 is also within the recommended threshold. The remaining fit indices, such as P-Value, GFI, CFI, NFI, TLI, and RMSEA, all fall within acceptable ranges, suggesting a good overall model fit.

Furthermore, in Model 3, the P-Close value is 0.617, indicating a good fit, and the CMIN/DF value of 0.634 is well within the recommended threshold. All the other fit indices, including P-Value, GFI, CFI, NFI, TLI, and RMSEA, also meet the required criteria, demonstrating an excellent overall model fit.

As a result, the figure presents the model fit indices for three different models, with Model 3 exhibiting the best overall fit, followed by Model 2 and Model 1. These findings can be useful in selecting the most appropriate model for the research context and making informed decisions about the validity and reliability of the proposed theoretical framework.

The Path Analysis Model 3 in Standardized Solution provides analysis on the interrelationships among the variables of the study and assessment of model fit. As shown in Figure 4, the amount of variance explained by the combined influence of teacher disposition, classroom engagement, and student academic motivation towards student engagement is 42 percent. On the other hand, 53 percent of the variance of classroom management can be attributed to the combined influence of teacher disposition and student academic motivation. In addition, student academic motivation with beta equivalent to 0.57 significantly influences student engagement with p-value less than 0.05. Moreover, teacher disposition with beta equivalent to 0.62 and student academic motivation with beta equals to 0.20 significantly predict classroom management with p-value less than 0.05. Lastly, teacher disposition and student academic motivation with beta equivalent of 0.42 significantly predict each other at p-value less than 0.05.

5. Recommendations

Based on the foregoing results and relevant findings, the following recommendations were made:

School heads or school administrators may foster an inclusive and supportive environment where students feel valued and respected, encouraging them to participate actively in their learning. Support teachers in implementing active learning strategies and analyze student feedback on their learning experiences and preferences. Furthermore, provides ongoing professional development that promotes student participation and collaborative platforms that engage students. Also, encourage teachers to build strong relationships with their students and regularly recognize and celebrate student achievements, both academic and non-academic.

Teachers may incorporate activities that require students to actively participate, such as group discussions, hands-on projects, and problem-solving tasks and get to know their students' interests and integrate them into lessons, creating a safe and welcoming atmosphere where students feel comfortable sharing their thoughts and asking questions. Moreover, diversify teaching methods to help students see the relevance of what they are learning by connecting lessons to real-world scenarios. Use ongoing assessments to gauge student understanding and adjust instruction accordingly, providing timely feedback to keep students engaged. Furthermore, regularly reflect on teaching practices and seek feedback from students to identify areas for improvement, remaining flexible and open to change.

Future researchers exploring predictors of student engagement may find this study a valuable reference point. However, it is important to understand that although

the conceptual framework can be used widely, local settings and cultural influences will probably affect the precise outcomes. Therefore, any researcher expanding on this work should carefully assess how their particular context can affect results, as this could lead to fresh discoveries or different findings that advance our understanding of how student engagement happens in a classroom setting.

6. Conclusion

Based on the results, it could be gleaned that teacher disposition, classroom management and student academic motivation have significant relationships to student engagement among public senior high school students. These associations and relationships have been presented on the tables presented in the discussion of results and significant findings. The results indicate that the teacher disposition is very high, classroom management is very high, and student academic motivation is high. Also, the level of student engagement among senior high school students is very high. Furthermore, after examining the data and selecting the best-fit model for student engagement of senior high school students using the Path Analysis Model, it was discovered that Model 3 met all of the conditions, making it the most fitting model.

Therefore, the results of this study support one of the models on the utilization of technology, which is the Self-determination Theory by Ryan and Deci (2002). The forms of motivation individuals experience when performing behaviors or tasks are determined by the extent to which doing so satisfies their basic psychological needs for autonomy, competence, and relatedness sustained student involvement.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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