

The Mediating Effect of Teaching Styles on the Relationship between Student Engagement and Students' Motivation

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ABSTRACT

Students' motivation is a key factor in education, that encompasses both internal and external forces that drive students to learn and succeed academically. The primary purpose of this study is to determine the mediating effect of teaching styles on the relationship between student engagement and students' motivation. This research utilized quantitative approach, non- experimental, descriptive with correlational research design implies mediation analysis with 353 samples from students of a local college in Santo Tomas, Davao Del Norte. This study used stratified random sampling technique. The statistical tools used in this study are mean, pearson r, and path analysis. The information was gathered from the respondents using adapted survey questionnaires which were subjected to content validity. The study's findings demonstrated that teaching style, students engagement, and students' motivation have a descriptive level of very high. Furthermore, the three variables demonstrated a significant interrelationship. Additionally, the findings indicated that teaching style partially mediates the relationship between students engagement and students' motivation. The findings suggest that teaching style plays a crucial mediating role in enhancing the relationship between student engagement and motivation, highlighting the need for effective teaching style strategies to foster student learning and to enhance their motivation.

Keywords - teaching styles, student engagement, student's motivation, mediation analysis, Philippines.

INTRODUCTION

Students' motivation is a key factor in education, that encompasses both internal and external forces that drive students to learn and succeed academically (Filgona et al., 2020). However, according to Ojong, (2024) students felt demotivated due to both intrinsic and extrinsic learning difficulties .Moreover ,studies revealed that students lack motivation due to various factors, including teacher unclear lesson delivery, student dissatisfaction with the learning process, and personal challenges (Nkanzela, 2021). Several factors contribute to low student motivation, including negative attitudes from classmates and teachers (Busse & Walter, 2022).

In Japan, students shows lack of motivation because they struggled to understand the lessons and consequently lost interest in learning (Azhari, 2021). This phenomenon is not isolated, that indicates that a lack of understanding can lead to decreased motivation, as students often feel frustrated and disengaged when they cannot grasp the material being taught (Samie, 2021) .The issue, revealing that 36.85% of college students in Japari experienced lack of motivation resulting to educational laziness, boredom due to a lack of understanding of the purposes and meaning of schooling, leading to lower motivation (Randelović, 2022).

In the Philippines, Quirino State University has been identified as a location where students have encountered significant lack of motivation (Orbeta & Paqueo ,2022). Students reported insufficient support and motivation from teachers, which is crucial for maintaining engagement in a learning environment (Serrano et al., 2023). Students often express negative attitudes towards subjects, perceiving them as irrelevant or uninteresting, which diminishes their motivation to engage in learning (Tran & Bui, 2024). According to Chamberlain, (2024) social factors including peer influences and family expectations, can distract students from their academic responsibilities are contributing to their lack of motivation. Meanwhile, factors such as inadequate learning materials and a poor learning further contribute to students' lack of motivation (Balbin et al., 2024)

Numerous research were carried out on teaching styles (Zhang et al., 2021 ; Afzali et al., 2024) underscores the pivotal role of supportive and engaging teaching styles in fostering academic resilience among adolescents. Many studies, also conduct on students engagement (Zajda, 2024; Balalle, 2024) focus more on major factors contributing to students' engagement in educational settings, models of inclusive schooling that promote quality engagement, cultural identities and their impact on engagement in the classroom, the role of intelligence and its influence on students' academic achievement, and the significance of social learning in students' engagement. Consequently, several studies were performed on students' motivation (Bureau et al., 2022; Havidz & Mujakiah 2023) students' self-determined motivation (acting out of interest, curiosity, and abiding values) is associated with higher academic well-being, persistence, and achievement. Although these three factors have been the subject of numerous studies, both domestically and internationally, the researchers have not come across how teaching styles might mediate the relationship between , student engagement and students' motivation in a local context. The study is important because it addresses a gap in existing research. It looks at specific factors that haven't been studied much before, especially in certain contexts.

This research will be disseminated through social media platforms like Facebook and Google Scholar, ensuring accessibility to a wide audience. Sharing these findings will help create awareness among educators and students about the role of teaching styles in enhancing engagement and motivation. Additionally, publishing on other educational platforms and websites will further promote the study's practical applications.

Statement Of The Problem

The primary purpose of this study is to determine the mediating effect of teaching styles on the relationship between student engagement and students' motivation. This study specifically aimed to address the following questions:

1. What is the level of student engagement in terms of:

- 1.1 affective engagement;
- 1.2 behavioral engagement; and
- 1.3 cognitive engagement?

2. What is the level of students' motivation in terms of:

- 2.1 self efficacy;
- 2.2 active learning strategies;
- 2.3 learning value;
- 2.4 performance goal;
- 2.5 achievement goal; and
- 2.6 learning environment stimulation?

3. What is the level of teaching styles in terms of:

- 3.1 teacher -students interaction;
- 3.2 decision -making negotiation;
- 3.3 teaching structuring; and
- 3.4 behavioral control?

4. Is there a significant relationship between:

4.1 student engagement and students' motivation;

4.2. student engagement and teaching styles; and

4.3 teaching styles and students' motivation?

5. Is there a significant mediating effect of teaching styles on the relationship between students' motivation and student engagement.

Hypotheses

The following hypotheses will be tested at/using a 0.05 level of significance:

1. There is no significant relationship between:

1.1. student engagement and students' motivation;

1.2 student engagement and teaching styles; and

1.3 teaching styles and students' motivation?

2. There is no significant mediating effect of teaching styles on the relationship between student engagement and students' motivation.

Theoretical Framework

The study is anchored to the theory of Deci and Ryan's Self-Determination Theory (1985), which connects to students' motivation, student engagement, and teaching styles by emphasizing the importance of fulfilling three fundamental psychological needs: relatedness, competence, and autonomy. Furthermore, this study emphasizes that empowering students with control over their learning, teaching styles like student-centered approaches can ignite intrinsic motivation and foster active engagement, leading to deeper learning and a lifelong passion for academic pursuits.

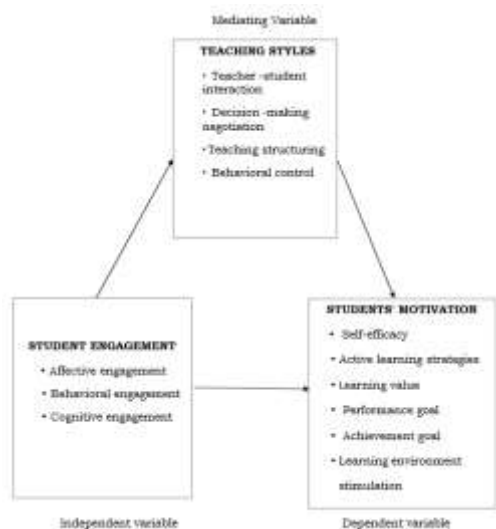
This study was also based on the proposition of López et al., (2024), who found that structured and regulating teaching techniques have a considerable impact on students' motivation and engagement levels. Moreover, according to Farikah et al., (2023) , that a diverse teaching styles that promote autonomy, competence, and relatedness can boost student motivation and engagement, creating a more proactive learning environment in which students feel empowered and connected to their educational experience.

Conceptual Framework

Figure 1 below presents the conceptual paradigm of this research. The independent variable of this study is student engagement with the following indicators: Affective engagement, Behavioral engagement and Cognitive engagement. Affective engagement refers to students' feelings about learning and the school they attend. Behavioral engagement refers to effort and persistence in school work and participation inextracurricular activities. Cognitive engagement refers to the cognitive strategies that students adopt and employ during the learning process (Lam et al. 2014).

The dependent variable is students' motivation with the following indicators: Self efficacy, Active learning strategies, learning value, Performance goal, Achievement goal and Learning environment stimulation. Self-efficacy refers to the individual's perception of his/her ability in accomplishing learning tasks. Active learning strategies to retrieve existing knowledge to interpret new experiences in order to construct new understanding. Learning value refers to whether or not students can perceive the value of science learning they engage. Performance goal toward tasks refers to students' attending the learning tasks for performance goal or

achievement goal. Achievement goal, is define as they are intrinsically motivated, they intend to accomplish something to satisfy their innate needs for improving their own competence. The learning environment stimulation comprises teachers’ teaching strategies, class activities, and student–teacher and student–student interactions that would influence an individual’s motivation in learning (Tuan et al.,2005).



Moreover, the mediating variable of the study is teaching styles with the following indicators: Teacher-student interaction, Decision -making negotiation, Teaching structuring and Behavioral control. Teacher-student Interaction, that allows measuring the students’ perceived level of emotional attachment to their teachers. Decision-making negotiation, it measures the level at which a teacher negotiates the classroom rules and decisions with the students. Teaching structuring, it measures the student’s perception of the course level structure describing the degree to which the student perceives regular teaching patterns. Behavioral control, it measures the level at which teachers control their students’ behavior during classroom time (Abello, et al 2020)

METHODOLOGY

Research Design

This research used a quantitative approach, non- experimental design, descriptive with correlational methods and mediation analysis. Quantitative research involves collecting and analyzing numerical data. It is useful for identifying patterns, calculating averages, predicting outcomes, examining cause and effect relationships, and generalizing findings to larger populations (Bhandari, 2022). Meanwhile, non-experimental research was primarily relies on observation, allows researchers to investigate how natural events unfold without manipulating any factors (Marlapudi, 2021). Moreover, descriptive research examines how different characteristics or variables relate to each other within a group according to Decker and Wilson (2023). Correlational research, observes and characterizes patterns without manipulating variables, it focuses on identifying and measuring the strength of relationships between two or more variables, without determining cause-and-effect (Pratama et al., 2023). Additionally, mediation analysis is a statistical approach used to investigate how an independent variable influences a dependent variable through one or more mediating variables (Schuler et al., 2024).

This study utilized quantitative to describe the quantitative data gathered regarding the level of the three variables, including students engagement, motivation, and teaching styles. The study used a non-experimental research design through surveys to assess the mediating effects of teaching styles on the relationship between student engagement and students' motivation. Moreover, descriptive methods is used to provide a detailed overview of the characteristics and levels of teaching styles, student engagement, and motivation within the studied group. Furthermore, correlational methods is applied to assist in identifying and measuring the strength of relationships between teaching styles, student engagement, and motivation without manipulating variables. Lastly, mediation analysis is used to investigate how teaching styles influence and mediate the relationship between student engagement and motivation, uncovering causal pathways.

Research Subject

The respondents for this study are 353 students out of a total population of 4,318 studying at a local college in Santo Tomas, Province of Davao Del Norte. The sample size was determined using the Raosoft Sample Size Calculator, with a 5% margin of error, a 95% confidence level, and an assumed response distribution of 50%. The respondents are selected through stratified random sampling technique. This method is a way to get more accurate results in research. It divides the population into smaller groups and then randomly selects samples from each group. This helps make sure that all parts of the population are represented (Wani et al., 2023).

Areas	Population	Sample	Percentage
GROUP A	1,234	101	28.61%
GROUP B	826	67	18.99%
GROUP C	1,343	110	31.16%
GROUP D	539	44	12.46%
GROUP E	70	6	1.7%
GROUP F	306	25	7.08%
Total Respondents	4,318	353	100%

Research Instrument

Student Engagement Questionnaire. This survey questionnaire was used to get the level of student engagement, it is from the research study titled "Understanding and measuring student engagement in school: The results of an international study from 12 countries." by Lam et al (2014). The questionnaire consists of 33 items covering the following aspects: affective engagement (9 items), behavioral engagement (12 items), and cognitive engagement (12 items). Respondents will rate each item using a 5-point Likert scale, ranging from 5 for "Very High" to 1 for "Very Low".

Teaching Styles Questionnaire. This survey questionnaire was used to get the level of work environment, it is from the research study titled "Development and validation of the Teaching Styles Inventory for Higher Education (TSIHE)" by Abello, et al. (2020). The questionnaire consists of 28 items covering the following aspects: Teaching - Student Interaction (10 items), Decision -Making Negotiation (6 items), Teaching Structuring (6 items) and Behavioral Control (6 items). Respondents provided their responses using a 5 point likert scale, ranging from 5 for "Very High" to 1 for "Very Low".

Students' Motivation Questionnaire. This survey questionnaire was used to get the level of students' motivation, it is from the research study titled "The development of a questionnaire to measure students' motivation towards science learning by Tuan et al (2005). The questionnaire consists of 35 items covering the following aspects: self-efficacy (7 items), active learning strategies (8 items), learning value (5 items), performance goal (4 items), achievement goal (5 items), and learning environment stimulation (6 items). Respondents will rate each item using a 5-point Likert scale, ranging from 5 for "Very High" to 1 for "Very Low".

Statistical Treatment of Data

Mean. The mean is the average value of a set of data, which is often used to summarize and evaluate quantitative information (Fromantin et al., 2020). This is used to determine the level of Students engagement, Motivation, and Teaching styles.

Pearson r. Pearson's correlation coefficient (r) measures the linear relationship between three continuous variables (Weisburd et al., 2020). This is used to determine the interrelationship among students engagement, teaching styles, and students' motivation.

Path Analysis. Path analysis, a statistical technique, helps researchers delve into cause-and-effect relationships. By examining direct and indirect links between variables, it provides valuable insights into their interactions (Lennox, 2023). This will be used to understand how teaching styles mediates the connection between students' motivation and engagement

RESULTS AND DISCUSSIONS

Level of Student Engagement

The results for the student engagement are presented, examined, and interpreted below. The mean was ranging from 4.51 to 4.64 with an equivalent overall mean of 4.59 and a standard deviation of 0.31. This is quantitatively described as very high which means very much observed. Moreover, the data could be gleaned that affective engagement is the indicator with the highest mean of 4.64 and described as very much observed, followed by cognitive engagement with the mean of 4.51. The overall findings imply that student engagement is often observed in their attitudes, participation, and approach to their learning process. Therefore, students demonstrate high levels of engagement, actively participating in class discussions and collaborative activities. Though their consistency in engagement could be improved, their overall involvement fosters both academic growth and a dynamic learning environment.

Table 1
Level of Student Engagement

Indicator	Mean	SD	Descriptive Level
Affective Engagement	4.64	0.37	Very high
Behavioral Engagement	4.62	0.29	Very High
Cognitive Engagement	4.51	0.28	Very High
Overall	4.59	0.31	Very High

It conforms to the study of Hisham et al., (2021), who emphasize that students with very high engagement levels, influenced by skill, emotional, participation level, and academic performance can enhance student engagement in their learning process. In addition to that, according to Liao et al., (2023) that student engagement serves as a foundation to students and to their learning outcomes, suggesting that effective management strategies that enhance engagement, could to improved academic results of the students.

Level of Students' Motivation

The results for the students' motivation are presented in table 2. The mean was ranging from 4.53 to 4.74 with an equivalent overall mean of 4.64 and a standard deviation of 0.43. This is quantitatively described as very high which is very much observed. Moreover, the data could be gleaned that achievement goal is the indicator with the highest mean of 4.74 and described as very much observed, followed by performance goal with the mean of 4.53. The overall findings imply that students' motivation is very much observed in their studies and approach to challenges in learning. Therefore, students show strong motivation and a clear drive to reach their goals. While their enthusiasm could be improved, their determination helps them succeed in school and grow personally.

Table 2
Level of students' motivation

Indicator	Mean	SD	Descriptive Level
Self-Efficacy	4.57	0.49	Very High
Active Learning Strategies	4.62	0.31	Very High
Learning Value	4.67	0.62	Very High
Performance Goal	4.53	0.49	Very High
Achievement Goal	4.74	0.32	Very High
Learning Environment Stimulation	4.70	0.35	Very High
Overall	4.64	0.43	Very High

It conforms to the study of David et al. (2024), which stated that motivation can encourage students to adopt new, more effective study habits, enhancing their self-regulated learning and academic success. Moreover, based on the proposition of Ramadhani et al., (2024) ,that students with strong motivation demonstrate increased perseverance and eagerness, resulting in active involvement in the learning process and, consequently, better academic performance.

Level of Teaching Styles

The results for the teaching styles are presented in table 3. The mean was ranging from 4.52 to 4.78 with an equivalent overall mean of 4.65 and a standard deviation of 0.39. This is quantitatively described as very high. Moreover, the data could be gleaned that teacher-students interaction is the indicator with the highest mean of 4.78 and described as very much observed, followed by teaching structuring with the mean of 4.52. The overall findings imply that effective teaching styles is very much observed in shaping students' study habits, engagement, and approach to learning challenges. Therefore, various teaching styles play a key role in engaging students and enhancing their learning experience. Though some approaches may need improvement, they contribute to both academic success and personal development.

Table 3
Level of teaching styles

Indicator	Mean	SD	Descriptive Level
Teacher -Students Interaction	4.78	0.34	Very High
Decision -Making Negotiation	4.64	0.39	Very High
Teaching Structuring	4.52	0.35	Very High
Behavioral Control	4.63	0.49	Very High
Overall	4.65	0.39	Very High

It conforms to the study of Larrea et al. (2024), stated that teachers use a variety of teaching styles, such as direct instruction and collaborative learning, could actually help to support student learning and succeed academically. In addition to that , according to Hu, (2024) that teaching styles that encourage participation, such as discussions and collaborative activities, foster a sense of belonging and autonomy among students, which could enhance their learning process.

Correlation Between Student Engagement and Students' Motivation

Showed in table 4.1 is the findings about the significance of the association between student engagement and students' motivation with an overall calculated r-value of 0.149** and a p-value of .005 , lower than the .05 which is the set level of significance of the study. Also, this shows that student engagement is strongly correlated with students' motivation. This implies that the association of the variables has a positive, very weak, and significant correlation. Therefore, students who are more engaged in learning tend to have higher motivation, leading to increased perseverance, better academic performance, and a more positive attitude toward learning.

Table 4.1
Significance on the Relationship between Student Engagement and Students' Motivation

Variables Correlated	r	p-value	Decision on H_o	Decision on Relationship
<i>Student Engagement and Students' Motivation</i>	0.149**	0.005	Rejected	Significant

It conforms to the statement of Suguis & Belleza, (2022), that student engagement is significantly influenced students' motivation, affirming the positive impact on students in their learning process. Moreover, according to Muhammad et al.,(2023) stated that a strong link between student engagement and motivation can lead to students to be more productive in their learning, showing that students who are more engaged tend to have higher motivation levels.

Correlation Between Student Engagement and Teaching Styles

Showed in table 4.2 is the findings about the significance of the association between student engagement and teaching styles with an overall calculated r-value of 0.156** and a p-value of 0.003, lower than the .05 which is the set level of significance of the study. Also, this shows that student engagement is strongly correlated with teaching styles. This implies that the association of the variables has a positive, very weak, and significant correlation. Therefore, effective teaching styles can effectively enhance student engagement, contributing to improved participation, better comprehension, and a more interactive learning environment.

Table 4.2
Significance on the Relationship between Student Engagement and Teaching Styles

Variables Correlated	r	p-value	Decision on H_o	Decision on Relationship
<i>Student Engagement and Teaching Styles</i>	0.156**	0.003	Rejected	Significant

It conforms the study of He, (2024), which indicates that teaching styles directly affect student engagement, which is a critical predictor of academic performance and in their learning. Additionally, based on the preposition of Zhang, (2024) that teaching styles that foster positive teacher-student relationships can enhance students' engagement, further promoting academic success. Correlation Between Teaching Styles and Students' Motivation Showed in table 4.3 is the findings about the significance of the association between teaching

styles and students' motivation with an overall calculated r-value of 0.153** and a p-value of 0.004, lower than the .05 which is the set level of significance of the study. Also, this shows that teaching styles are strongly correlated with students' motivation. This implies that the association of the variables has a positive, very weak, and significant correlation. Therefore, effective teaching styles can effectively enhance students' motivation, contributing to increased interest in learning, better academic performance, and a more positive attitude toward education.

Correlation Between Teaching Styles and Students' Motivation

Showed in table 4.3 is the findings about the significance of the association between teaching styles and students' motivation with an overall calculated r-value of 0.153** and a p-value of 0.004, lower than the .05 which is the set level of significance of the study. Also, this shows that teaching styles are strongly correlated with students' motivation. This implies that the association of the variables has a positive, very weak, and significant correlation. Therefore, effective teaching styles can effectively enhance students' motivation, contributing to increased interest in learning, better academic performance, and a more positive attitude toward education.

Table 4.3

Significance on the Relationship between Teaching Styles and Students' Motivation

Variables Correlated	r	p-value	Decision on H₀	Decision on Relationship
<i>Teaching Styles and Students' Motivation</i>	0.153**	0.004	Rejected	Significant

It conforms the study of Atma et al., (2021) ,that the relationship between teaching styles and students' motivation contributes to overall learning achievement of the students, such as student personality and learning preferences, teacher-student relationship, and students interest in their learning. Moreover, according to Hasnati, (2024) emphasized that interactive teaching styles significantly boost students' motivation that could help the student success academically.

Mediation Analysis of the Three Variables using Path Analysis

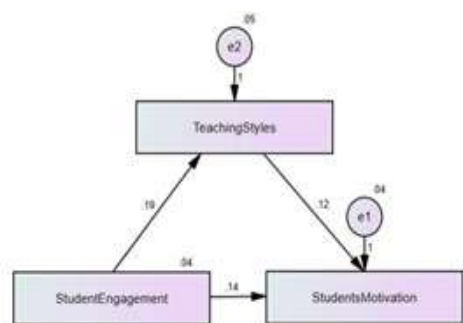
Displayed in Table 5 are the different steps taken in the path. The independent variable (IV) is Student Engagement, the dependent variable (DV) is Students' Motivation, and the mediating variable (MV) is Teaching Styles. Furthermore, the result of the computation of mediating effects is shown in Figure 3.

In Step 1, path C (IV and DV), it was revealed in the regression analysis between student engagement and students' motivation that there is a significant influence. Moreover, the result yielded an estimate of 0.167 and a standard error (SE) of 0.059 with a p<value of .005, which is lower than the 0.05 level. This means there is a significant influence between student engagement and students' motivation since the probability value is p<0.005. Thus, the null hypothesis of no significant relationship is therefore rejected.

Moreover in step 2, the path A (IV and MV), with the presence of mediating variable, revealed in the regression analysis between student engagement and teaching styles that there is a significant influence. Moreover, the result yielded an estimate of 0.195 and a standard error (SE) of 0.066 with a p<value of 0.003, which is lower than the 0.05 level of significance. This means a significant influence exists between student engagement and teaching styles since the probability value is p<0.003. Thus, the null hypothesis of no significant relationship is therefore rejected.

In Step 3, which is path B (MV and DV), with the presence of mediating variable, it was revealed in the regression analysis between teaching styles and students' motivation that there is a significant influence. Moreover, the result yielded an estimate of 0.119 and a standard error (SE) of 0.047 with a p<value of 0.012, which is lower than the 0.05 level. This means a significant influence exists between teaching styles and students' motivation since the probability value is p<0.012. Thus, the null hypothesis of no significant relationship is therefore rejected.

Additionally, the combined influence of IV and MV on DV. It was revealed that Students' Motivation (DV) regresses on Teaching Styles (MV) and Student Engagement (IV), which the result yielded an estimate of 0.144 and standard error (SE) of 0.059 with a p<value of 0.015, which is a lower than the 0.05 level of significance. This means a significant influence exists between the three variables since the probability value is p<0.015. Thus, the null hypothesis of no significant relationship is therefore rejected.

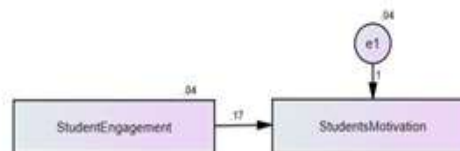


Path Diagram for the Regression Model

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P
TeachingStyles	<--- StudentEngagement	.195	.066	2.955	.003
Students'Motivation	<--- StudentEngagement	.144	.059	2.434	.015
Students'Motivation	<--- TeachingStyles	.119	.047	2.520	.012

Mediation Analysis of the Three Variables using Path Analysis



Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P
Students'Motivation	<--- StudentEngagement	.167	.059	2.836	.005

Partial Mediation

Since the three steps (paths A, B, and C) are all significant, mediation analysis through path analysis is warranted to assess the significance of the mediation effect. Furthermore, as stated in step 4, the effect of student engagement on students' motivation was even found to reduce after being mediated by teaching styles. With this, since the regression coefficient is substantially reduced at step 4 but remains significant, partial mediation occurred since the effect was found to be significant with a p<value of 0.000.

The findings of the effect size computation in the mediation test between the three variables are shown in figure 3. The effect size indicates how much of the indirect path's effect on students' motivation can be attributed to student engagement. The beta of student engagement towards students' motivation is 0.17, the total effect value. The beta of student engagement towards students' motivation with teaching styles included in the regression has a direct effect value of 0.14. The indirect effect value of 0.023 is the multiplied portion of the original correlation between student engagement to students' motivation, which is 0.19, and teaching styles to students' motivation, which is 0.12.

The ratio index is computed by dividing the indirect effect by the total effect; in this case, 0.023 by 0.167 equals 0.138. About 13.8 percent of the total effect of student engagement towards students' motivation goes through the teaching styles. About 86.2 percent of the total effect is either direct or mediated by other variables not included in the model.

The result of the mediation analysis of teaching styles on the relationship between student engagement and students' motivation, it conforms to the study of Deci and Ryan's Self-Determination Theory (1985) that

emphasizes that empowering students with control over their learning, teaching styles like student-centered approaches can ignite their motivation and foster active engagement in their learning, that leads them to deeper their learning and a lifelong passion for academic pursuits and success. Moreover, according to Farikah et al., (2023), a variety of teaching styles that foster autonomy, competence, and relatedness can enhance student motivation and engagement, cultivating a dynamic learning environment where students feel empowered and actively involved in their education.

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary Of Findings

The major findings of the stud were as follows:

1. The level of student engagement is quantitatively described as “very high” with an overall mean of 4.59 with a standard deviation of 0.31. The indicator that got the highest mean of 4.62 is "Affective Engagement”, followed by the lowest mean of 4.51, which is the “Cognitive Engagement”
2. The level of students' motivation is quantitatively described as " very high," with an overall mean of 4.64 with a standard deviation of 0.43. The indicator that got the highest mean of 4.74 is the "Achievement Goal," and the indicator that got the lowest mean of 4.53 is the "Performance Goal."
3. The level of teaching styles is quantitatively described as " very high," with an overall mean of 4.65 with a standard deviation of 0.39. The highest mean was, 4.78, observed for the "Teacher - students Interaction." In contrast, the lowest mean of 4.52 was recorded for the, "Teaching Structuring."
4. The relationship between student engagement and students' motivation proved to have a very weak positive correlation, with an r-value of 0.149** and a p-value of <0.005, which was lower than the significance level of 0.05. This result indicated that the null hypothesis was rejected, confirming a significant relationship between student engagement and students' motivation.
5. The relationship between student engagement and teaching styles showed a very weak positive correlation, with an r-value of 0.156** and a p-value of <0.003, which was lower than the significance level of 0.05. This result led to the rejection of the null hypothesis, confirming a significant relationship between student engagement and teaching styles.
6. The relationship between teaching styles and students' motivation exhibited a very very positive correlation, with an r-value of 0.153** and a p-value of <0.004, which was lower than the significance level of 0.05. This result indicated that the null hypothesis was rejected, confirming a significant relationship between teaching styles and students' motivation.
7. The mediation analysis confirmed that teaching styles partially mediated the relationship between student engagement and students' motivation. Path analysis revealed that 13.8% of the effect of student engagement on students' motivation was mediated by teaching styles, while the remaining 86.2% was either direct or influenced by other factors not included in the study.

CONCLUSIONS

Based on the findings of this study, the following statements were constructed:

1. The level of student engagement is revealed to be very high, indicating that it is very much observed. Therefore, students who actively participate in class discussions, collaborate with peers, and stay focused on learning tasks demonstrate their commitment to their education, which helps them succeed in school.
2. The level of effective teaching styles is very high, determined as very much observed. Therefore, educators employ diverse and engaging teaching methods, demonstrating adaptability, creativity, and student-centered approaches, which create a positive and dynamic learning atmosphere.

3. The level of students' motivation is very high, determined as very much observed. Therefore, students demonstrate strong motivation across various aspects of their learning, including setting academic goals, maintaining focus, actively participating in class, seeking challenges, and persevering through difficulties.
4. A very weak positive correlation exists between student engagement and students' motivation. Based on the findings, students who are highly engaged in learning tend to have increased motivation, leading to greater perseverance, improved academic performance, and a positive attitude toward education. In contrast, low engagement can result in decreased motivation, lack of interest in learning, and reduced academic achievement.
5. A very weak positive correlation exists between student engagement and teaching styles. The study's findings suggest that effective teaching styles foster higher student engagement by promoting interactive learning and active participation, while ineffective teaching methods can lead to disengagement, reduced interest, and hindered academic performance.
6. A very weak positive correlation exists between teaching styles and students' motivation. The study's findings suggest that effective teaching styles enhance students' motivation by creating engaging, supportive, and stimulating learning environments, while ineffective teaching styles can lead to decreased motivation, lack of interest, and lower academic performance.
7. The mediation analysis confirmed that teaching styles partially mediate the relationship between student engagement and students' motivation. The study's findings suggest that student engagement directly impacts motivation, and effective teaching styles further enhance this effect. However, because the influence of teaching styles is only partial, it's clear that other factors, such as learning strategies and classroom environment, are also important contributors to students' motivation.
8. Path analysis revealed that 13.8% of the effect of student engagement on students' motivation is mediated by teaching styles, while the remaining 86.2% was influenced by other factors not included in the study. The findings suggest that while student engagement contributes to motivation, its impact is enhanced when coupled with effective teaching styles. Therefore, educators should focus on fostering both student engagement and diverse teaching approaches to maximize students' motivation and learning outcomes.

RECOMMENDATIONS

Based on the findings, analysis, and conclusions drawn in this study, the following recommendations are outlined;

1. To enhance students' cognitive engagement, educators may integrate interactive learning techniques such as problem-based learning to stimulate critical thinking. Making lessons more applicable to real-world situations and offering students choices in their assignments can boost motivation and deepen their engagement in the learning process. Furthermore, incorporating inquiry-based learning and frequent formative assessments encourages active participation and continuous self-reflection. Establishing a supportive and inclusive classroom atmosphere where students feel confident expressing their thoughts and taking intellectual risks further strengthens their cognitive involvement.
2. When students show low performance goal motivation, teachers may emphasize developing a growth mindset and fostering intrinsic motivation. Encouraging mastery-oriented goals by focusing on effort, progress, and self-improvement—rather than competition or grades can help maintain students' motivation. Providing meaningful feedback that highlights strengths and areas for development, rather than just evaluating outcomes, reinforces a sense of accomplishment. Additionally, fostering a safe and supportive learning environment where students feel comfortable taking risks and learning from their mistakes can enhance their confidence and engagement.
3. To improve student learning in environments where teaching structuring is minimal, educators may provide clear instructions, well-organized lesson plans, and explicit learning objectives to establish a structured

approach. Breaking down complex concepts into smaller, manageable parts, using visual aids, and summarizing key points can enhance comprehension and retention. Conducting frequent formative assessments and offering structured guidance during individual or group activities ensures students remain focused and on track. Moreover, maintaining consistent classroom routines and clear expectations promotes stability, helping students feel more confident and engaged in their learning journey

4. Students can gain a deeper understanding of their learning preferences and adjust their study habits by recognizing the influence of teaching styles on their engagement and motivation. This involves acknowledging how structured instruction, interactive methods, and teacher feedback shape their academic experience. By becoming more aware of these factors, students can actively explore learning strategies that improve their participation and enthusiasm. Teachers should support this process by incorporating diverse instructional techniques and reflective activities to help students identify their most effective learning approaches. Encouraging students to engage with various teaching methods cultivates a more adaptive and motivated mindset, ultimately leading to higher academic achievement and engagement.

5. School administrators can implement policies and initiatives that promote effective teaching styles to enhance student engagement and motivation. Offering professional development workshops, peer mentoring for educators, and instructional resources can help teachers adopt diverse methodologies tailored to different learning needs. Administrators should also encourage faculty to incorporate structured teaching approaches, interactive learning strategies, and student-centered methods to optimize their instructional effectiveness. By embedding teaching style improvements into institutional policies and providing continuous teacher training, administrators can foster an environment that enhances student motivation, participation, and academic success

6. Future researchers may explore additional elements that influence the mediating role of teaching styles in the connection between student engagement and motivation. Expanding studies to include various educational settings and student demographics will offer a broader perspective on how different instructional methods affect learning experiences. Utilizing experimental or longitudinal research approaches can provide deeper insights into the long-term impact of teaching styles on student motivation and engagement. Additionally, investigating the integration of digital learning tools, personalized instructional strategies, and teacher-student interactions can further clarify how teaching styles contribute to student outcomes.

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