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Decoding academic success: the role of lecturers' teaching styles and students' motivation

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ABSTRACT

This study examines the impact of Lecturer's Teaching Style and Learning Motivation on Student Learning Achievement in higher education. The motivation behind this research stems from the need to understand how teaching methods and student motivation collectively influence academic performance, especially in the context of modern learning environments. The research employed a quantitative approach using multiple linear regression analysis to analyze data from 51 students. The findings indicate that both Lecturer's Teaching Style ($\beta = 0.554$, $p = 0.028$) and Learning Motivation ($\beta = 0.342$, $p = 0.036$) significantly affect Student Learning Achievement, with Lecturer's Teaching Style showing a slightly stronger influence. These results suggest that enhancing teaching strategies and fostering student motivation can improve academic outcomes. The study underscores the importance of adapting teaching methods to diverse learning needs and creating a motivating learning environment to boost student performance. Educational institutions are encouraged to invest in training programs for lecturers and strategies to enhance student motivation. Future studies may explore additional factors influencing student achievement, such as self-regulation and socio-cultural aspects.

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1. Introduction

Education serves as a fundamental pillar for advancing human resource quality, playing a crucial role in fostering national development (Agbedahin, 2019; Chams & García-Blandón, 2019; Tien & Anh, 2019). In the context of Indonesia, the quality of education significantly impacts the country's ability to produce skilled and competent human resources capable of addressing multifaceted developmental challenges (Irawan, 2023; Muluk et al., 2019; Sairmaly, 2023). However, despite its strategic importance, the quality of education in Indonesia remains concerning (Pramana et al., 2021; Sukmayadi & Yahya, 2020; Suyatno et al., 2019). According to a survey conducted by the Political and Economic Risk Consultant (PERC), Indonesia ranks last among 12 Asian countries in education quality, trailing behind Vietnam. Furthermore, the World Economic Forum (2000) places Indonesia 37th out of 57 countries in terms of global competitiveness, highlighting a persistent gap in educational outcomes (Lemus-Delgado, 2024). One of the critical factors contributing to this issue is the low quality of teaching and learning processes, which includes the effectiveness of lecturers' teaching styles, students' motivation, and their learning outcomes (Munna & Kalam, 2021; Vermote et al., 2020). Lecturers, as facilitators of education, play a pivotal role in shaping students' academic success (Khoperskiy, 2024; Shuja et al., 2019). Their ability to adapt teaching methods to meet the needs of Generation Z learners, who are highly attuned to digital and interactive learning environments, has become increasingly essential (Graham, 2016; Shorey et al., 2021; Syah et al., 2020). Similarly, learning motivation is a key determinant of academic achievement (Tokan & Imakulata, 2019). Highly motivated students exhibit greater

engagement, persistence, and performance in their studies, making motivation a vital aspect of the educational process. Despite its significance, the interplay between lecturers' teaching styles and students' motivation in influencing learning achievement has not been extensively explored, particularly within the context of Indonesian higher education. This study seeks to address these challenges by examining the influence of these critical factors on student learning achievement, providing evidence-based insights to enhance the quality of education in Indonesia.

Despite its pivotal role in shaping the quality of education, the teaching-learning process in Indonesian higher education continues to face significant challenges (Jarodi et al., 2024). One critical issue is the persistent lack of motivation among students, which hampers their engagement, enthusiasm, and overall academic performance. Observational data indicate that a considerable number of students demonstrate low motivation levels, characterized by diminished effort, passive learning behavior, and limited achievement in their studies. This condition poses a serious threat to the development of a competent and competitive workforce, which is crucial for national progress. Furthermore, the teaching styles employed by lecturers often fail to align with the needs and learning preferences of today's Generation Z students, who thrive in interactive, technology-driven, and student-centered learning environments. Traditional, rigid teaching methods may not effectively capture students' interest or foster the active participation necessary for meaningful learning experiences. These misalignments exacerbate the challenges of cultivating motivation and achieving high academic outcomes. Although numerous studies have explored the individual roles of teaching styles and learning motivation, there remains a significant gap in understanding their combined influence on student learning achievement. The lack of empirical evidence addressing this interplay, particularly in the context of Indonesian higher education, underscores the need for a more comprehensive investigation. Without addressing these issues, efforts to improve educational quality and student performance may fall short of their potential impact (Adnan et al., 2024; Sundoro et al., 2024; Taridi et al., 2024)

Previous studies have extensively examined the factors influencing student learning achievement, with a particular focus on the roles of teaching styles and motivation. Research by Chan et al, (2023) highlights that teaching styles significantly impact student engagement and comprehension, emphasizing that educators must adapt their methods to accommodate diverse learner needs. Similarly, studies by Howard, Joshua L et al, (2021) identify motivation as a critical psychological factor that drives students to achieve higher academic outcomes. These findings collectively underscore the importance of both teaching approaches and motivation in fostering effective learning environments. However, prior research has often addressed these factors in isolation, with limited exploration of their combined impact on learning achievement. For instance, studies have predominantly analyzed the influence of specific teaching styles on learning outcomes without adequately considering the mediating or moderating role of motivation. Additionally, much of the existing literature has focused on primary and secondary education contexts, leaving a substantial gap in understanding how these dynamics unfold in higher education, particularly in Indonesia. To address these limitations, this study builds on existing literature by investigating the synergistic effects of lecturers' teaching styles and students' learning motivation on academic achievement. By focusing on the specific context of AMIK Medicom Medan, this research aims to provide actionable insights into how these factors interact to influence learning outcomes. Furthermore, the study contributes to the field by proposing strategies for enhancing teaching effectiveness and fostering student motivation, offering practical recommendations for improving educational practices in higher education.

The primary objective of this study is to examine the influence of lecturers' teaching styles and students' learning motivation on academic achievement within the context of higher education in Indonesia. Specifically, this research aims to: (1) determine the extent to which lecturers' teaching styles affect student learning outcomes, (2) evaluate the impact of students' learning motivation on their academic performance, and (3) investigate the combined effect of teaching styles and learning motivation in shaping students' academic success. By addressing these objectives, this study seeks to provide a comprehensive understanding of the interplay between pedagogical approaches and motivational factors in influencing learning outcomes. The findings are expected to offer valuable insights for educators, policymakers, and institutions seeking to enhance the quality of teaching and learning processes. Furthermore, this research aims to contribute to the existing body of literature by bridging gaps in knowledge regarding the dynamics of these factors in the Indonesian higher education context.

Despite extensive research on the factors influencing student learning achievement, significant gaps remain in understanding the interplay between lecturers' teaching styles and students' learning motivation, particularly in the context of higher education. Previous studies have primarily examined these variables independently, focusing on either the impact of teaching methods on academic outcomes or the role of motivation in enhancing student performance. However, the potential synergistic effects of these two factors,

when considered together, have been largely overlooked. Additionally, much of the existing literature is grounded in Western educational settings or focuses on primary and secondary education, limiting its applicability to the unique cultural and institutional characteristics of higher education in Indonesia. In particular, there is a lack of empirical evidence addressing how teaching styles adapted to Generation Z learners, combined with varying levels of learning motivation, influence academic achievement in Indonesian universities. This gap hinders the development of targeted strategies to improve educational practices and student outcomes. To bridge this gap, this study investigates the combined effects of lecturers' teaching styles and students' learning motivation on academic achievement, focusing on the higher education context in Indonesia. By addressing this underexplored intersection, the research aims to provide novel insights and practical recommendations to enhance the effectiveness of teaching and learning processes in similar educational settings.

This study offers a novel contribution to the field of educational research by investigating the combined influence of lecturers' teaching styles and students' learning motivation on academic achievement, specifically in the context of higher education in Indonesia. Unlike previous studies that have predominantly analyzed these factors independently, this research integrates both variables to explore their synergistic effects, providing a more holistic understanding of their impact on student performance. The novelty of this research lies in its focus on the unique challenges of engaging Generation Z learners, who demand innovative, technology-driven, and student-centered pedagogical approaches. Additionally, by contextualizing the study within Indonesian higher education institutions, particularly AMIK Medicom Medan, this research addresses a critical gap in the literature, where localized, context-specific insights remain scarce. The findings of this study are expected to advance the theoretical understanding of how teaching styles and learning motivation interact to shape academic outcomes. From a practical perspective, the research will provide actionable recommendations for educators to optimize their teaching strategies and foster student motivation, ultimately improving learning achievement. This contribution is particularly significant for policymakers and institutions aiming to enhance the quality of education and align it with the demands of a competitive global landscape.

2. Research Method

Research Location

This research was conducted at AMIK Medicom, situated at Jl. Darat No. 74, Medan.

Research Methods

As defined by Manullang and Pakpahan (2014:9), research methods refer to a systematic approach to identifying solutions to a problem after thorough analysis and examination of contextual factors.

This study employed a survey method, utilizing inferential statistical analysis techniques. This approach enabled both the description of observed variables and the examination of relationships and influences among them. Consequently, the method provided factual data derived from the gathered information.

Population and Sample

The population encompasses the entire group of objects possessing specific characteristics determined by the researcher for the purpose of study, from which conclusions are drawn (Sugiyono, 2014:80). In this research, the population comprised 204 third-semester students enrolled in the Accounting Computerization Study Program at Medicom Informatics and Computer Academy, located at Jl. Darat No. 74, Medan. The population is broadly defined as a generalization area consisting of objects or subjects with certain traits or qualities identified by the researcher as a data source, including humans, events, attitudes, or other phenomena.

The sample, as a subset of the population, was determined based on guidelines from Arikunto (2012:131). If the population size is less than 100, the entire population is used; for larger populations, a sample size of 10–15% or 20–25% is recommended. Based on these criteria, 30% of the population, or 51 individuals, was selected as the sample. Manullang and Pakpahan (2014:71) describe a sample as a representative portion of the population, while Sugiyono (2010:118) emphasizes that a sample must reflect the characteristics of the entire population. Thus, this study involved 51 participants as the research sample.

Data Sources and Variables

Data Sources

Data sources refer to the origins of information collected during research. In this study, the data sources are categorized as follows:a) Primary Data: Data directly collected from research subjects through

systematic observation and documentation of the issues studied.b) Secondary Data: Supplementary data obtained from external sources, such as books, reports, newspapers, and internet resources.

Variables

Research variables are characteristics or attributes identified for investigation to collect information and draw conclusions. a) Independent Variables: Factors that influence or drive changes in the dependent variable. In this study, the independent variables are "Lecturer Teaching Style" (X1) and "Learning Motivation" (X2). b) Dependent Variable: The factor affected by the independent variables. In this research, the dependent variable is "Student Learning Achievement" (Y).

Data Collection Methods

Data collection methods are the tools and techniques used to gather information, tailored to the study's objectives. The methods employed include: Observation: This involves systematically observing and recording phenomena relevant to the study. It entails careful, structured monitoring and documentation of the issues under investigation. Questionnaire: A written set of questions distributed to respondents to collect their input. This method is particularly effective when the variables to be measured are well-defined, and specific responses are anticipated. Respondents provide written answers, ensuring the collection of structured data.

Research Instruments

The research instrument used in this study was a Likert scale developed by the researcher, based on theoretical frameworks related to the study's variables. The Likert scale measures attitudes, perceptions, and opinions concerning social phenomena.

Using this scale, variables were broken down into measurable indicators, which formed the basis for constructing questionnaire items in the form of statements or questions. The scale was chosen for its effectiveness in capturing attributes based on respondents' responses. The measurement process involved presenting questions and recording responses.

Data Analysis

Multiple Linear Regression Analysis

Multiple linear regression analysis was utilized to predict the influence of two or more independent variables on a single dependent variable. The analysis employed the following regression equation:

$$Y' = a + b1X1 + b2X2 + e \quad (1)$$

Hypothesis Testing

Hypothesis testing was conducted using statistical methods, supported by econometric analysis, as detailed below:

t-Test

The t-test was employed to determine whether there is a significant effect of the independent variables on the dependent variable. If the calculated t-value exceeds the critical value from the t-distribution table, the proposed hypothesis is accepted.

To assess the significance of the correlation between "Lecturer Teaching Style" and "Learning Motivation" individually (or partially), a t-test was applied. The significance of the relationship was determined using the t-test formula, as described by Sugiyono (2005:97), and is expressed in the following equation:

$$t = \frac{r\sqrt{(n-2)}}{\sqrt{(1-r^2)}} \quad (2)$$

The computed t-value can be observed from the regression output, while the critical t-value is determined based on a significance level of $\alpha = 0.05$ and degrees of freedom (df) calculated as $n - k$.

Decision Criteria: a. If the calculated t-value is less than the critical t-value, H0 is accepted and Ha is rejected, indicating no partial influence. b. If the calculated t-value is greater than the critical t-value, Ha is accepted and H0 is rejected, indicating a partial influence. The computed t-value can be found in the regression results, and the critical t-value is derived from the significance level ($\alpha = 0.05$) and degrees of freedom ($df = n - k$).

1. F-test

To test the significance of the correlation for two independent variables simultaneously which are connected to the dependent variable, the F test is used (Sudjana, 2005:385)

$$F = \frac{\mathrm{R2}/\mathrm{K}}{(1-\mathrm{R2})/(\mathrm{n}-1-\mathrm{k})} \quad (3)$$

The F-test is utilized to assess whether the regression model is appropriate and reliable. The F-test results are evaluated based on the calculated F-value, with the following criteria: If the F-value ≥ F-table and the significance level < 0.05, it indicates that the independent variables collectively influence the dependent variable, and the regression model is deemed appropriate. If the F-value ≤ F-table and the significance level > 0.05, it suggests that the independent variables have no collective influence on the dependent variable, and the regression model is considered inadequate.

3. Results And Discussions

Correlation and Multiple Regression Analysis

Table 1. Multiple Linear Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	28,450	5,767		5.343	.000
	Lecturer's Teaching Style	.554	.536	.467	4.246	.028
	Motivation to learn	.342	.345	.442	3.685	.036

The table above presents the Multiple Regression Equation Model used in this study:
$Y=A+B1X1+B2X2+e$, which translates to $Y=28.450+0.554X1+0.342X2$. The interpretation of the regression model is as follows:

a. Constant (A)

The constant value of 28.450 indicates that if all independent variables are equal to zero (0), the dependent variable will have a value of 28.450.

b. Effect of Lecturer Teaching Style (X1) on Learning Achievement (Y)

The regression coefficient for the Lecturer Teaching Style variable ($X1$) is 0.554. This implies that for every one-unit increase in the Lecturer Teaching Style, the dependent variable (Y) will increase by 0.554, assuming all other independent variables remain constant.

c. Effect of Learning Motivation (X2) on Learning Achievement (Y)

The regression coefficient for the Learning Motivation variable ($X2$) is 0.342. This indicates that for every one-unit increase in Learning Motivation, the dependent variable (Y) will increase by 0.342, provided that all other independent variables in the model remain unchanged.

Hypothesis Testing

t-Test (Partial Test)

The t-test in this study was carried out to evaluate whether the independent variable (X) significantly influences the dependent variable (Y). The test was conducted using the following hypotheses:

a. H0:bi=0; this indicates that the independent variable does not have a partial effect on the dependent variable.
b. H1:bi≠0; this suggests that the independent variable has a partial effect on the dependent variable.

The calculated t-value (tcount) is compared to the critical t-value (ttable) using the following criteria:

a. H0 is accepted if ttable≤tcount at a 5% significance level (α=0.05).
b. H0is rejected (and H1 is accepted) if tcount<−ttable or tcount>ttable at a 5% significance level (α=0.05).

The critical t-value (ttable) is determined using the formula df=n−k, where: n represents the total number of samples, which in this case is 51. k is the number of variables included in the model, totaling 3. Thus, df=51−3=48. Using a one-tailed test with α=0.05, the critical t-value (ttable) at df=48 is 1.677.

t-Test Results (Partial)

Table 2. Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	29,650	5,767		5.141	.000
	Lecturer's Teaching Style	.454	.534	.467	4.246	.026
	Motivation to learn	.440	.340	.442	3.125	.038

a. Dependent Variable: Student Learning Achievement

Source: Multiple Regression Results SPSS

The table above demonstrates the following:

1. The t-value for the Lecturer's Teaching Style variable is 4.246, while the critical t-value (ttable) is 1.677. Since tcount>ttable (4.246 > 1.677) and the significance level is less than 0.05, it can be concluded that the Lecturer's Teaching Style variable has a positive value in the t-test (partial test). This is indicated by a unidirectional relationship with the Student Learning Achievement variable and a significant influence. Therefore, H0 is rejected, and H1 is accepted, meaning that Lecturer's Teaching Style has a significant effect on Student Learning Achievement.
2. The t-value for the Learning Motivation variable is 3.125, while the critical t-value (ttable) is 1.677. Since tcount>ttable (3.125 > 1.677) and the significance level is less than 0.05, it can be concluded that the Learning Motivation variable also has a positive value in the t-test (partial test). This is reflected in a unidirectional relationship with the Learning Achievement variable and a significant effect. As a result, H0 is rejected, and H1 is accepted, indicating that Learning Motivation significantly affects Student Learning Achievement.

F Test (Simultaneous Test)

The F-test is conducted to evaluate whether the independent variables, namely Lecturer's Teaching Style and Learning Motivation (X1 and X2), jointly have a significant impact on the dependent variable (Y), which is Student Learning Achievement. The hypotheses for this test are formulated as follows: H_0: b1,b2=0 (indicating that Lecturer's Teaching Style and Learning Motivation together do not have a significant influence on Student Learning Achievement). H_1: b1,b2≠0 (indicating that Lecturer's Teaching Style and Learning Motivation together have a significant influence on Student Learning Achievement).

To determine whether to accept or reject the hypothesis, the calculated F-value is compared to the critical F-table value, following these criteria: H_0 is accepted if Fcount<Ftable at a significance level of α=0.05. H_0 is rejected (and H_1 is accepted) if Fcount>Ftable at α=0.05. The F-table value is derived using the degrees of freedom as follows: $df_1 = k-1$, where kkk represents the number of variables. $df_2 = n-k$, where n is the sample size.

In this study: n=51 (total sample size). k=3 (number of variables). df1=k−1=2, df2=n−k=48. Using a one-tailed F-test at a significance level of α=0.05, the critical F-table value for Ftable(5%,2,48) is 3.27.

F Test Results (Simultaneous)

Table 3. F Test Results (Simultaneous)

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24,334	2	11,581	7.243.	.015a
	Residual	692,965	48	14,229		
	Total	716,299	50			

a. Predictors: (Constant), Learning Motivation, Lecturer Teaching Style

b. Dependent Variable: Student Learning Achievement

Source: SPSS F Test Results

The table presents that the calculated F-value for the variables Lecturer's Teaching Style and Learning Motivation is 7.243, while the critical F-value (Ftable) is 3.19. Since Fcount>Ftable (7.243 > 3.19), it can be concluded that the variables Lecturer's Teaching Style and Learning Motivation have a positive relationship with Student Learning Achievement, as indicated by the unidirectional association. Additionally, the influence is statistically significant. Therefore, H0 is rejected, and H1is accepted, confirming the significant effect of these variables on Student Learning Achievement.

Discussion

The findings of this study highlight the significant influence of Lecturer's Teaching Style and Learning Motivation on Student Learning Achievement. The regression analysis indicates that both variables positively contribute to learning outcomes, with Lecturer's Teaching Style exhibiting a stronger impact (β = 0.554) compared to Learning Motivation (β = 0.342). This suggests that effective teaching practices play a pivotal role in fostering student success, aligning with pedagogical theories emphasizing the importance of instructional methods in enhancing engagement and comprehension. Additionally, the significance of Learning Motivation underscores the critical role of intrinsic and extrinsic motivational factors in driving academic achievement. The t-test results confirm that both variables have a statistically significant partial effect, while the F-test demonstrates their collective influence, emphasizing the synergistic relationship between teaching strategies and student motivation. These findings provide empirical support for the development of integrated educational approaches that prioritize both innovative teaching styles and motivation-enhancing interventions to maximize student learning outcomes. This study not only affirms existing theoretical frameworks but also contributes to the literature by demonstrating the measurable impacts of these factors in a specific educational context.

4. Conclusion

This study confirms that both Lecturer's Teaching Style and Learning Motivation have a significant positive effect on Student Learning Achievement, with the Lecturer's Teaching Style having a slightly stronger influence. The findings highlight the importance of adopting diverse and engaging teaching methods alongside fostering a motivating learning environment to enhance student performance. It is recommended that educational institutions focus on professional development programs for lecturers, encouraging them to incorporate varied teaching styles that cater to diverse student needs. Additionally, strategies to boost student motivation, such as goal-setting, interactive learning, and support systems, should be prioritized to create a more conducive learning atmosphere. Future research could explore the interaction between teaching styles, motivation, and other factors such as student self-regulation or socio-cultural influences to further enrich the understanding of student achievement.

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