

## **The Effect of Student Satisfaction and Learning Environment on The Academic Achievement of Students of Perdana Vocational High School 1 Surabaya**

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### **Abstract**

This study analyzes the influence of learning satisfaction and learning environment on the academic achievement of students at Perdana 1 Vocational High School Surabaya. The background of this study is the growing importance of non-cognitive factors in shaping student performance. A quantitative survey was conducted with 90 participants, and the data were examined using validity and reliability assessments, classical assumption tests, multiple linear regression, t-tests, F-tests, and the coefficient of determination. All instruments were found to be valid and reliable, with Cronbach's Alpha values exceeding 0.70. The classical assumption tests indicated that the data were normally distributed, free from multicollinearity, and did not exhibit heteroscedasticity. Regression analysis revealed that both independent variables have a positive significant effect on academic achievement, with the learning environment identified as the most dominant influencing factor. The simultaneous test confirmed a significant combined effect of both variables on academic achievement with a significance value of  $0.000 < 0.05$ . Furthermore, the coefficient of determination ( $R^2 = 0.668$ ) indicates that 66.8% of the variation in academic achievement can be explained by learning satisfaction and learning environment. These findings suggest that improving learning satisfaction and creating a conducive learning environment are key strategies to enhance student academic achievement.

**Keywords :** *learning satisfaction; learning environment; academic achievement*

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### **INTRODUCTION**

Education serves as the primary tool for developing high-quality and competitive human resources. In today's era of globalization and rapid technological advancement, educational institutions are expected to produce graduates who possess not only knowledge but also exceptional skills and positive attitudes. The effectiveness of the educational process is reflected in students' academic achievements, which indicate the extent to which learning outcomes align with the established learning objectives.

Education is the main means of forming quality and competitive human resources, because through a systematic learning process, individuals can be developed into valuable assets for society and the nation. In the era of globalization and increasingly rapid technological development, the education is required to be able to produce graduates who not only have in-depth theoretical knowledge, but also practical skills such as critical of thinking skills, team collaboration, adaptation to change and mastery of digital technology (Dangi et

al., 2022). In addition, superior attitudes such as integrity, creativity, and social responsibility must also be instilled so that graduates can contribute positively in a competitive and dynamic work environment. The educational process can be seen from the academic achievement of students, which reflects the level of achievement of learning outcomes in accordance with the learning objectives that have been set, such as test scores, innovative projects, or participation in extracurricular activities that demonstrate the application of knowledge in a real context (Javaheery & Bavandi, 2025). Thus, effective education not only increases individual productivity, but also promotes overall economic and social progress. The internal factors that play an important role in improving academic achievement is learning satisfaction. Learning satisfaction is a subjective assessment of students of the learning experience they feel. Learning satisfaction is a subjective assessment of learners of their perceived learning experiences, which involves emotional, cognitive, and social aspects during the learning process (Olanloye et al., 2025). When students are satisfied with the teaching methods, relevant materials, and support from teachers and classmates, this can increase their intrinsic motivation to study harder, thus having a positive effect on academic outcomes such as test scores or active participation in class. Conversely, low learning satisfaction, for example due to a lack of engagement or frustration with challenges that are too difficult, can lower morale and productivity, ultimately hindering achievement. Therefore, creating a fun and supportive learning environment, such as through a project-based learning approach or positive interactions, is key to building high and sustainable learning satisfaction. Thus, these factors not only affect individuals, but also contribute to the success of the education system as a whole. Learning satisfaction is a student's evaluative response to the learning experience they feel during the educational process.

(Laka, n.d.) explained that learning satisfaction is related to teacher empathy, responsiveness, and quality of material delivery. In addition, Robbiatul et al. (2024) stated that learning satisfaction reflects students' academic involvement and positive emotional states in learning. Another perspective sees learning satisfaction as part of the quality of educational services influenced by learning methods and institutional support (Adelia et al., 2024). Thus, learning satisfaction can be understood as the level of student acceptance of the learning process that has an impact on motivation and learning outcomes. Lee (2020) stated that learning satisfaction has a positive relationship with academic achievement, because students who feel satisfied will be more focused, active, and strive to achieve optimal learning outcomes. On the other hand, low learning satisfaction can cause boredom, decreased interest in learning, and have an impact on low academic achievement. Therefore, learning satisfaction is a very important aspect, needs to be considered in effort to improve the quality of student learning outcomes.

In addition to internal factors, the learning environment is an external factor that also has a great influence on academic achievement. The learning environment includes the physical, social, specially for psychological conditions that surround students during the learning process. The learning environment is an external factor that also has a great influence on academic achievement, as it creates a context in which the learning process occurs and can support or hinder the ability of students to achieve optimal results. The learning environment includes physical conditions, such as the availability of adequate facilities such as comfortable classrooms, technological equipment, libraries, and the cleanliness of the school environment, which can facilitate focus and comfort during learning. In addition, the social aspect involves interaction with teachers, classmates, and school staff, including a culture of collaboration, peer support, and the values applied in the school, which helps build a sense of togetherness and motivation. The psychological condition includes emotional support, such as a sense of security from bullying or stress, as well as external motivation from family or society, which can increase students' confidence and mental resilience. When this learning environment is positive and supportive, such as in schools with an inclusive atmosphere and sufficient

resources, academic achievement tends to improve through increased participation, information retention, and adaptability. Conversely, a poor environment, such as a crowded classroom or lack of social support, can lead to distraction, frustration, and decreased motivation, leading to low learning outcomes. Therefore, investing in improving the learning environment, such as through education policies that prioritize infrastructure and student well-being, is essential to ensure that these external factors contribute maximally to overall academic success. According to Putri and Wahyudi (2022), a conducive learning environment can create a comfortable and safe for the learning environment so that it can be increase students' concentration and learning effectiveness. Physical environments such as classrooms, learning facilities, and cleanliness, as well as social environments such as the relationship between teachers and students, an important role for supporting in learning process. Research by (Zahroh & Na'imah, 2020) shows that a good learning environment has a significant influence on students' academic achievement. An unconducive learning environment, such as inadequate facilities, noisy classroom atmosphere, and less harmonious social interactions, can hinder the learning process and reduce students' academic achievement. Thus, the learning environment needs to be managed optimally in order to be able to support the learning success of students. Learning satisfaction and the learning environment are closely related in influencing academic achievement. A conducive learning environment can increase student learning satisfaction, while high learning satisfaction will encourage students to be more active in utilizing the available learning environment. The combination of learning satisfaction and a good learning environment is expected to be able to create an effective learning process and produce optimal academic achievement.

Academic achievement is the result of the learning process which is influenced by various factors, both of the internal and external factors. According to (Dangi et al., 2022), academic achievement is the learning achievement of students obtained through the learning process and is influenced by psychological conditions, motivation, and the environment where they learn. Thus, academic achievement is not only determined by intellectual ability alone, but also by the learning experience felt by students during the learning process. In practice, improving academic achievement is still a challenge for educational institutions. Various problems such as low motivation to learn, lack of student involvement in learning, and academic results that are not optimal are still often found. This condition shows that there are factors that support learning that have not functioned optimally, one of which is related to learning satisfaction and the learning environment of students.

Based on initial observations is still students who feel dissatisfied with the learning process, such as teaching methods that are less varied, the use of learning media that is not optimal, and academic services that do not fully meet student expectations. In addition, the condition of the learning environment that is not conducive, such as limited learning facilities, uncomfortable classroom atmosphere, and lack of active interaction between teachers and students, are also problems that are often encountered. This phenomenon has an impact on the academic achievement of students who have not achieved optimal results. Some students show decreased learning motivation, lack of participation in learning activities, and academic results that tend to be stagnant. This condition indicates a gap between students' expectations of the learning process and the reality they experience in the learning environment.

From this explanation, it can be inferred that learning satisfaction and the learning environment are key factors that may influence students' academic performance. Consequently, it is important to conduct research on the influence of learning satisfaction and the learning environment on academic achievement to determine how much these variables contribute to enhancing learning outcomes. The findings of this study are expected to provide theoretical insights for educational development and serve as practical guidance for institutions to improve learning quality and foster a supportive learning environment

## LITERATURE REVIEW

### Learning Satisfaction

Learning satisfaction is defined as the level of students' feelings of pleasure or displeasure with the implementation of learning that affects learning effectiveness and academic performance. Suryani & Sugianingrat (2021) Learning satisfaction is an evaluative response of students to the quality of the learning experience they feel, especially related to the learning system, flexibility, and quality of educational services provided during the learning process. Liu, Yanbin, & Guobao (2023) Learning satisfaction is students' perception of the quality of learning influenced by material content, learning interactions, learning resources, and the design of learning platforms or environments.

### Learning Environment

Schools and educators need to continuously improve and optimize the learning environment to ensure students reach their maximum potential. According to Latief (2023), the learning environment is a whole condition that affects the behavior of students and teachers in the learning process, which includes physical, social, and psychological aspects. This definition emphasizes that of the learning environment is not only related for physical space, but is also for social interactions and psychological atmospheres that can affect student motivation, engagement, and learning outcomes. Mutiara Khairullisa, Maulida Safitri, and Marmoah (2025) stated that the learning environment includes all conditions in schools, both inside and outside the classroom, including social interactions between teachers, students, and parents, which together create a conducive and fun learning atmosphere. In addition, contemporary studies show that the learning environment consists of three main dimensions, namely physical aspects (facilities, space layout, lighting), social aspects (relationships between students and teachers, peer support), and psychological aspects (safe, comfortable atmosphere, and supporting active student involvement).

### Academic Achievement

Academic achievement is one of the indicators of student success in achieving learning goals at school, including Vocational High School (SMK). Academic achievement not only reflects cognitive abilities, but also practical skills that match the expertise competencies of each field of study. According to Sari and Setiawan (2020), academic achievement is the learning outcomes of students obtained after participating in the learning process and expressed through academic evaluation scores or scores. In the context of vocational schools, academic achievement includes theoretical subjects and vocational practice, so the measurement of success must include both aspects. Prasetyo (2021) emphasized that academic achievement is the level of success of students in mastering the set learning competencies, which is measured through the evaluation of learning outcomes in the form of theoretical exams, assignments, and vocational practices. This emphasizes that the academic achievements of vocational schools are comprehensive, including mastery of concepts and application skills.

## METODOLOGI

This study employs a quantitative research method, which focuses on analyzing numerical data using statistical techniques (Abdullah et al., 2021). A research method provides a systematic framework that is most effective for achieving research objectives and producing accurate, reliable results. It serves as a guideline to ensure that each stage of the research, from problem formulation to data interpretation, is conducted in an organized manner. To produce high-quality findings, several critical steps must be followed, including identifying research

variables, collecting data with valid instruments, and performing thorough data analysis. In this study, data analysis is facilitated using SPSS version 27, a widely used statistical software for efficient processing of numerical data. The study utilizes primary data collected directly from respondents through questionnaires. These questionnaires are designed based on the indicators of each research variable and measured using specific scales to enable quantitative processing (Sugiyono, 2010). The collected data are then analyzed statistically using SPSS to test the formulated hypotheses and assess the extent to which each independent variable influences the dependent variable (Sugiyono, 2010). Furthermore, the collected data will be analyzed using statistical methods with the help of data processing software Statistical Program for Social Science (SPSS), to test the hypothesis that has been formulated and to determine the magnitude of the influence of each independent variable on the dependent variable.

## RESULT AND DISCUSSION

### Statistic Descriptive

Based on the data collected, there were 41 male respondents and 49 female respondents so that based on the percentage value obtained 45.6% of them were men, and the remaining 54.4% were women. Thus, the majority of respondents in this study were women. Data based on the level of education of the respondents is seen from the class which shows a fairly diverse distribution. Some of the respondents (50%) were grade 12 students of the Perdana 1 Surabaya Vocational High School as many as 45 respondents while 24 respondents (26.7%) came from grade 11 students of the 11th grade of the Perdana 1 Surabaya Vocational High School and the remaining 21 respondents (23.3%) came from grade 10 students.

### Validity Test

The validity test results on all statement items of Learning Satisfaction (X1), Learning Environment (X2) and Academic Achievement (Y) variables showed that all Pearson Correlation values exceeded the r-table value with a significance value of  $0.000 < 0.05$ , thus all items are declared valid. In the Learning Satisfaction variable (X1), Pearson Correlation values ranged from 0.407 to 0.824. In the Learning Environment variable (X2), values ranged from 0.524 to 0.779. Meanwhile, in the Academic Achievement variable (Y), values ranged from 0.564 to 0.865. An indicator is considered valid if the Pearson Correlation value ( $r$ ) exceeds 0.3 and the significance probability is less than 0.01 ( $\alpha < 0.01$ ). Overall, all research instruments meet the validity requirements and are suitable for use in data collection. The following shows in detail the validity test results for each indicator in this study.

Tabel 1. Result of Validity Test

Variable	Item Indicator	Pearson Correlation Values	Sig.	Remarks
Learning Satisfaction (x1)	X1.1	0.416	0.000	Valid
	X1.2	0.530	0.000	Valid
	X1.3	0.407	0.000	Valid
	X1.4	0.712	0.000	Valid
	X1.5	0.540	0.000	Valid
	X1.6	0.711	0.000	Valid
	X1.7	0.690	0.000	Valid
	X1.8	0.619	0.000	Valid
	X1.9	0.824	0.000	Valid
	X1.10	0.762	0.000	Valid
Learning Environment (X2)	X2.1	0.578	0.000	Valid
	X2.2	0.664	0.000	Valid
	X2.3	0.631	0.000	Valid
	X2.4	0.524	0.000	Valid
	X2.5	0.675	0.000	Valid
	X2.6	0.713	0.000	Valid
	X2.7	0.748	0.000	Valid
	X2.8	0.662	0.000	Valid
	X2.9	0.779	0.000	Valid
	X2.10	0.715	0.000	Valid
Academic Achievement (Y)	Y1	0.668	0.000	Valid
	Y2	0.633	0.000	Valid
	Y3	0.729	0.000	Valid
	Y4	0.674	0.000	Valid
	Y5	0.764	0.000	Valid
	Y6	0.564	0.000	Valid
	Y7	0.865	0.000	Valid
	Y8	0.652	0.000	Valid
	Y9	0.709	0.000	Valid
	Y10	0.735	0.000	Valid
	Y11	0.811	0.000	Valid
	Y12	0.671	0.000	Valid

Source: Processed Data SPSS Version 27

### Reliability Test

Reliability analysis was conducted by examining whether Cronbach's Alpha coefficient exceeded 0.60. All tests were performed on 90 respondents with 100% valid data. Based on the analysis results, all variables – including the independent variables (learning satisfaction and learning environment) and the dependent variable (academic achievement) – obtained Cronbach's Alpha values above 0.70, this value indicating is high. This means all items within each variable are consistent in measuring the same construct. The following shows in detail the reliability test results for each indicator in this study.

Tabel 2. Result of Reliability Test

Variable	Cronbach Alpha Values
Learning Satisfaction (x1)	<b>0,827</b>
Learning Environment (X2)	<b>0,862</b>
Academic Achievement (Y)	<b>0,906</b>

Source: Processed Data SPSS Version 27

### Normality Test

The normality test is a statistical procedure used to determine whether the data follow a normal distribution. A normal distribution is indicated by data that are symmetrically distributed around the mean. This test is essential because many parametric analyses assume normality, and conclusions are generally based on significance values (p-values), where a p-value greater than 0.05 suggests that the data are normally distributed. The results of the normality test in this study are as follows,

**Tabel 3. Normality Test**  
**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		90
Normal Parameters, b	Red	,0000000
	Std. Deviation	3,31049862
Most Extreme Differences	Absolute	,069
	Positive	,069
	Negative	-,042
Test Statistic		,069
Asymp. Sig. (2-tailed)		,200e,d

Source: Processed Data SPSS Version 27

### Multiple Linear Regression Analysis

Multiple regression analysis is a statistical method used to investigate the influence of two or more independent variables on one dependent variable, as well as to forecast the dependent variable's value from the combination of these independent variables. This approach allows researchers to assess the impact of each independent variable separately and together on the dependent variable. In this study, multiple regression analysis was used to explore how learning satisfaction (X1) and learning environment (X2) affect students' academic achievement (Y) at Perdana 1 Vocational High School Surabaya.

By using this analysis, it is possible to identify not only whether the independent variables collectively have a significant effect on the dependent variable, but also to determine which variable contributes more dominantly in explaining the variation in academic achievement.

**Table 4. Partial Significance Test (t-test)**

Models	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1					
	(Constant)	2,014	3,762	,535	,594
	Learning Satisfaction	,396	,136	,281	,004
	Learning Environment	,746	,124	,581	,000

Source: Processed Data SPSS Version 27

Thus, in a partial test (t-test), the learning satisfaction has a regression coefficient value of 0,396 with a t-value of 2,919 and a significance of 0.004 ( $< 0.05$ ) and the

environment variable has a regression coefficient value of 0,746 with a t-value of 6,033 and a significance of 0.000 ( $< 0.05$ ). So it can be concluded that the learning satisfaction and learning environment has a positive and significant effect on academic achievement in a partial test (t-test). Conclude that the two independent variables in this study, namely learning satisfaction and learning environment, were proven to have a significant positive effect and contribute to improving students' academic achievement, with the learning environment as a more dominant variable in influencing academic achievement than learning satisfaction.

**Table 5. Simultan Significance Test (F-test)**

Models		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1960,436	2	980,218	87,431	,000b
	Residual	975,387	87	11,211		
	Total	2935,822	89			

According to the findings of the simultaneous F-test shown in Table 5, the F value obtained is 87.431, and the significance level is 0.000, which is less than 0.05. This suggests that both learning satisfaction and the learning environment significantly influence academic achievement, resulting in the rejection of  $H_0$  and the acceptance of  $H_1$ . Consequently, the regression model is deemed appropriate for illustrating the connection between the independent and dependent variables.

The study also found an R-Square ( $R^2$ ) value of 0.668, meaning that 66.8% of the variation in academic achievement is accounted for by learning satisfaction and the learning environment, while the remaining 33.2% is influenced by factors outside the model. The Adjusted R-Square value of 0.660 confirms the model's stable explanatory power after accounting for the number of variables and sample size. Moreover, the R value of 0.817 indicates a strong correlation between the independent and dependent variables. Thus, the regression model is considered fairly robust in explaining academic achievement. The following section presents a detailed overview of the coefficient of determination test results in this study

## Discussion

These results indicate that higher learning satisfaction and a better learning environment contribute to improved student academic achievement. Based on respondent demographics, 54.4% were female and 45.6% were male, reflecting the composition of students in the departments studied. By grade level, 50.0% were from grade 12, 26.7% from grade 11, and 23.3% from grade 10. The dominance of grade 12 respondents is reasonable, as final-year students have more extensive learning experience and a better understanding of the factors affecting academic achievement. The result of validity test is confirmed that all statement items across the variables of learning satisfaction, learning environment, and academic achievement had Pearson Correlation values above 0.30 with a significance value of  $0.000 < 0.05$ . Indicators such as learning comfort, teacher interaction, understanding of material, school facilities, classroom atmosphere, and social relations all demonstrated good validity levels.

Thus, all research instruments meet the validity requirements and are suitable for use in data collection.

### **Partial Effect of Learning Satisfaction on Academic Achievement**

Partially, learning satisfaction has a positive and significant effect on academic achievement. This indicates that students who feel satisfied with the learning process, including the quality of teaching, interaction with teachers, and the relevance of learning materials, tend to achieve better academic outcomes. This finding is supported by (Chetioui et al., 2024) who argued that student satisfaction with the learning experience is a key predictor of academic performance, as satisfied students are more motivated, engaged, and persistent in their studies. Furthermore, (Olanloye et al., 2025) emphasized that learning satisfaction enhances students' intrinsic motivation, which in turn positively influences their academic achievement. Similarly, Elliot and McGregor (2001) found that students with higher levels of satisfaction tend to adopt mastery-oriented learning goals, which are strongly associated with superior academic performance.

### **Partial Effect of Learning Environment on Academic Achievement**

The learning environment also demonstrated a positive and significant partial effect on academic achievement, and was identified as the most dominant influencing factor in this study. A conducive learning environment, encompassing physical facilities, classroom atmosphere, peer relationships, and institutional support, plays a critical role in fostering effective learning. (Olanloye et al., 2025) argued that the quality of the learning environment significantly determines students' cognitive and affective outcomes, including their academic achievement. This view is reinforced by Zedan (2010), who found that students in supportive and well-resourced learning environments consistently outperform those in less favorable conditions. Adeyemo (2012) further confirmed that the school learning environment, including physical infrastructure and interpersonal relationships among students and teachers, is a strong determinant of academic achievement, particularly in vocational education settings.

### **Simultaneous Effect of Learning Satisfaction and Learning Environment on Academic Achievement**

At the same time, both learning satisfaction and the learning environment positively and significantly influence academic performance, as shown by the F-test result with a significance value of  $0.000 < 0.05$  and an  $R^2$  value of 0.668, meaning that 66.8% of the variation in academic achievement is explained by both variables. This finding aligns with the view of Pascarella and Terenzini (2005), who stated that academic achievement is a multidimensional outcome influenced by both the internal psychological states of students – such as satisfaction – and the external conditions of the learning environment. Likewise, (Vasileva-Stojanovska et al., 2015) highlighted that the integration of students into both the academic and social dimensions of school life, which encompasses both satisfaction and environment, is essential for academic success. These results further support the Social Learning Theory proposed by (Chaplin, 2016), which emphasizes that learning outcomes are shaped by the dynamic interaction between personal factors, behavioral patterns, and environmental conditions.

## **CONCLUSIONS**

The results of this study indicate that learning satisfaction and the learning environment play an important role in improving students' academic achievement at Perdana 1 Vocational High School Surabaya. Learning satisfaction was proven to have a positive and significant effect on

academic achievement, which means that students who feel satisfied with the learning process tend to achieve better academic outcomes. High learning satisfaction encourages students to become more motivated, active, and enthusiastic during classroom activities. In addition, the learning environment was also found to have a positive and significant influence on students' academic performance. A conducive learning environment, supported by adequate facilities, comfortable classrooms, and positive relationships among students and teachers, can improve students' concentration, learning interest, and overall academic abilities.

Furthermore, the study revealed that learning satisfaction and the learning environment simultaneously have a significant effect on students' academic achievement. Together, both variables were able to explain 66.8% of the variation in students' academic performance, while the remaining percentage was influenced by other factors outside the scope of this study. Among the two variables, the learning environment was identified as the more dominant factor affecting academic achievement. This finding highlights the importance of creating a supportive and comfortable educational environment as a strategic effort to enhance students' academic success. Therefore, schools should prioritize improving both the quality of the learning process and the overall learning environment to achieve better educational outcomes.

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