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Relationship between learning discipline and stundts' learning outcome on Lathing

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Abstract
This research was conducted to investigate the relationship between practical learning discipline and practical learning outcomes in lathe subjects. The aim of this research is to determine the relationship between practical learning discipline and students' practical learning outcomes in the class XI machining engineering class lathe subject at SMK Negeri 5 Padang. This research instrument uses questionnaires, learning outcomes and documentation. The type of research used is quantitative research, data obtained from population samples are analyzed according to the statistical methods used and then interpreted. The results and data analysis carried out show that learning discipline has a significant relationship to the learning outcomes of class XI Mechanical Engineering students at SMK Negeri 5 Padang. The magnitude of the relationship between learning discipline and student learning outcomes can be seen from the results of the Pearson correlation coefficient test of 0.680 > a significance value of 0.05 and can show a significant and positive relationship between the two variables.

Keywords : Practical Discipline Relationship, Practical Learning Outcomes, Lathe Subjects

Introduction

Education is an important factor in the progress of the nation. The benchmark for a nation's progress can be seen from the quality of the human resources that nation possesses. Quality human resources can be obtained from quality education, so it is necessary to improve the quality of education because quality human resources are the result of quality education (Putra & Basuki 2018). Education is a factor that supports the successful development of a nation. One indicator of quality education is achieving optimal learning outcomes, both in cognitive, affective and psychomotor aspects. However, each student's learning success is different. Based on the results of research conducted by researchers on data from the Ministry of Education, culture, research and technology. (https://data.kemdikbud.go.id/dataset/p/peserta-didik/jumlah-siswa-putus-sekolah-menurut tingkat-tiap-provinsi-indonesia-sd-2023). The school dropout rate in West Sumatra is quite high, one of the factors causing the high dropout rate is a lack of discipline in studying. So this learning discipline needs to be improved with good learning discipline which can certainly reduce the school dropout rate. Therefore, this research was carried out in order to optimize better learning outcomes.

Discipline is something that is very important and needed by students, because discipline is a requirement to be able to form attitudes, behavior and a way of life that will bring students success in learning. With discipline, students will be able to improve their learning outcomes and obtain better learning outcomes. Learning discipline can be implemented at school or at home. Students carry out their activities at school by obeying school rules, being active in learning activities, carrying out assignments given by the teacher, actively attending school and so on. While studying discipline at home, students always study regularly and without coercion from other

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people. In theory, to get high learning outcomes, students must instill good and orderly learning methods. Learning outcomes are not necessarily determined by mere intellectual intelligence, but learning discipline also determines students' success in achieving the desired learning outcomes (Sofan, 2017).

On the phenomenon of cases that have occurred now in work accidents in learning practicums(https://news.detik.com/berita/d6871215/tangan-siswi-smk-di-bogor-terjepit-mesin giling-saat-praktik-belajar) the vocational school student experienced a work accident during practical learning, due to a lack of discipline in work safety when carrying out the practicum, as a result, the student's hand was crushed in the machine and was almost cut off, therefore with this incident it is certainly a concern that we can realize how important work discipline is in Practice. Vocational High School (SMK) is part of the formal education level in Indonesia. (Indonesian Constitution No. 20 of 2003) explains that Vocational High Schools (SMK) are educational institutions that prioritize graduates being ready to enter the world of work in certain fields. Vocational High Schools (SMK) emphasize developing students' professional attitudes, with the hope that students can become competent and skilled workers to enter the world of work. Based on researchers' observations during the implementation of Educational Field Experience (PLK) activities carried out at SMK Negeri 5 Padang, it was found that students' practical learning outcomes were low, especially in lathe learning, this was due to the teacher explaining the material using the lecture method, writing on the board. and students are not actively involved in class, not all students are active in asking questions during learning activities, so that many students' discipline in following practices at school is still below the school's Minimum Completeness Criteria (KKM). The researcher obtained data that many students' learning achievements in the lathe subject were still below the school's Minimum Completeness Criteria (KKM), namely, the following data on the final grades for the odd semester in the lathe subject.

Low student learning outcomes can be caused by several factors, both internal and external factors. (Slameto, 2006) states that the factors that influence learning outcomes are internal factors and external factors. Internal factors include physical, fatigue and psychological factors (intelligence, interest, talent and motivation). External factors include family factors, school facilities and infrastructure and the community. Learning outcomes are abilities obtained from the learning process in the form of behavior change. According to (Dwijayani, 2019) learning outcomes are assessments given to students after participating in learning activities including knowledge, skills and attitudes of students with their behavior. The practical learning method is a way of teaching in which educational material is delivered using real tools or objects, as demonstrated, with the aim of making it easier for students to understand and be able to practice the material. This method allows students to apply, test and adapt theory to real situations through practice or work. In this process, training participants will receive effective learning to develop and perfect the necessary skills (Titin, 2016). The lathe subject is one of the productive theoretical and practical subjects in the mechanical engineering department. This subject is taught in schools as an initial basis for students to know what tools, functions and how to use a lathe machine. So it is hoped that the knowledge gained during the teaching and learning process can be applied in the industrial world, the technical machine entity consists of realization and practicality, and materials are combined into one and support each other. (Hakim et al., 2022).

Methods

This research uses a descriptive survey research design because the survey results obtained are then analyzed using descriptive statistical analysis. The type of research used is quantitative research, data obtained from population samples are analyzed according to the statistical methods used and then interpreted

Research Instrument

In the research, the instrument used was a questionnaire. Respondents were asked to put a check mark (v) in the column provided according to the actual situation. And this research uses a Likert scale with a range of 5.

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Table 1. Questionnaire Statement Scores Using a Likert Scale

Answer	Question Score	
	Positive	Negative
Strongly agree	5	1
Agree	4	2
disagree	3	3
Dont Agree	2	4
Strongly disagre	1	5

Data Analysis Techniques

This research aims to determine the relationship between the independent variable (X), namely, Practical Learning Discipline and Practical Learning Outcomes as the dependent variable (Y). Classify variables into five categories to see the respondent's level of achievement. The classification technique used according to Arikunto (2010) is:

Normality Test
This test was carried out to determine whether the distribution of the data being analyzed was normal or not, for the test the 50 Kolmogorov – Smirnov test was used. The criterion for the normality test is that if the significance is more than 0.05 then it is normally distributed. Normality testing was carried out using SPSS version 26.0

Correlation Test
The correlation test is used to test whether there is a relationship and the direction of the relationship between two variables. The correlation coefficient is obtained by knowing how to calculate estimates that will explain the influence of the relationship between two variables. Next, to find out the correlation value between variable X and variable Y, the Product Moment correlation formula from Karl Pearson is used with the help of the SPSS (Statistical Product and Service Solution) application program for Windows.

Table 2. Interpretasi koefisien Korelasi

Interval Koefisien	Reletionship level
0,80 – 1,00	Sangat Kuat
0,60 – 0,799	Kuat
0,40 – 0,599	Cukup Kuat
0,20 – 0,399	Rendah
0,00 – 0,199	Sangat Rendah

Linearity Test
The linearity test is a prerequisite test that is usually carried out when conducting Pearson product moment correlation analysis or linear regression. The linearity test aims to determine whether the relationship between practical discipline as the independent variable (X) and practical learning outcomes as the dependent variable (Y) is significantly linear or not. Linearity testing was carried out using SPPS version 23. The linearity test in SPSS used Test for Linearity with a significance level of 0.05. Two variables are said to have a linear relationship if the Deviation from linearity value is > 0.05

Hypothesis Test
Namely by comparing the calculated t value with the t table value (Wiratna Sujarweni, 2008:91). If the calculated value is greater than the t table value, it can be concluded that there is a significant relationship between the practical learning discipline and the practical learning outcomes for class XI machining engineering.

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Finding and Discussion

Finding

Learning discipline

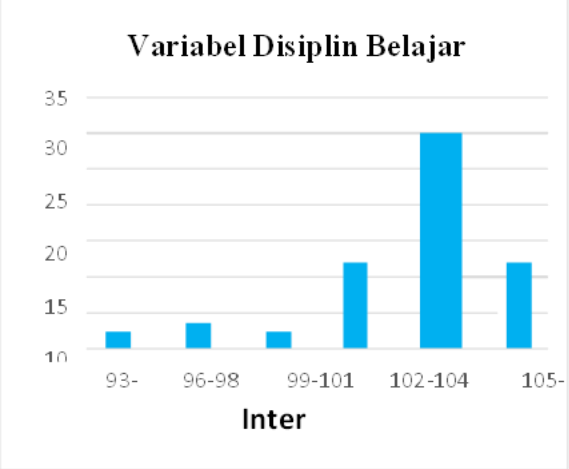
Based on the results of the analysis, the average score (mean) was 105.7, the maximum score (max) was 111, while the minimum score (min) was 93. The median score was 106. The analysis results also showed a standard deviation of scores (std. deviation) of 3,988, score range is 18. For a description of the data and frequency of practical learning discipline data, see the following table :

Table 3. Table of Frequency Distribution of Practical Learning Discipline Variables (x)

Interval	Frek. Absolut	Frek. Relatif
93-95	2	3,33%
96-98	3	5%
99-101	2	3,33%
102-104	12	20%
105-108	30	50%
109-111	11	18,3%
Total	60	100%

From the distribution table of variable X above, a histogram graph of learning discipline can be created as follows:

Figure 1. Histogram Graph of Practical Learning Discipline Variables (X)



Learning Outcomes

Based on the statistical description in the table, the results of the analysis show that the number of respondents (N) was 60 students, the average score (mean) was 77.08, the middle score (median) was 80.00, the maximum score (max) was 90, while the score the minimum (min) is 50. The analysis results also show that the standard deviation of the scores (std. deviation) is 9.080, the score range is 40.

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Table 4. Table of Frequency Distribution of Learning Outcome Variables

Value Range	Frekuensi	Persentase
50-60	3	5%
61-70	13	21,6%
70-80	27	45%
81-90	17	28,3%
Total	60	100%

From the distribution table for variable Y above, a histogram graph of learning outcomes can be created as follows:

Table 5. Anova table

ANOVA Table							
			Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Learning outcomes * Learning discipline	*Between Groups*	*Combined*	77.614	13	5.970	1.912	0,086
		Linearity	26.498	1	26.498	8.484	0,006
		Deviation from Linearity	51.115	12	4.260	1.364	0,219
	Within Groups		140.549	45	3.123		
	Total		218.163	59			

Normality test

The results of the research data normality test were carried out using the Kolmogrov Smirnov test technique (K-S Test) as a basis for rejecting or accepting decisions about whether or not the distribution of research sample data is normal. A good regression model is to have residual values that are normally distributed. Normality test data was set at an alpha significance of 0.05.

Table 6. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		60
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	9,01826695
Most Extreme Differences	Absolute	,100
	Positive	,049
	Negative	-,100
Test Statistic		,100
Asymp. Sig. (2-tailed)		,200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Based on the table above, it is known that the significance value of the two variables, where both values are 0.200, is greater than the alpha level of 0.05. This shows that the data distribution for the variables Learning Discipline and Learning Outcomes is declared to be normally distributed.

Linearity test

The main purpose of the linear test is to determine whether there is a linear relationship between the independent variable (X) and the dependent variable (Y). The test can be said to be linear if the value is sign. > α 0.05 then there is a linear relationship between variables. Based on the table above, it can be seen that the sig value of deviation from linearity is 0.219, which value meets the requirements and is declared a variable for learning readiness and linear learning outcomes.

Hypothesis Test

Correlation coefficient testing aims to determine whether there is a relationship between learning readiness (X) and learning outcomes (Y), and to find out how big or strong the relationship is between variable X and variable Y. This test was carried out using the Product Moment correlation formula from Pearson.

Table 7. Hypothesis test

		Learning discipline	Learning outcomes
Readiness to learn	*Pearson Correlation*	1	0,680**
	Sig. (2-*tailed*)		0,000
	N	60	60
Learning outcomes	*Pearson Correlation*	0,680**	1
	Sig. (2-*tailed*)	0,000	
	N	60	60

From the results of this correlation coefficient calculation, rcount (pxy) = 0.680. This shows rxy>0, so it can be concluded that there is a positive relationship between learning discipline and learning outcomes. In the correlation test results table there is a symbol of two stars in the Pearson correlation results section, which means that the relationship between the two variables has a significant relationship.

Discussion

Based on the results of analysis with product moment correlation, it shows that there is a positive relationship and there is a significant relationship between learning discipline and learning outcomes. The analysis results show a Pearson correlation coefficient of 0.680 indicating a significant and positive relationship between the two variables. The results of the hypothesis test obtained that the calculated R is greater than the R table (0.680 > 0.514) and has a significant value of 0.000, which means more than 0.05. So this research proves the hypothesis which states that "There is a positive and significant relationship between learning discipline and learning outcomes in the Class XI Machining Engineering Lathe Subject at SMK Negeri 5 Padang. This means that the relationship between practical learning discipline and learning outcomes has a strong category. The findings of this research are supported by research conducted by Afifah Saidatul (2019) entitled The Relationship between Student Discipline and Learning Outcomes of Pancasila and Citizenship Education for Class XII Students at Somba Opu Sungguminasa High School, Gowa Regency. The research results show that: (1) the level of student discipline is 86.419% and the level of student learning outcomes is 83.7%, both of which are in the very good category. (2) the correlation coefficient value is 0.605. Because rcount > rtable or 0.605 > 0.374, then H0 is rejected and H1 is accepted. The conclusion of this research is that there is a positive and significant relationship between student discipline and learning outcomes (Saidatul 2019). From the description of the data above, high learning discipline can increase student enthusiasm in carrying out learning so that the results obtained will be maximum and vice versa

Conclusion

Based on the results and data analysis carried out, it can be concluded that learning discipline has a significant relationship to the learning outcomes of class XI Mechanical Engineering students at SMK Negeri 5 Padang. The magnitude of the relationship between learning discipline and student learning outcomes can be seen from the results of the Pearson correlation coefficient test of 0.680 > a significance value of 0.05 and can show a significant and positive relationship between the two variables.

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Declaration

Author contribution

Riski Rahmat Hidayat as a researcher and data collector for the facility relationship. Dr. Eko Indrawanis, S.T., M.Pd. a provider of direction and methods in research; Dr. Rizky Ema Wulansari, M.Pd.T. Evaluating research methods, Sri Rizki Putri Primandari, M.T., Ph.D.. data analysis and evaluating Background of the Problem.

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Conflict interest

The author states that there was no conflict when conducting the research.

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