

The Effect of Intellectual Intelligence on Student Learning Outcomes

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Abstract: The purpose of this study was to determine the effect of intellectual intelligence on student learning outcomes. The method used is a descriptive quantitative approach and uses the correlation method. This research technique uses a questionnaire distributed to 40 students of the research sample, documentation to obtain data on the average final grade of odd semesters. Questionnaire for the Intellectual Intelligence variable with 29 statement items, while the Student Learning Outcomes variable takes data from the final semester scores. Data analysis used pearson product moment analysis and hypothesis analysis. Based on the analysis, it shows that between the Intellectual Intelligence variable and the Student Learning Outcomes variable shows a strong Pearson correlation value. So it can be concluded that there is an influence of intellectual intelligence on student learning outcomes.

Keywords: Intellectual, Intelligence, Learning Outcomes

1. Introduction

Intelligence is a great gift from the almighty Allah SWT to humans. Intelligence is an advantage that humans have when compared to other creatures (Rohmah, 2018). According to (Handriani & Subhan, 2020) intelligent people are identified with an understanding of the concept of physics, because the completion of physics requires special skills such as mastering how to formulate equations or calculations in physics. The intelligence possessed by individual students is closely related to the high and low learning achievements of students

which can be seen from the learning outcomes, and it cannot be denied that the intelligence of students plays an important role in the learning achievements they achieve.

There are several factors that can affect the level of individual intelligence of students, namely factors within individual students and factors from outside individual students. Then one of the determining factors from within students is the level of learning achievement which is a reflection of the intelligence of students. So it is a must for educators to be able to know in more detail about the characteristics and level of intelligence in each student to be able to help measure the implementation of an effective learning process (Rohmah, 2018). The curriculum needs to be managed carefully in order to accommodate the suitability of the intelligence possessed by students, so as to support their growth and development, because the intelligence possessed by students is not the same as one another, this is because there are genetic factors, environmental conditions factors, learning experience factors can also determine the level of intelligence that must be nurtured and developed in the life of the learner's learning process.

According to (Farida & Khair, 2019) interpreting intelligence in a general sense is a general ability that distinguishes qualities between one person and another, intellectual intelligence is commonly referred to as intelligence. Intelligence is the cognitive ability possessed by organisms to adapt effectively to a complex and ever-changing environment and is influenced by genetic factors. Intellectual intelligence can contribute approximately 20 percent to determining success in one's life (Andri, 2018). Then there are findings saying that the level of intelligence of an individual can affect the development of his personality, where individuals who have high intelligence are usually able to adjust to their environment naturally, on the contrary if the level of intelligence is low they usually experience obstacles in adjusting to various problems in their environment (Hartini, 2017). Intellectual intelligence possessed by a person has a high role because it can produce good performance (Latrini2, 2017). Intellectual intelligence is a global ability possessed by individuals, so that individuals have the ability to act purposefully and think meaningfully and are able to interact with the environment efficiently. According to (Seran & Herwiyanti, 2019) that when someone who has a high IQ is easier to absorb and understand the knowledge given so that his ability to solve problems related to work will be easier and better. Based on the description above, it can be concluded that intellectual intelligence is an ability someone to do everything systematically by looking at the overall

condition. In line with the opinion (Dawam, 2019) asserts that intellectual intelligence is inviting someone to think by seeing the truth on the basis of his thoughts. On this basis, it is natural that this intelligence is closely related to the human ability to learn and create something, including in the field of science, so as to be able to achieve maximum learning outcomes.

Learning outcomes are a benchmark of a student's learning success achieved in accordance with the learning objectives that have been set. The components of learning outcomes can be seen from the cognitive (knowledge), affective (attitude), and psychomotor (behavior) aspects (Irdam Idrus & Sri Irawati, 2019). Then someone can be said to be successful in learning what if he is able to show a change in the ability to think, skills, and behave, even changes in learning outcomes can be observed, proven, and measured in the form of achievements obtained by students as learning outcomes built through the learning process. (Andriani & Rasto, 2019). This opinion is also strengthened by the statement that the achievement of learning outcomes or student achievement is closely related to the achievement of cognitive, affective, and psychomotor aspects (Wahyuningtyas & Sulasmono, 2020). Related to learning outcomes, there are several factors that can influence it, including attitudes and learning styles, even increasing good learning outcomes is not only supported by the willingness of students to study well, but the learning methods from the teacher are also very supportive (Irdam Idrus & Sri Irawati, 2019). And teacher teaching methods such as the classroom action method obtained by the application of google classroom can improve student learning outcomes (Daniati, Ismanto Bambang, 2020). So it can be concluded that the success of the learning process experienced by students is of course many factors that influence it both from the school environment, family or from the students themselves, including the intellectual intelligence of students (Pasek, 2017).

This research was conducted in the city of Palembang, which is the 7th largest city in Indonesia after Semarang. The city of Palembang is also known as the center of the Small and Medium Business Information System, where the City of Palembang is an information system that accommodates SME players in Palembang City in promoting products or services carried out by SME actors (Mirza et al., 2019) . The development of the Palembang city area is very strategic, especially in empowering human resources, especially in improving the world of tourism and accompanied by producing quality education, it must be accompanied by an increase in educational facilities (Noprailia et al., 2021). The

condition of the society is very multicultural which consists of various ethnic groups such as; the pasma, komring, sekayu, even the Chinese, etc. The daily life of the people is very interacting or cultured of mutual respect, respect for customs, religious communities, but the level of education is still low (Amri & Maharani, 2018). And the city of Palembang is a center for pempek business both on a large scale to the scale of Small and Medium Industries (IKM). in Palembang City is in the Seberang Ulu area (Pratiwi, 2018).

There are several previous studies discussing intellectual intelligence conducted by (Mamangkey et al., 2018) which highlighted employee performance found by many factors including intellectual intelligence (IQ), with a quantitative descriptive analysis approach. The results of hypothesis testing indicate that intellectual intelligence (IQ), simultaneously affects employee performance. Then the research conducted by (Latrini2, 2017) which aims to determine the effect of emotional intelligence, spiritual intelligence, intellectual intelligence, and independence on the performance of auditors at KAP Bali. The data analysis technique used is Multiple Linear Regression Analysis. Based on the results of the study, it was found that emotional intelligence, spiritual intelligence, intellectual intelligence and independence had a positive effect on auditor performance. Pasek in his research on the influence of intellectual intelligence on the level of accounting understanding. Using the explanatory research method, the results show that intellectual intelligence has a positive and significant effect on accounting understanding. This means that with good intellectual intelligence, students will more easily understand accounting understanding (Pasek, 2017). Then Silen conducted research with the aim of analyzing the influence of intellectual, spiritual intelligence and emotional intelligence on learning outcomes, using explanatory research methods. The analytical tool used is multiple linear regression. The results show that there is a positive and significant effect between intellectual intelligence on learning outcomes (Silen, 2014)

This research is new, and has never been done by previous researchers. This study examines intellectual intelligence on learning outcomes for students of the State Vocational High School 1 Palembang. The difference in this study lies in the analysis of intellectual intelligence on student learning outcomes at the high school/vocational level, it is assumed that high intellectual intelligence in students so that learning outcomes increase, and in the end students will excel. This research contributes to the development of science, especially in the field of

learning media media so that all education managers use media as a tool to motivate student learning, schools and learning.

2. Methods

This study uses a descriptive quantitative approach using the correlation method, the data collection instrument does not use a test but a non-test with observation, questionnaires and documentation. The population in this research is grade 11 of SMK Negeri 1 Palembang consist of 138 students

The method that will be used to determine the number of samples is using the Slovin formula (Sugiyono, 2017)

$$\begin{aligned}
 n &= \frac{N}{1 + ne^2} \\
 &= \frac{138}{1 + 138 (0,005)^2} \\
 &= 40
 \end{aligned}$$

Table 1. Research Sample

No	11th Class OTKP	Population	Formula	Sample (n)
1	OTKP 1	35	$\frac{35}{138} \cdot 40$	10
2	OTKP 2	34	$\frac{34}{138} \cdot 40$	10
3	OTKP 3	34	$\frac{34}{138} \cdot 40$	10
4	OTKP 4	35	$\frac{35}{138} \cdot 40$	10
Total		138		40

Data collection techniques using techniques, namely: observation, questionnaires (questionnaire) and documentation. Data analysis using statistical correlation method. to find the effect between two variables through significant test and hypothesis testing.

3. Results and Discussion

In line with the formulation of the problem, data collection was carried out at the State Vocational High School 1 Palembang with a total sample of 40

students. For data collection, the researcher distributed a questionnaire totaling 29 statement items for Intellectual Intelligence (X) while for Student Learning Outcomes (Y) the researcher used the average score through documentation for the odd semester of the 2020-2021 school year. After the questionnaire was distributed, the total score obtained from the answers that had been filled in by the 11th graders of Office Automation and Governance at the State Vocational High School 1 Palembang. The data for the X and Y variables can be seen in the table below:

Table 2. Results of Statement Scores and Student Learning Outcomes

Number of Respondents	Variable X (Intellectual Intelligence)	Variable Y (Student Learning Outcomes)
1	81	78
2	80	79
3	79	80
4	76	75
5	80	82
6	76	77
7	79	80
8	80	79
9	75	78
10	74	75
11	79	81
12	81	80
13	77	79
14	81	82
15	79	78
16	78	76
17	81	81
18	78	77
19	82	79
20	79	81
21	82	80
22	77	78
23	80	81
24	78	79
25	79	78

26	80	82
27	74	76
28	79	80
29	77	76
30	80	78
31	79	78
32	82	81
33	81	79
34	82	80
35	75	75
36	79	78
37	78	79
38	79	80
39	81	79
40	76	77
Total	3153	3151

The description of the Intellectual Intelligence data shows that the average value reaches 78.38 with a standard deviation of 2.206. Intellectual intelligence score frequency histogram

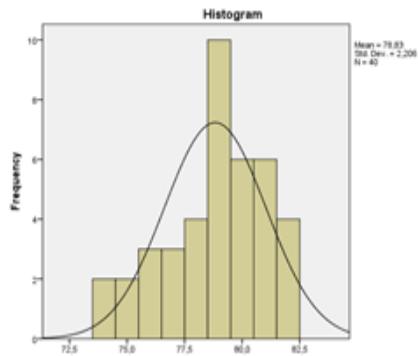
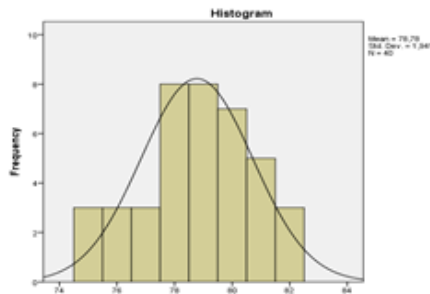


Table 3. Descriptive Statistics of Variable Y Learning Outcomes

N	Valid	40
	Missing	0
Mean		78,78
Std. Error of Mean		,307
Median		78,88 ^a
Mode		78 ^b
Std. Deviation		1,941
Variance		3,769
Skewness		-,285
Std. Error of Skewness		,374
Kurtosis		-,544
Std. Error of Kurtosis		,733
Range		7
Minimum		75
Maximum		82
Sum		3151

Based on the table above, it can be seen that the mean (average) of student learning outcomes is 78.78, the standard deviation value is 1.941, the minimum value is 75, the maximum value is 82, and the total value of student learning outcomes is 3151 students. The following is a histogram of the frequency of learning outcomes



The normality test was conducted to determine whether each data was normally distributed. The following is a table for calculating normality on the X variable (Intellectual Intelligence) and Y Variable (Learning Outcomes).

Table 4. Normality Test for Intellectual Intelligence Variable X and Variable Y

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statisti		Sig.	Statisti		Sig.
	c	Df		c	Df	
Intellectual Intelligence	,182	40	,002	,937	40	,027
Learning Outcomes	,121	40	,142	,952	40	,090

a. Lilliefors Significance Correction

Hypothesis testing

To find out whether there is a relationship between Intellectual Intelligence and student learning outcomes in grade 11 Office Governance Automation at Vocational High School 1 Palembang with analysis using the Pearson Product Moment Correlation.

Table 5. Results of Pearson Product Moment Correlation

		Intellectual Intelligence	Learning outcomes
Intellectual Intelligence	Pearson Correlation	1	,715**
	Sig. (2-tailed)		,000
	N	40	40
Learning outcomes	Pearson Correlation	,715**	1
	Sig. (2-tailed)	,000	
	N	40	40

Based on the above analysis, it shows that between the X (Intellectual Intelligence) variable and Y (Learning Outcomes) variable, the Pearson correlation value or r count and r table is 0.715 at the 5% level and the r table value is 0.312. From the value of rcount and r table that is $0.715 > 0.312$, it shows that the correlation between variable X and variable Y is strong. Where, if r count $>$ r table then there is a relationship.

T-Test Results

To find out whether there is an influence of Intellectual Intelligence (X) on Student Learning Outcomes (Y), an analysis was carried out using the t test. The results of the t-test in this study are shown in Table 6 as follows:

Table 6. The Results of the T-Test
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	29,171	7,869		3,707	,001
Kecerdasan Intelektual	,629	,100	,715	6,306	,000

a. Dependent Variable: Learning Outcomes

Based on the table above explains that the t arithmetic value is 6.306 at an error rate of 5% or 0.05, the t table value is 1.68595, then $t \text{ arithmetic} > t \text{ table}$ or $6.306 > 1.68595$, meaning that there is an influence of Intellectual Intelligence on the Learning Outcomes of Class 11 Students Automation and Office Governance at the State Vocational High School 1 Palembang.

After calculating the 29 questionnaire statements of variable X from all indicators of variable X that the condition of Intellectual Intelligence is good because the Likert scale score Often (SR) has the highest total score of 510 (43.85%). This means that the majority of students have good Intellectual Intelligence. While at the end of the semester the average value of students shows that the value is quite varied. So from the total number of values obtained an average value of 78.78. This shows that the average score of students has a good predicate. The next step is normality testing and hypothesis testing. In testing the normality of the data for two variables, it was found that the data was normally distributed and said to be normally distributed with the significance test criteria > 0.5 then normally distributed. While the significance < 0.05 means the data is not normally distributed, then the next step is hypothesis testing.

4. Conclusion

Based on the data analysis above, it can be concluded that the results show the Pearson correlation value with a significance level of 5% and the r table value of 0.312. At the 1% significance level, it is obtained that r count is 0.715 and the value of r table is 0.403. From the results of data analysis using the t-test, the t-value is 6.306 and the t-table value is 1.68595. Then $t \text{ count} > t \text{ table}$ or $6.306 > 1.68595$. so it can be concluded that there is an influence of intellectual intelligence on student learning outcomes. Suggestions that researchers can give

are that teachers are expected to be able to continue to provide material with appropriate learning methods so that students can easily understand them, as well as a consideration in the implementation of teaching and learning activities that intellectual factors need to be considered in order to shape students' personalities, and can also be a guide for teachers to map out intelligence of each student. Then students are motivated to always hone their intellectual intelligence by always studying seriously and being active in the learning process in order to get good learning outcomes.

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