



The Relationship of Information Technology, School Environment, Emotional Intelligence, and Intellectual Intelligence on the Learning Achievement of Students

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Abstract

This research aims to determine how much influence Information Technology, School Environment, Emotional Intelligence, and Intellectual Intelligence have on the Learning Achievement of Students at SMK Negeri 9 Padang. The research results obtained were (a) that there was no significant influence of the Information Technology variable on the learning achievement of students at SMK Negeri 9 Padang, (b) there is a positive and significant influence of the School Environment variable on the Learning Achievement of students at SMK Negeri 9 Padang (c) there is a positive and significant influence of the Emotional Intelligence variable on the Learning Achievement of SMK Negeri 9 Padang students (d) there is no significant influence of the Intellectual Intelligence variable on the Learning Achievement (e) Simultaneously there is a significant influence between Information Technology, School Environment, Emotional Intelligence and Intellectual Intelligence on Student Learning Achievement.

Keywords: Information Technology, School Environment, Emotional Intelligence, Intellectual Intelligence, Learning Achievement

1. Introduction

Education is an activity programmed to change or develop the attitudes and personality achieved (Rusilowati & Wahyudi, 2020). Usually, education is accepted in various circles within the family and society. Quality human resources determine the availability of a nation's national development. With education, quality human resources will be included with all their personalities. Quality human resources will be able to keep up with current developments in science and technology. With education, human resources are expected to be able to face world developments in the future. The increasingly developing world of technology today and education is also required to adapt to technological developments, especially regarding education and the education system itself.

In education, a school is a place or container for education. A school is a place of formal education that is the center of a child's learning activities and social interaction, and it is a place where a person can develop their thoughts and imagination. School is also said to be a place to foster knowledge. Nowadays, school is not

only a place to gain knowledge but is also defined as a place to develop all the potential in children.

Success and failure in education can be seen from learning achievement. The better a child's learning achievement scores, the better the success he will have in getting to a higher level of education later. According to (Riswanto & Aryani, 2017), learning achievement is always used to determine students' learning success at school because learning achievement itself is a value that shows the highest ability in learning, which is achieved according to the student's ability to do something at a certain time. The factors that influence whether a student's learning achievement is maximum or not are internal and external factors. Internal factors include school environment, learning facilities, and atmosphere in the classroom. External factors can include knowledge of information technology, social environment, family environment, emotional intelligence, teacher's way of teaching, creativity, intellectual intelligence, and many other factors that influence a student's learning achievements. The first factor is information technology.

Information technology in education has become a necessity that cannot be separated from teaching and

learning activities because every second the world is developing, the existence of sophisticated technology-based tools cannot be denied. In teaching and learning, information technology is vital in making a class attractive and not dull; children also get the latest information through technology (Shatri, 2020). Information technology also plays a role in a child's success in achieving learning achievements. Information technology will add to the existing pressure and create extraordinary pressure and challenges for the current education system. Knowledge can be obtained easily through websites, discussions via Mailing lists, and chat.

Information technology is essentially part of the study of science in improving the effectiveness of communication and action, as well as facilitating human work (Cascio & Montealegre, 2016). According to (Theis & Wong, 2017), information technology is limited to computer technology used to process and store information and includes technology in sending information. According to (Shatri, 2020), Information Technology is any form of technology applied to process and transmit information in electronic form for communication and networking worksheets.

The school environment plays an essential role in student learning achievement. This environment encompasses several aspects: the physical environment, which includes the surroundings of the school, existing learning facilities and infrastructure, learning resources, and media; the social environment, which refers to the relationships and interactions between students and their peers, students and their teachers, and students and other staff within the school; and the academic environment, which encompasses the atmosphere and implementation of teaching and learning activities, various academic activities, and other related elements. The school environment is everything outside the student that can influence their development.

Emotional intelligence is the ability to feel, understand effectively, and apply emotional power and sensitivity as a source of human energy, information, connection, and influence (Dereli, 2015). The role of emotional intelligence is huge and can influence social life. With emotional intelligence, he can manage his feelings, control his feelings, and express his experiences. Emotional intelligence can make a person not easily give up, not quickly get angry or offended, and understand what the people around him are feeling (Meires, 2018). Moreover, this intelligence can support a student in achieving the goals and aspirations he desires. If there is only one student with high academic scores, usually this student cannot control his emotions, is too critical, fussy, seems cold, and has unwarranted anxiety. That is if it is not supported by good emotional intelligence. And suppose a student has high intellectual intelligence, but low emotional

intelligence. In that case, he will tend to be seen as someone stubborn, difficult to get along with, easily frustrated and does not easily trust other people. The intellectual intelligence possessed by students can be used to make it easier to achieve or improve competence and master and understand the material being taught well. In the end, students' intellectual intelligence will lead them to achieve better.

This research was conducted at SMK Negeri 9 Padang, an effort to improve the learning achievement of students at SMK Negeri 9 Padang in a better direction. However, many obstacles must be faced, making it difficult to achieve this achievement. The condition of the school is still under construction, rubbish is still strewn about, garden management is not neatly arranged, students are not neat and clean and manners are not good. This has resulted in a decline in student learning achievement as seen from the school achievements achieved by students at SMK Negeri 9 Padang, which is due to insufficient use of information technology, a school environment that is still neglected, and factors of emotional intelligence and intellectual intelligence that have not yet been optimized so that causing a decrease in the learning achievement of students at SMK Negeri 9 Padang.

Learning achievement is a sentence consisting of 2 words: achievement and learning. The words achievement and learning have different meanings. Meanwhile, learning achievement is the result that students have achieved from the learning process activities that students have gone through in a certain period. Learning is a relatively steady change in level thanks to experience and training (Soderstrom & Bjork, 2015). Learning outcomes result from a learning process achieved through good learning which is the hope of all parties. Learning outcomes (achievement) must be obtained through an assessment. The results of the student's mastery and understanding are listed in numerical form as a result of the student's learning process, usually called achievement. According to Hamdani in Siti Nurhidayah (2016:3) achievement is the result of an activity that has been carried out, created individually and in groups, and a person's attitude in completing something.

According to (Fahlevi & Sitorus, 2020) information technology is the facilities and infrastructure (hardware, software, user) systems and methods for obtaining, sending, processing, interpreting, storing, organizing and using data meaningfully. (Avgerou & Walsham, 2017) I also expressed the same thing: information technology is a science in computer-based information, and its development is very rapid.

According to (Boldureanu et al., 2020), schools are one of the institutions that have an important role in creating strong entrepreneurs. The environment exists in the natural surroundings that have a certain meaning or

influence on individuals (Gifford & Nilsson, 2014). The school environment is a formal institution established by society or the state to help prepare children to live with sufficient intelligence and skills in a modern society that has a high culture and in which there are rules and regulations that school members must implement. The school environment is a variety of factors that influence education or various environments where the educational process occurs. (Fadhilah, 2021) defines emotional intelligence as a person's ability to motivate oneself, survive in the face of frustration, control impulses, not exaggerate pleasure or distress, keep stress-free, and not paralyze the ability to think and empathize. Moreover, there is the principle of trying while praying. According to (Frensch & Sternberg, 2014), Intelligence is the ability to provide reasonable responses given truth or facts. In this opinion, someone considered intelligent is someone who can provide an excellent response to a truth or fact.

2. Methods

This research was conducted on all students at SMK Negeri 9 Padang as one of the well-known vocational schools in the city of Padang which is located at Jl. Bundo Kandang No. 18 West Padang. In this research, the author uses a descriptive method, namely a research method that describes what a company does based on facts or events within the company, then processes it into data and then carries out an analysis to finally produce a conclusion. An operational definition indicates how a variable is measured so that researchers can know whether the measurement is good or bad. The operational definitions in research are:

1. Information Technology (X1)

According to (Fahlevi & Sitorus, 2020) information technology is the facilities and infrastructure (hardware, software, user) systems and methods for obtaining, sending, processing, interpreting, storing, organizing, and using data meaningfully. (De Georgia et al., 2015) Also expressed the same thing: information technology is a science in computer-based information, and its development is very rapid. Technology has several indicators, namely:

- 1) Benefits include:
 - a. Make work easier
 - b. Useful
 - c. Increase productivity
- 2) Effectiveness includes:
 - a. Increase effectiveness
 - b. Developing employee performance

2. School Environment (X2)

According to (Gifford & Nilsson, 2014), the environment is something that exists in the natural surroundings that has a certain meaning or influence on individuals. The school environment is a formal institution established by society or the state to help prepare children to live with sufficient intelligence and skills in a modern society that has a high culture and in

which there are rules and regulations that school members must implement. The school environment is a variety of factors that influence education or various environments where the educational process takes place. According to (Wang & Degol, 2016) the indicators of the school environment itself are:

- 1) Physical Environment
- 2) Social Environment
- 3) Academic Environment

3. Emotional Intelligence (X3)

According to (Yavich & Rotnitsky, 2020), it is not just one monolithic type of intelligence that is important for success in life. However, there is a broad spectrum of intelligence with seven main varieties: linguistic, mathematical/logical, spatial, kinesthetic, musical, interpersonal and intrapersonal. And this intelligence is what Gardner calls personal intelligence, which is usually called emotional intelligence for Daniel Goleman. Indicators of Emotional Intelligence according to (Hudson et al., 2016) are:

- 1) Recognizing your own emotions
- 2) Managing Emotions
- 3) Motivate Yourself
- 4) Recognizing other people's emotions
- 5) Building/maintaining relationships

4. Intellectual Intelligence (X4)

According to (Ott & Michailova, 2018), intellectual intelligence is the ability to solve problems or create valuable products in one or several cultural backgrounds. The dimensions or indicators that form intellectual abilities are:

- 1) Numerical intelligence
- 2) Verbal understanding
- 3) Visualization of space
- 4) Good memory

5. Learning Achievement (Y)

Learning achievement is a sentence consisting of 2 words: achievement and learning. The words achievement and learning have different meanings. Meanwhile, learning achievement is the result that students have achieved from the learning process activities that students have gone through in a certain period. According to (Beard & Wilson, 2018) learning is a relatively steady change in level thanks to experience and training. Learning outcomes result from a learning process achieved through good learning which is the hope of all parties. Learning outcomes (achievement) must be obtained through an assessment. The results of students' mastery and understanding are listed in numerical form as a result of the student's learning process, usually called achievement. According to (Kpolovie et al., 2014) achievement is the result of an activity that has been carried out, created both individually and in groups and a person's attitude in completing something. Indicators of learning achievement are:

- 1) Domain of Creation (Cognitive)

- 2) Feeling Domain (Affective)
3) Intentional Domain (Psychomotor)

In this study, the population was all SMK Negeri 9 Padang students, totaling 1254 students and female students. Meanwhile, samples are listed using the formula:

$$n = \frac{N}{1 + Ne^2} = \frac{1254}{1 + [1254 \times (10\%)^2]} = 93 \text{ Respondents}$$

Where :

n = number of samples

N = Population

e = tolerable error limit in sampling %

So, the number of samples for students at SMK Negeri 9 Padang was 93 respondents for the data collected.

3. Results and Discussion

The results are presented in a format accessible to the reader (e.g. in graphs, tables, diagrams or written text). Multiple regression analysis is presented in Table 1 below:

Table 1. Multiple Regression Analysis of Variables Information Technology (X1), School Environment (X2), Emotional Intelligence (X3), Intellectual Intelligence (X4) and Learning Achievement (Y)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1,813	2,896		,626	,533
X1	,095	,099	,094	,951	,344
X2	,300	,059	,488	5,055	,000
X3	,294	,075	,375	3,943	,000
X4	-.104	,078	-.156	-1,322	,190

a. Dependent Variable: Y

Source: Data processed by authors, 2024

Thus, the regression model formed from the various numbers above is:

$$Y = 1.813 + 0.095X1 + 0.300X2 + 0.294X3 - 0.104X4 + e$$

Interpretation based on the multiple regression equation above can be concluded that:

A constant of 1.813 means that Information Technology (X1), Environment School (X2), Emotional Intelligence (X3) and Intellectual Intelligence (X4) are not If there is, Learning Achievement (Y) will remain at 1.813.

The regression coefficient is positive (unidirectional) at 0.095, meaning that if technology information is increased by one unit, assuming a school environment, emotional intelligence and intellectual intelligence are ignored. Will be increasing to 0.095.

A positive (unidirectional) regression coefficient of 0.300 means that if the Environment The school was increased by one unit, assuming Technology Information, Emotional Intelligence and Intellectual Intelligence are ignored. So, would increase to 0.300.

A positive (unidirectional) regression coefficient of 0.294 means emotional intelligence increased by one unit, assuming that information technology, school environment, and intellectual intelligence are ignored. Will be increasing to 0.294.

A negative regression coefficient of -0.104 means Intellectual Intelligence ditincrease by one unit, assuming Information Technology, School Environment and Emotional Intelligence are ignored. Will be resulting in a decrease of 0.104.

The t test is intended to partially test the significance of the influence of the independent variable and dependent variables' influence. Based on the results of this test, if the significant probability is smaller than alpha 0.05, then Ho is rejected and Ha is accepted, meaning there is a relationship, and if the significant probability is greater than alpha 0.05, Ho is accepted. Ha is rejected, meaning there is no relationship. The degrees of freedom (df) nk-1 are: 93 - 4 - 1 = 88 (n is the number of respondents and k is the number of independent variables) so that the results obtained for the t-table are 1.987. The results of data processing can be presented in table 2, namely as follows:

Table 2. t test-Variable Information Technology (X1), School Environment (X2), Emotional Intelligence (X3), Intellectual Intelligence (X4) And Learning Achievement (Y)

No	Independent Variable	t-statistics	t-table	Sig.
1	Information Technology	0,951	1,987	0.344
2	School Environment	5,055	1,987	0,000
3	Emotional Intelligence	3,943	1,987	0,000
4	Intellectual Intelligence	-1,322	1,987	0.190

Source: Data processed by authors, 2024

The results of the t test research are as follows:

Information Technology (X1) on Learning Achievement (Y) From the table above it can be seen that t count < t table ($0.951 < 1.987$) with a significant level ($0.344 > 0.005$), meaning that partially there is no influence between Information Technology and Learning Achievement. Thus Ho is accepted and Ha is rejected.

Ho = There is no significant influence between Information Technology and Achievement Study.

Ha = There is a significant influence between Information Technology on Learning achievement.

From the comparison results, it can be seen that t count and t table can be concluded that there is no positive influence between Information Technology and Learning Achievement.

School Environment (X2) with Learning Achievement (Y) From the table above it can be seen that t count > t table ($5.055 > 1.987$) with a significant level ($0.000 < 0.005$), meaning that partially there is a significant influence between the School Environment and Learning Achievement. Thus Ho is rejected and Ha is accepted.

Ho = There is no significant influence between the School Environment on Learning achievement.

Ha = There is a significant influence between the School Environment and Learning Achievement.

From the comparison results, it can be seen that the t count and t table can be concluded that there is a positive and significant influence between the School Environment and Learning Achievement.

Emotional Intelligence (X3) on Learning Achievement (Y). From the table above it can be seen that t count > t table ($3.943 > 1.987$) with a significant level ($0.000 < 0.005$), meaning that partially there is a significant influence between Emotional Intelligence and Learning Achievement. Thus, Ho rejected and Ha accepted.

Ho = There is no significant influence between Emotional Intelligence and Emotional Intelligence Learning achievement.

Ha = There is a significant influence between Emotional Intelligence and Learning Achievement.

From the comparison results, it can be seen that the t count and t table can be concluded that there is a positive and significant influence between Emotional Intelligence and Learning Achievement.

From the table above, it can be seen that t count < t table ($-1.322 < 1.987$) with a significant level ($0.190 < 0.005$), meaning that partially there is no significant influence between Intellectual Intelligence and Learning Achievement. Thus, Ho is accepted, and Ha is rejected.

Ho = There is no significant influence between Intellectual Intelligence and Learning Achievement.

Ha = There is a significant influence between Intellectual Intelligence and Learning Achievement.

From the comparison results, it can be seen that t count and t table can be concluded that there is no positive and significant influence between Intellectual Intelligence and Learning Achievement.

The F test uses generalized levels). Testing was carried out using the F test (anova), the F test uses a significance level of 0.05 (2-sided test) with a degree of freedom of 95%, $\alpha = 5\%$, df 1 (number of variables -1) or $5-1 = 4$, and df 2 (nk-1) or $93-4-1=88$, then the result obtained for f table is 2.48.

The F test is intended to determine whether the independent variables Information Technology, School Environment, Emotional Intelligence and Intellectual Intelligence simultaneously significantly affect the dependent Learning Achievement. The F test uses a significance level of 0.05 with a 2-sided test. The results can be seen in table 2 below:

Table 3. F-Test Variable Information Technology (X1), School Environment (X2), Emotional Intelligence (X3), Intellectual Intelligence (X4) And Learning Achievement (Y)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	768,083	4	192.021	20,233	,000b
	Residual	835.143	88	9,490		
	Total	1603.226	92			

a. Dependent Variable: Y

b. Predictors: (Constant), X4, X3, X2, X1

Source: Data processed by authors, 2024

The research results show that the F value is 20.233 with a significance level of 0.000 where <0.05 , so it can be concluded that all independent variables together significantly affect Learning Achievement and the hypothesis is accepted. This coefficient of determination is used in multiple linear regression to find out how big the percentage influence of the independent variables consisting of Information Technology (X1), School Environment (X2), Emotional Intelligence (X3) and Intellectual Intelligence (X4) simultaneously on Achievement Study (Y).

Table 4. Results of the Coefficient of Determination for Information Technology (X1), School Environment (X2), Emotional Intelligence (X3), Intellectual Intelligence (X4) and Learning Achievement (Y)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692a	.479	.455	3.08063

a. Predictors: (Constant), X4, X3, X2, X1

b. Dependent Variable: Y

Source: Data processed by authors, 2024

Based on the table above, the R² (R square) figure is 0.479 or 47.9%, so, in this case, it shows that the independent variables are Information Technology (X1), School Environment (X2), Emotional Intelligence (X3) and Intellectual Intelligence (X4) on the variable The dependent Learning Achievement (Y) is 0.455 or 45.50%, while other variables influence the remaining 54.50% in this research.

5. Conclusion

Based on the results of data analysis and interpretation of research results and discussions that have been presented previously, several conclusions from the research results can be put forward as follows:

Information Technology partially has a positive but insignificant effect on students' Learning Achievement at SMK Negeri 9 Padang. Therefore, it can be concluded that if information technology improves, it will not affect students' learning achievement at SMK Negeri 9 Padang. The school environment partially has a positive and significant effect on the learning achievement of students at SMK Negeri 9 Padang. It can be concluded that if the school environment has improved then students' learning achievement will increase. Emotional Intelligence partially has a positive and significant effect on students' learning achievement at SMK Negeri 9 Padang. It can be concluded that if Emotional

Intelligence increases then learning achievement will also increase.

Intellectual Intelligence partially has no positive and insignificant effect on students' learning achievement at SMK Negeri 9 Padang. Therefore, it can be concluded that if Intellectual Intelligence increases, it will not affect students' learning achievement at SMK Negeri 9 Padang.

Information Technology, School Environment, Emotional Intelligence and Intellectual Intelligence simultaneously have a positive and significant effect on students' Learning Achievement at SMK Negeri 9 Padang. It was concluded that if Information Technology, School Environment, Emotional Intelligence and Intellectual Intelligence simultaneously increase, then Learning Achievement will also increase. In this case it can be concluded that the contribution of Information Technology, School Environment, Emotional Intelligence and Intellectual Intelligence to Learning Achievement is 45.5% and other variables influence the remainder.

Based on the conclusions above, the author will provide the following suggestions: It is hoped that the parties involved in improving learning achievement should increase students' knowledge of Information Technology, the convenience of Information Technology in learning itself.. The students there spend

more time playing than studying as usual. It is hoped that it can implement the proclaimed vision and mission. And how to apply good cultural values. For Further Researchers, It is hoped that future research can add other independent variables such as, School Culture, Family Environment, and so on or adding moderating variables to find out other variables that can influence and strengthen or weaken the dependent variable or also change the object other.

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