

Relationship between Mindfulness and Interest in Learning among Cognition of SMK Metta Maitreya Pekanbaru Students

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ABSTRACT

The study used stratified random sampling of 131 students from 195 SMK students. The research design was a quantitative correlational approach, associative hypothesis, and cross-sectional survey method. The instrument for collecting data was a closed questionnaire via Google Forms. The questionnaire results were tested through instrument testing of validity and reliability, classical assumptions, correlation analysis, and simple and multiple regression with a level of $\alpha = 0.05$. The results of data analysis: (1) There is a low, positive, significant relationship between mindfulness and cognition, the correlation value is 0.271, the coefficient of determination is 0.073, and the effective contribution is 5.420%; (2) There is a low, positive, significant relationship between interest in learning and cognition, the correlation value is 0.270, the coefficient of determination is 0.073, and the effective contribution is 5.346%; (3) There is a low, positive, significant relationship between mindfulness and interest in learning simultaneously with cognition, the correlation value is 0.328, the coefficient of determination is 0.108, and the total effective contribution is 10.766%. The study's results conclude that students' cognition can be improved through increased mindfulness and student interest in learning, either partially or simultaneously.

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Introduction

The rapid progress of science, technology, and information today is inseparable from the improvement and development of human thinking processes, thus providing real benefits for human survival (Juwantara, 2019:28). The more the human thinking process improves and the more creative it is, the more new innovations are created that bring convenience and comfort in all things. The process of human thinking is called cognition, including awareness, perception, reasoning, and consideration (Vygotsky, 1981 in Ghazi et al., 2016: 11). Cognition is easily interpreted as the acquisition of knowledge (Reed, 2007:2). Cognition is also called the ability to think (Weare, 2019:322).

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In its development, cognitive processes related to interest are closely linked to the level of intelligence (Khadijah, 2016: 12). Scientifically, it is confirmed that a person's cognitive development is the result of an increase in his thinking process obtained from knowledge (Ghazi et al., 2016: 11).

According to (Assaly and Smadi, 2015 in Osadi et al., 2017: 2) the acquisition of knowledge through the educational process is considered insufficient to meet the criteria for the development of science and technology. It takes the role of individuals who are able to think critically and creatively in supporting the growth of global society from various aspects. Most global education organizations pay deep attention to how to develop a higher order for students' level thinking skills, as well as increased learning to achieve good learning outcomes and achievements (Abduljabbar and Omar, 2015 in Osadi et al., 2017: 2).

Concerning students' cognitive abilities, researchers obtained literacy from previous research journals, articles, and books on how mindfulness and interest in learning affect a person's cognitive abilities. It attracts the interest of researchers to know and examine the relationship between mindfulness and interest in learning with cognition. Mindfulness was practiced more than 2,500 years ago and is as practical as it is today (Nyanaponika, 2014: 14) in his book "The Heart of Buddhist Meditation, The Buddha's Way of Mindfulness". Nyanaponika Thera conveys a deep belief in the systematic cultivation of right mindfulness, taught by The Buddha in Satipaṭṭhāna, which is a simple and effective method to practice developing the mind in the routine of daily life, especially to achieve the highest goal of the mind free from greed, hatred, and delusion (Nyanaponika, 2014:13).

Mindfulness has its roots in Buddhism. Mindfulness in the Pāli language is called Sati, meaning "attention or remembering", specifically called Sati-Sampajañña, which means "attention and clarity of understanding", said to be a "full awareness or intuitive awareness" (Sumedho, 2014 in Amaro, 2015: 65). There are four foundations in mindfulness or often called the four parts that make up mindfulness: body, feelings, mind, and mental formations (dhammas/categories of experience) (Goldstein, 2016: 11).

The researcher read the article *The Art of Mindful Living from Plum Village*; mindfulness practice is a technique to recognize and restore awareness of oneself, recognize and consciously understand what is being done and happening at the moment. Mindfulness practice paying attention to breathing, being aware of inhaling and exhaling, and being fully present in one's own activities. "Clearly aware of all activities from being silent, standing, walking, sitting, eating, drinking, seeing, talking, to sleeping" (D.II.292). Rohan Gunatillake, in his book "Modern Mindfulness: How to Be More Relaxed, Focused, and Kind While Living a Fast, Digital, Always on-World", said "a very modern mindfulness" is a simple thing like observing physical sensations in the body, such as when breathing, "Be mindful while inhaling and exhaling" (D.II.291), even the simple sensation of holding a book in one's hand feels very pleasant, we are aware of what we are doing at this time (Gunatillake, 2017:2).

Mindfulness research in the educational aspect, proves mindfulness meditation can improve cognitive skills (Lillard, 2011; Mirabai, 2011 in Karunananda et al., 2016: 23). Mindfulness training has a positive impact on a person's cognitive skills, including attention, memory, and other cognitive functions (Gunaratana, 1993; Kapleau, 1965; Teasdale, Segal, & Williams, 1995 in Chiesa et al.,

2011: 450). Recent findings by Dunning et al., 2018 in (Weare, 2019: 322) explained that full awareness can improve various aspects of executive function. Developing the ability to be mindful positively influences young learning and cognitive aspects (Klingbeil et al., 2017 in Weare, 2019: 322). Overall, the research results on mindfulness training can improve cognitive function from the basic level to a higher level (Wimmer et al., 2016: 3).

Students who have a high interest in learning will have a good understanding with high academic scores (Silvia, 2012; Black & Allen, 2016 in Ricardo & Meilani, 2017: 188), and students will have confidence in their abilities with high learning performance (Tang & Reynolds, 1993; Howard, Tang, & Austin, 2014 in Ricardo & Meilani, 2017: 189). Interest in learning from extracting behavioral learning data is connected with brain cognition (Chen et al., 2016: 5). Interest in learning is described as a motivational trigger for the desire and interest of students to be involved in acquiring knowledge (Hidi & Renninger, 2006; Sha, Schunn, Bathgate, & Ben-Eliyahu, 2016 in Ricardo & Meilani, 2017: 190).

Furthermore, the influence of student learning interest is related to memory function. Interest in learning strongly influences switching one's attention to recognize, store, and recall an object properly (Renninger & Wozniak, 1985 in Renninger & Riley, 2011: 358). Increased interest in learning also increases attention to improve the brain's performance in memory (Anderson, 1982 in Renninger & Riley, 2011: 359).

Based on the research literature that has been described in a brief summary of the background, it can be seen that mindfulness and interest in learning are related to one's cognition. Researchers focus on mindfulness and mindfulness training on cognition skills and the effect of learning interest on cognition. However, no researchers have paid attention to cognition that involves mindfulness and interest in learning together. It has not been studied before. Therefore, the research focuses on determining the relationship between mindfulness and interest in learning and cognition.

This research aims to contribute to improving student or individual cognition. Hence, students are fully aware of their actions and current conditions, making them more confident, active, creative, innovative, and insightful.

Methods

Types of Research

The research was carried out at the Metta Maitreya Private Vocational High School in Pekanbaru from February 2021 to October 2021. The reason for choosing was because of considerations to save time, effort, and money.

The research design uses a correlational quantitative approach. cross-sectional survey method, associative hypothesis, and parametric inferential statistical data analysis techniques. The correlational approach explains the relationship between variables. Mindfulness independent variables (X1), and Learning Interest (X2). Cognition dependent variable (Y). The relationship between variables is described in the model constellation figure 1.

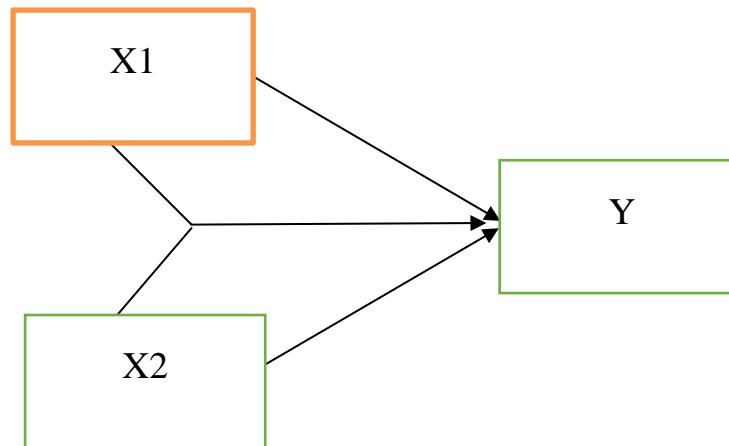


Figure 1 Constellation of Variable Relationships

H1 = X1 has a relationship with Y

H2 = X2 has a relationship with Y

H3 = X1 and X2 together have a relationship with Y

The population in this study is all elements in the object of research: All students of SMK Metta Maitreya Pekanbaru totaling 195 students which consists of 104 men (53.33%) and 91 women (46.67%), with the following distribution figure 2:

No.	Agama	Kelas																Total	
		X AK 1		X AK 2		X TKJ		XI AK		XI TKJ		XII AK		XII TKJ 1		XII TKJ 2			
		L	P	L	P	L	P	L	P	L	P	L	P	L	P	L	P		
1	Islam	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2	Kristen	0	1	0	0	2	0	0	1	1	0	1	1	0	0	0	0	0	7
3	Katolik	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4	Konghucu	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
5	Buddha	6	14	8	14	19	10	7	20	26	2	7	16	12	5	13	5	184	
6	Hindu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		6	16	8	14	21	10	7	21	28	3	8	17	13	5	13	5	195	
Total		22		22		31		28		31		25		18		18		195	

Figure 2 Distribution of Number of SMK Students based on class level

The sample in this study was taken using a stratified random sampling approach, divided into three levels of class X, class XI, and class XII. Hence, the representation in the population can characterize the right proportion (Fowler, 2009 in Creswell, 2014: 212). The sample size in this study uses the Yamane formula (Sugiyono, 2018: 143) with the following calculation method:

$$n = \frac{N}{1 + N(e)^2}$$

Note:

N = Population Size

n = Sample Size

e = 5% Sample Error Rate (Significance Level 0.05)

Yamane formula, N = 195 students, with a significance level of 0.05

$$n = \frac{195}{1 + 195 (0,05)^2}$$

$$n = 131$$

Based on the calculation above, a sample of 131 students was obtained. The sample distribution is 131 students divided into three grade levels. Calculations are carried out to determine the number of samples for each grade level with the formula below:

$$S = \frac{Ps}{N} t$$

Note:

S = Number of Samples

Ps = Number of samples respectively

N = Total Number of Population

t = Number of samples determined based on 95% precision

NO	CLASS	TOTAL STUDENTS	FORMULA	SAMPLE
1	X	75	$(75 / 195) \times 131$	50
2	XI	59	$(59 / 195) \times 131$	40
3	XII	61	$(61 / 195) \times 131$	41
TOTAL		195		131

Table 1 Number of SMK Students by level

Data Collection Technique

Data collection techniques and instruments are carried out online in the following order:

The first stage is setting the object of research on the students of SMK Metta Maitreya Pekanbaru. The second step is to determine the sample population using Stratified Random Sampling approach, divided into three levels of class X, class XI, and class XII using the Yamane formula with a significance level of 0.05%. The third stage, providing and distributing teaching materials for Buddhism and Moral Education to all students through the Google Classroom to be read as a reference for research instruments. The fourth stage is distributing questionnaires via Google form to all SMK students.

In the next stage, the results of the data scores will be analyzed with the help of SPSS 16.0 Statistics through three steps; The first is the instrument test (checks the validity of the items; the valid items will be tested again with the reliability of the test); The second step is the classical assumption test (normality, multicollinearity, heteroscedasticity, linearity), the third step are linear correlation analysis (simple linear correlation and multiple linear correlation) and linear regression analysis (analysis techniques of simple linear regression and multiple

linear regression). Linear regression analysis also calculates the effective contribution and the relative contribution of the independent variables to the dependent variable. After going through the three testing steps, the results show a positive relationship between mindfulness and interest in learning partially or simultaneously with the cognition of students at SMK Metta Maitreya Pekanbaru.

Data Analysis

The data analysis technique used in this study uses descriptive statistical techniques and parametric inferential statistics using SPSS 16.0. Through descriptive statistics, it can be seen, among other things, the data in the form of frequency distribution tables and histograms. Meanwhile, through parametric inferential statistics, which can be seen includes the standard deviation and variance as well as the distribution of data in the histogram frequency distribution table. Testing the requirements analysis before testing the hypothesis, first performed a normality test using the Kolmogorov-Smirnov technique, multicollinearity test, heteroscedasticity test, and linearity test. Lastly, data analysis for testing the associative hypothesis was carried out using simple and multiple linear correlation analysis techniques, simple linear regression analysis techniques, and multiple linear regression to find out and find relationships between variables. The statistical hypothesis of the research is as follows:

Statistical hypothesis 1 (H1)

$$H_0: \beta_{y1} \leq 0$$

$$H_a: \beta_{y1} > 0$$

H₀ = There is no relationship between mindfulness (X1) and cognition (Y)

H_a = There is a relationship between mindfulness (X1) and cognition (Y)

β_{y1} = Mindfulness pathway coefficient (X1)

Statistical hypothesis 2 (H2)

$$H_0: \beta_{y2} \leq 0$$

$$H_a: \beta_{y2} > 0$$

H₀ = There is no relationship between learning interest (X2) and cognition (Y)

H_a = There is a relationship between learning interest (X2) and cognition (Y)

β_{y2} = Coefficient of learning interest path (X2)

Statistical hypothesis 3 (H3)

$$H_0: \beta_{y1.2} \leq 0$$

$$H_a: \beta_{y1.2} > 0$$

H₀ = There is no relationship between mindfulness (X1) and learning interest (X2) with cognition (Y)

H_a = There is a relationship between mindfulness (X1) and learning interest (X2) with cognition (Y)

$\beta_{y1.2}$ = Mindfulness path coefficient (X1) and learning interest path coefficient (X2)

Findings

The research was conducted from February 2021 to October 2021. The objects of research were all 195 students of SMK Metta Maitreya Pekanbaru class of 2020-2021. This study used a quantitative approach with a correlational method. The research sample was taken using a Stratified Random Sampling approach, divided into three levels of class X, class XI, and class XII.

The first finding

Determining the number of samples from the total population is calculated using the Yamane formula with a significance level of 0.05, which is obtained a sample of 131 students. The sample for testing the instrument is 30 students outside the research sample. The questionnaire contains 124 items. Questionnaires returned are 162 questionnaires.

Questionnaire Tab		
Class	Sample	Result
X	50	71
XI	40	47
XII	41	44
Total	131	162

Table 2 Questionnaire Tabulation Results

Questionnaires that have been received are sorted based on the number of samples for each group. The samples received meet the research requirements. The samples are then tested for validity and reliability through the SPSS 16.0 tool. The results of the calculations are obtained in the table 2.

The second finding

The second finding is the result of data processing validity and reliability tests.

The results of the validity test of variable Y consisted of 43 valid items, the results of the validity test of variable X1 consisted of 29 valid items, and the results of the validity test of variable X2 consisted of 15 valid items. A total of 87 valid items were used for the reliability test (table 3).

Reliability Test			
Variable	r_{count}	$r_{\text{table } 0,05}$	Additional information
X1	.906	.361	Reliable
X2	.812	.361	Reliable
Y	.946	.361	Reliable

Table 3 Reliability Test Results

The results of the reliability test for the X1 variable are 0.906; the X2 variables are 0.812; the Y variables are 0.946; all > 0.361. All data meets the requirements used for testing the classical assumptions or data analysis requirements.

The third finding

The test results of the classical assumptions/data analysis requirements are carried out through four stages.

First, the normality test using a histogram found that the data is normally distributed, marked by a bell-shaped and symmetrical distribution pattern. Furthermore, the normality test with p-plot distribution found that the data is normally distributed on the diagonal line (not spread) and follows the direction of the diagonal line (positive). Finally, the normality test using the one-sample Kolmogorov-Smirnov test obtained a significance value of 0.238 > 0.05. The test results show that the data is normally distributed.

Second, the multicollinearity test for variables X1 and X2 obtained a tolerance value of .0873 and VIF of 1.145. The test results show that there is no multicollinearity.

Third, the glejser heteroscedasticity test for the mindfulness variable (X1) is 0.413, and the learning interest variable (X2) is 0.878. The significance value (sig) between the independent variables and the residual absolute value > 0.05 do not show signs of heteroscedasticity.

Fourth, the linearity test between the cognition variable (Y) and the mindfulness variable (X1) obtained a sig. deviation from the linearity value of 0.463. The linearity test between the cognition variable (Y) and learning interest variable (X2) obtained a sig. deviation from the linearity value of 0.820. The results of the linearity test show a significance value (sig). deviation from linearity > 0.05; there is a linear relationship between variable Y and variable X1, as well as a linear relationship between variable Y and X2.

The fourth findings

Further data are tested through linear correlation analysis (simple and multiple correlation analysis) to determine the direction and whether there is a relationship between the independent variables and the dependent variable.

A simple linear correlation analysis of variables X1 and Y finds that the Pearson correlation results show a significance value of 0.002 < 0.05 with a Pearson

correlation value of 0.271, and a correlation between mindfulness and cognition variables is found with a relationship of 0.271.

A simple linear correlation analysis of variables X2 and Y finds that the Pearson correlation calculation results show a significance value of $0.002 < 0.05$ with a Pearson correlation value of 0.270, and a correlation between learning interest and cognition variables is found with a relationship of 0.270.

In the multiple linear correlation analysis between variables X1 and variable X2 with variable Y, it is found that the results of the Pearson correlation calculation show a significance value of $0.001 < 0.05$ with a Pearson correlation value of 0.328. A correlation of mindfulness variables and learning interest variables simultaneously with cognition variables of 0.328 is also found.

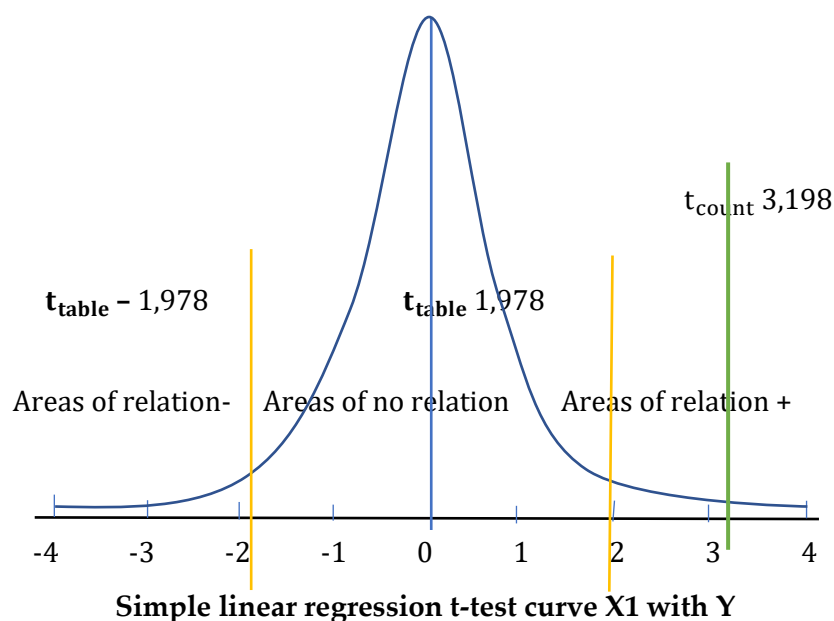
The fifth finding

The fifth finding results from simple and multiple linear regression analysis test calculations to determine the strength of the relationship between the independent variable and the dependent variable.

The results of simple linear regression analysis test variable X1 with variable Y from the Anova table is 10,228 with a significance level of $0.002 < 0.05$. The regression model can be used to predict the dependent variable (cognition). In other words, the independent variable X1 (mindfulness) has a relationship with the dependent variable Y (cognition).

The simple linear regression analysis test for variable X1 with variable Y from the coefficient table finds a constant value (a) of 140.985 with a mindfulness value (b) or a regression coefficient of 0.391. The regression coefficient is positive, and the direction of the relationship between variable X1 (mindfulness) and variable Y (cognition) is positive.

Based on the simple linear regression analysis test variable X1 with variable Y table model summary of the coefficient of determination, it is found that the correlation value (R) was 0.271, and the output coefficient of determination (R Square) was 0.073. It means a positive and significant relationship exists between the independent variable (mindfulness) and the dependent variable (cognition) of 7.3%.

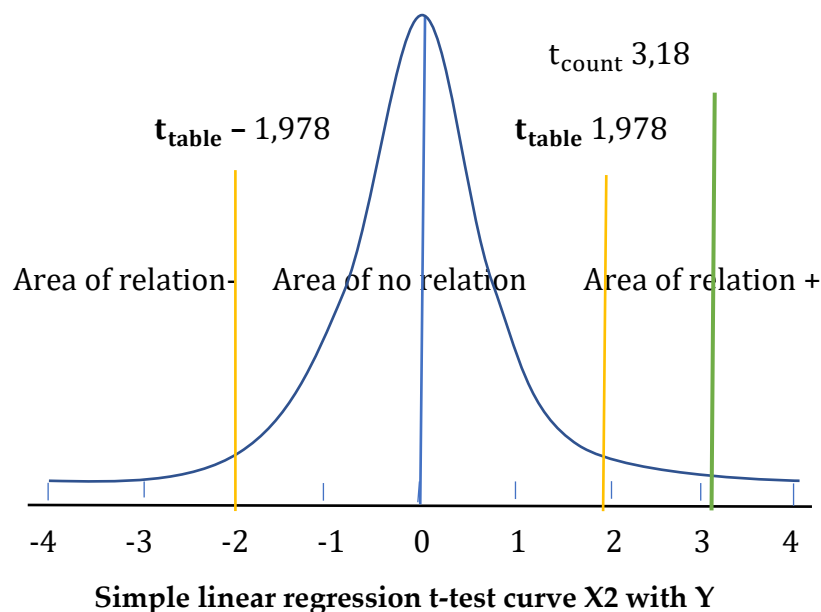


Based on t value : $t_{\text{count}} 3,198 > t_{\text{table}} 1,978$, hypothesis H0 is rejected, hypothesis Ha is accepted, and variable X1 (mindfulness) has a positive and significant relationship with variable Y (cognition).

Based on the results of simple linear regression analysis test variable X2 with variable Y anova table, it is known that F_{count} is 10.129 with a significance level of $0.002 < 0.05$. The regression model can predict the dependent variable (cognition). In other words, the independent variable X2 (interest in learning) has a relationship with the dependent variable Y (cognition).

The results of the simple linear regression analysis test variable X2 with variable Y the coefficient table is that the constant value (a) is 139.176 with the value of the interest in learning (b) or the regression coefficient is 0.693. The regression coefficient is positive, so it is stated that the direction of the relationship between the X2 variable (learning interest) and the Y variable (cognition) is positive.

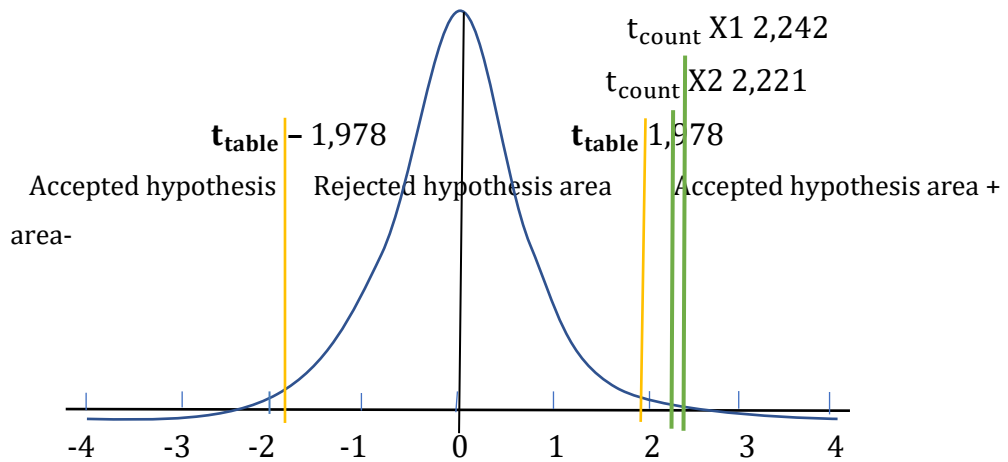
From the results of the simple linear regression analysis test variable X2 with variable Y table model summary of the coefficient of determination, it was found that the correlation value (R) was 0.270. The output coefficient of determination (R Square) is 0.073. A positive and significant relationship exists between the independent variable (interest in learning) and the dependent variable (cognition) of 7.3%.



Based on t value: $t_{\text{count}} 3,183 > t_{\text{table}} 1,978$, Hypothesis H0 is rejected, Hypothesis Ha is accepted, and variable X2 (interest in learning) has a positive and significant relationship with variable Y (cognition).

The multiple linear regression test of the variables X1 (mindfulness) and X2 (interest in learning) simultaneously with the variable Y (cognition) in testing the H1 and H2 hypotheses using the attached t-test on the multiple linear regression t-test curve results in the first hypothesis testing that H1 significance value X1 (mindfulness) $0.027 < 0.05$, and t-test value $t_{\text{count}} 2,242 > t_{\text{table}} 1,978$. The

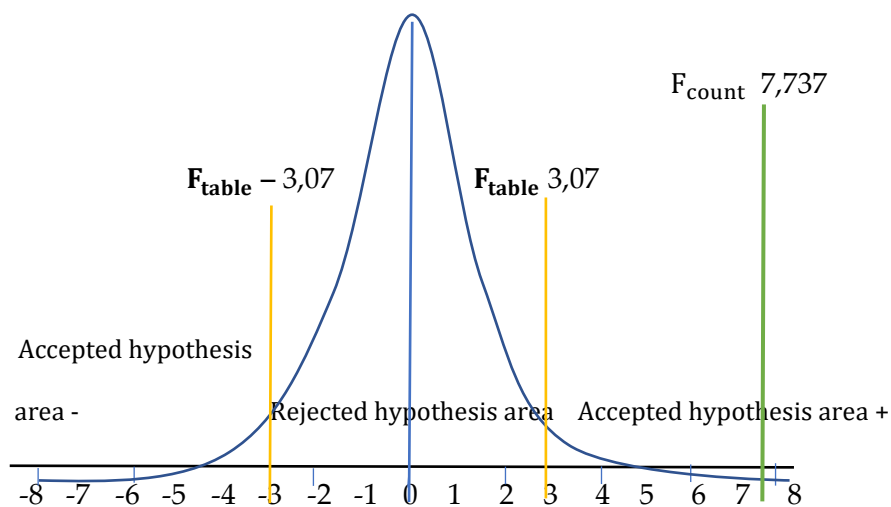
measurement results show that the H1 hypothesis is accepted. A positive and significant relationship exists between variable X1 (mindfulness) and variable Y (cognition). The results of testing the second hypothesis H2 significance value X2 (interest in learning) $0.028 < 0.05$, and the t-test value is $t_{count} 2,221 > t_{table} 1,978$. The measurement results show that the H2 hypothesis is accepted; a positive and significant relationship exists between the X2 variable (learning interest) and the Y variable (cognition).



Multiple linear regression t-test curve

Testing the third hypothesis, H3, using the F test, results in a significance value of X1 (mindfulness) and X2 (interest in learning) simultaneously $0.001 < 0.05$, and the value of the F test is $F_{count} 7,737 > F_{table} 3,07$. $7.737 > 3.07$. The measurement results show that hypothesis H3 is accepted. There is a positive and significant relationship simultaneously between variable X1 (mindfulness) and X2 (interest in learning) among variable Y (cognition).

Multiple linear regression F test curve



The results of the model summary table for the coefficient of determination find that the value of the correlation/relationship (R) is 0.328. The output coefficient

of determination (R Square) is 0.108. There is a simultaneous relationship between the independent variables (mindfulness and interest in learning) and the dependent variable (cognition), and a correlation of 0.328, and the coefficient of determination is 10.8%.

The following is a summary of the findings of the linear correlation test and linear regression test in the tabular form described above:

Results of Linear Correlation Test and Linear Regression Test

Variables	Coefficient Correlation (r)	Coefficient Regression (β)	R_{square}	R_{square} X1 + X2
Mindfulness (X1)	.271	.200	.073	.108
Minat Belajar (X2)	.270	.198	.073	

X1 effective contribution is 5.420%, and X2 effective contribution is 5.346%. Total effective contribution of 5.420%+5.346%=10.766%. X1 relative contribution is 50.34% of 100%, and X2 relative contribution is 49.66% of 100%. The total relative contribution of 50.34% + 49.66% = 100%.

Discussion

The relationship between mindfulness (X1) and cognition (Y)

This study found the results of the relationship between mindfulness and cognition in the linear regression test of the anova table of F_{hitung} is 10,228, with a significance level of $0.002 < 0.05$. It explains that the regression model can be used to predict the dependent variable (cognition). Furthermore, the results of the linear regression test of the coefficient table found a constant value (a) of 140.985 with a mindfulness value (b) or a regression coefficient of 0.391. These results explain that a constant of 140.985 is a consistent value of the cognition variable of 140.985. Meanwhile, the regression coefficient X of 0.391 means that for every 1% addition of the mindfulness value, cognition increases by 0.391 units at a constant of 140.985. The results of a significance value of $0.002 < 0.05$ with a result of $t_{count} 3.198 > t_{table} 1.978$ explain that the significance value is smaller than the probability value and the value t_{count} is greater than the value of t_{tabel} . Based on this result, it is known that the regression coefficient is positive, so it is proven that there is a positive and significant relationship between variable X1 (mindfulness) with variable Y (cognition).

Then, based on the calculation of the linear regression test, the coefficient of determination of the model summary table value of the correlation/relationship (R) is 0.271. The output results obtained a coefficient of determination (R Square) of 0.073, meaning that the magnitude of the relationship between the independent

variable (mindfulness) and the dependent variable (cognition) with a correlation of 0.271 obtained a value of 7.3%. Finally, the results of the calculation of the effective contribution of the mindfulness variable to cognition are 5.420%.

As a conclusion from the findings of the research testing results, it can be proven that variable X1 (mindfulness) has a positive and significant relationship with variable Y (cognition) with a correlation coefficient of 0.271, obtained a coefficient of determination of 0.073 and an effective contribution of 5.420%.

Based on the findings of this study, it is known that the mindfulness variable has a positive relationship with the cognition of students at SMK Metta Maitreya Pekanbaru. It explains that the higher mindfulness possessed by Metta Maitreya Pekanbaru Vocational High School students, the more increased the cognition of Metta Maitreya Pekanbaru Vocational students. Conversely, the lower mindfulness possessed by Metta Maitreya Pekanbaru Vocational High School students, the lower the cognition of Metta Maitreya Pekanbaru Vocational students. It is concluded that the cognition of the Metta Maitreya Pekanbaru Vocational High School students can be improved by increasing the mindfulness of Metta Maitreya Vocational High School students in Pekanbaru.

The results of this study follow previous studies that mindfulness improves cognitive functions such as attention, executive function, and working memory (Chiesa, Calati, & Serretti, 2011 in Maynard et al., 2017: 14). Mindfulness improves core cognitive skills that support academic and social functioning (Dunning et al., 2019: 245).

Mindfulness training can change the structure and function of the brain, including increasing blood to the cerebral cortex area (Davidson, 2008 in Maynard et al., 2017: 14). This causes an increase in the concentration of gray matter in the part of the brain that specifically handles emotion regulation, as well as being involved in the learning process and memory function (Holzer et al., 2011 in Maynard et al., 2017: 14).

Research by Klingbeil and colleagues in a recent meta-analysis shows strong evidence that the development of mindfulness abilities has a positive influence on young learning and cognitive aspects, such as meta-cognition, cognitive pressure, academic appeal, and attention (Klingbeil et al., 2017 in Weare, 2019: 322). Further to the findings summarized in the latest review from Dunning et al., 2018, it is stated that mindfulness can improve various aspects of human executive function (Dunning et al., 2018 in Weare, 2019: 322).

The relationship between learning interest (X2) and cognition (Y)

This study found a relationship between interest in learning and cognition in the linear regression test of the anova table of $F_{\text{count}} 10,129$ with a significance level of $0.002 < 0.05$. These results explain that the regression model can be used to predict the dependent variable (cognition). Furthermore, from the results of the linear regression test calculation of the coefficient table, a constant value (a) of 139.176 was found with interest in learning (b) or a regression coefficient of 0.693. These results also explain that a constant of 139.176 means a consistent value of the cognition variable of 139.176. Meanwhile, the X regression coefficient of 0.693 indicates that for every 1% increase in the value of interest in learning, cognition increases by 0.693 units at a constant of 139.176. The results of a significance value

of $0.002 < 0.05$ with a result of $t_{\text{count}} 3.183 > t_{\text{table}} 1.978$ explain that the significance value is smaller than the probability value, and the value is greater than the value of this result. It is known that the regression coefficient is positive, so it is proven that there is a positive and significant relationship between variable X2 (study interest) and variable Y (cognition).

Then, based on the results of the calculation of the linear regression test, the coefficient of determination of the model summary table, it is found a correlation value (R) of 0.270, and the output results obtained a coefficient of determination (R Square) of 0.073, meaning that there is a positive and significant relationship between the independent variable (interest in learning) and the dependent variable (cognition) and a correlation of 0.270 obtained a value of 7.3%. Lastly, the calculation results of the effective contribution of the learning interest variable with cognition are 5.346%.

The conclusion from the findings of research test is that variable X2 (interest in learning) has a positive and significant relationship with variable Y (cognition) with a correlation coefficient of 0.270, a coefficient of determination of 0.073, and a practical contribution of 5.346%.

Based on the results of this study, the variable interest in learning has a positive relationship with the cognition of students at SMK Metta Maitreya Pekanbaru. It explains that the higher learning interest possessed by Metta Maitreya Pekanbaru Vocational High School students can improve the cognition of SMK Metta Maitreya Pekanbaru students. Conversely, the lower learning interest possessed by SMK Metta Maitreya Pekanbaru students can reduce the cognition of Metta Maitreya Pekanbaru Vocational students. It is concluded that the cognition of students at SMK Metta Maitreya Pekanbaru can be improved by increasing the learning interest of students at SMK Metta Pekanbaru.

The results of this study are in accordance with previous studies, such as Renninger and Riley's (2011) research (Piaget, 1968 in Renninger & Riley, 2011: 358) regarding interest in motivation and cognition, "Interest is the right orientation for every an act of mental assimilation." Interest in learning is a psychological factor that has been empirically proven to positively impact academic achievement (Kpolovie, Joe, & Okoto, 2014 in Ricardo & Meilani, 2017: 188).

In Renninger and Wozniak's (1985) study regarding the effect of student learning interest on memory functions, such as switching attention, recognition and storage, and recalling, it was concluded that learning interest has a strong influence on shifting one's attention in recognizing, storing, recalling in memory the object well (Renninger & Wozniak, 1985 in Renninger & Riley, 2011: 358). Increasing interest in learning will strengthen attention to improve the brain's performance in memory (Anderson, 1982 in Renninger & Riley, 2011: 359).

Furthermore, research by Ricardo and Meilani (2017) explains that students who have a high interest in learning will have a good understanding with high academic scores (Silvia, 2012; Black & Allen, 2016 in Ricardo & Meilani, 2017: 188) and have confidence in their abilities and high learning performance (Tang & Reynolds, 1993; Howard, Tang, & Austin, 2014 in Ricardo & Meilani, 2017: 189). Interest in learning from extracting behavioral learning data is connected with brain cognition (Chen et al., 2016: 5). Interest in learning is described as a motivational

trigger for the emergence of the desire and interest of students to be involved in activities to acquire knowledge (Ricardo & Meilani, 2017: 190).

The relationship between mindfulness (X1) and learning interest (X2) among cognition (Y)

This study found the relationship between mindfulness and interest in learning and cognition from the multiple linear regression test results with a correlation coefficient of $R_{x1.x2.y}$ of .328, a coefficient of determination of R_{square} .108, and a total effective contribution of 10.766%. These results show that the variable mindfulness (X1) and interest in learning (X2) have a correlation of 0.328 with the total effective contribution of all independent variables to the dependent variable of 10.766% (10.8%). From the findings of these results, it is proven that there is a positive and significant relationship, but not too strong, between mindfulness and learning interest variables with the cognition of SMK Metta Maitreya Pekanbaru students.

The total effective contribution of 10.766% consists of the effective contribution of the mindfulness variable 5.420% and the effective contribution of the interest in learning variable 5.346%. These findings explain that the relationship between mindfulness (X1) and learning interest (X2) is equivalent and balanced with cognition (Y).

The following results of the multiple linear regression test of the first hypothesis coefficient table H1 found a significance value of X1 (mindfulness) of $0.027 < 0.05$, with a t-test value of $t_{count} 2.242 > t_{table} 1.978$. If the significance value is $<$ from the probability value and the t-test results $t_{count} >$ than t_{table} then the results of this test show that the H1 hypothesis is accepted, meaning that there is a positive and significant relationship between variable X1 (mindfulness) and variable Y (cognition).

Then, the results of testing the second hypothesis H2 obtained a significance value of X2 (interest in learning) $0.028 < 0.05$, and the t-test value was $t_{count} 2.221 > t_{table} 1.978$. If the significance value is $<$ the probability value and the t-test results $t_{count} >$ than t_{table} , then the results of this test show that the H2 hypothesis is accepted, meaning that a positive and significant relationship is found between variable X2 (interest in learning) and variable Y (cognition).

Furthermore, the findings of the multiple linear regression test results of the third hypothesis anova table H3 with the F-test obtained a significance value of X1 (mindfulness) and X2 (interest in learning) together (simultaneously) of $0.001 < 0.05$, with an F test value of $F_{count} 7.737 > F_{table} 3,07$. The findings of this test show that hypothesis H3 is accepted, meaning that there is a positive and significant relationship simultaneously between variables X1 (mindfulness) and X2 (interest in learning) with variable Y (cognition).

Finally, the results of the multiple linear regression test of the model summary table of the coefficient of determination explained the magnitude of the correlation/relationship (R) of 0.328. The output results obtained a coefficient of determination (R Square) of 0.108, meaning that a simultaneous relationship was found between the independent variables (mindfulness and interest in learning)

and the dependent variable (cognition), and a correlation of 0.328 obtained a value of 10.8%.

Finally, the results of the multiple linear regression test of the model summary table of the coefficient of determination explain the magnitude of the correlation/relationship (R) of 0.328. The output results obtained a coefficient of determination (R Square) of 0.108, meaning that a simultaneous relationship is found between the independent variables (mindfulness and interest in learning) with the dependent variable (cognition), and a correlation of 0.328 obtained a value of 10.8%.

In conclusion, the results of multiple linear regression testing found a positive and significant (but not very strong) relationship between variables X1 (mindfulness) and variable X2 (interest in learning) simultaneously with variable Y (cognition) with a correlation coefficient value of 0.328 obtained a coefficient value determination of 0.108 and a total effective contribution of 10.766%. It is known that the coefficient value of determination and the effective contribution value is the same. It proves that the results of the research test are correct and right.

Based on the results of this study, it was found that the mindfulness and learning interest variables had a positive relationship with the cognition of students at SMK Metta Maitreya Pekanbaru. These results explain that the higher mindfulness and learning interest of the Metta Maitreya Pekanbaru Vocational High School students can improve the cognition of the SMK Metta Maitreya Pekanbaru students. On the contrary, the lower mindfulness and learning interest of the Metta Maitreya Pekanbaru Vocational students can reduce the cognition of the Metta Maitreya Pekanbaru Vocational students. It was concluded that the cognition of SMK Metta Maitreya Pekanbaru students could be improved by increasing the mindfulness and learning interest of the students of SMK Metta Pekanbaru.

The results of this study are in accordance with previous studies that mindfulness has been shown to improve cognitive functions such as attention, executive function, and working memory (Chiesa, Calati, & Serretti, 2011 in Maynard et al., 2017: 14). Mindfulness enhances core cognitive skills that are useful in supporting academic and social functioning (Dunning et al., 2019: 245). (Piaget, 1968 in Renninger & Riley, 2011: 358) mentioned the connection between interest, motivation, and cognition: "Interest is the correct orientation for any act of mental assimilation." Interest in learning is a psychological factor that has been empirically proven to positively impact academic achievement (Kpolovie, Joe, & Okoto, 2014 in Ricardo & Meilani, 2017: 188).

Mindfulness training can change the structure and function of the brain, including increasing blood flow to the cerebral cortex area (Davidson, 2008 in Maynard et al., 2017: 14). It results in an increase in the concentration of gray matter in the part of the brain that particularly handles regulation emotions, as well as being involved in the learning process and memory function (Holzel et al., 2011 in Maynard et al., 2017: 14). In Renninger and Wozniak's (1985) study regarding the effect of student learning interest on memory functions, such as: shifting attention, recognition and storage, and recalling, it was concluded that interest in learning has a strong influence on shifting one's attention in recognizing an object and storing it in memory and can remember the object well (Renninger & Wozniak, 1985 in Renninger & Riley, 2011:358).

Research by Klingbeil and colleagues in a recent meta-analysis shows strong evidence that the development of mindfulness abilities has a positive influence on young learning and cognitive aspects, such as meta-cognition, cognitive flexibility, academic achievement, and attention (Klingbeil et al., 2017) in (Weare, 2019: 322). In line with Silvia's research, 2012; Black & Allen, 2016, stated that students with a high learning interest would have a good understanding by achieving good academic scores (Silvia, 2012; Black & Allen, 2016 in Ricardo & Meilani, 2017: 188). Further to the findings summarized in a recent review from Dunning et al., 2018, it is stated that mindfulness can improve various aspects of human executive function (Dunning et al., 2018 in Weare, 2019: 322).

Other evidence states that mindfulness in educational aspects can improve cognitive skills (Lillard, 2011; Mirabai, 2011 in Karunananda et al., 2016: 23), can increase students' cognitive control (Tang et al., 2012 in Vickery & Dorjee, 2016: 2), and provide positive results on cognitive control and regulation themselves (Zelazo and Lyons, 2012 in Vickery & Dorjee, 2016: 2). It results in students' interest in engaging in knowledge acquisition activities (Hidi & Renninger, 2006; Sha, Schunn, Bathgate, & Ben-Eliyahu, 2016 in Ricardo & Meilani, 2017: 190).

Interest in learning from extracting behavioral learning data is connected with brain cognition (Chen et al., 2016: 5). Increasing interest in learning will increase attention, and hence the brain's performance in memory will be better (Anderson, 1982 in Renninger & Riley, 2011: 359). Overall, the research results of mindfulness and interest in learning together can improve cognitive function.

The study's findings show that the correlation between mindfulness and cognition is comparable to the correlation between interest in learning and cognition. These results imply that both variables of mindfulness and interest in learning have an equal, strong, and essential contribution to improving and developing students' cognitive abilities.

Conclusion

This research can be carried out properly in less than one year when the condition of the Covid 19 pandemic is still hitting the city of Pekanbaru and almost all over the world. This condition causes the learning method to be carried out online, but based on the results of research on a conceptually quantitative approach with the correlational method, it is known that online learning can also improve students' cognitive abilities with the findings:

Low, positive, and significant relationship between mindfulness and cognition with a correlation of 0.271, a coefficient of determination of 0.073, and an effective contribution of 5.420%

Low, positive, and significant relationship between learning interest and cognition with a correlation of 0.270, a coefficient of determination of 0.073, and an effective contribution of 5.346%

Low, positive, and significant relationship between mindfulness and interest in learning simultaneously among cognition with a correlation of 0.328, a coefficient of determination of 0.108, and a total effective contribution of 10.766%.

Mindfulness variables with cognition variables and the relationship between learning interest variables and cognition variables have an equivalent and commensurate relationship/correlation.

Based on the findings above, it can be concluded that the theories and references that underlie this research can be verified empirically. Online learning conditions going on for more than one year bring changes in learning, but students can still have positive implications for students' cognitive abilities. Students remain mindful of the ongoing conditions inside and outside of learning. It is hoped that after the passing of the Covid-19 pandemic, learning methods can be carried out again in offline form or with a blended method between offline and online which certainly encourages mindfulness and increases interest in student learning. It can undoubtedly increase students' cognitive abilities/skills, which impact their success and future well-being.

The results of this correlational quantitative method research have answered the researchers' questions and hypotheses positively. If there is no longer a Covid-19 pandemic, learning can be carried out again offline or blended. It does not rule out the possibility that research can be developed with a quantitative approach to the experimental method (quasi-experimental), which is expected to provide better results from this study.

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