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THE CORRELATION OF LEARNING INDEPENDENCE ATTITUDES AND STUDENT'S LEARNING ACHIEVEMENT ON PHYSICS LEARNING BASED-PORTFOLIO

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Abstract

This study aimed to determine correlation between learning independence attitudes and student's learning achievement. Type of this research is a correlation study to detect the connection of learning independence attitude's variance in relation to learning achievement variance. This study used an attitude scale to measure the student's learning independence attitude and objective multiple-choice questions to measure the student's learning achievement. The results showed that there is a positive correlation (unidirectional) and significant betweenthe learning independence attitude and learning achievement. This means that the better student's learning independence attitude, it will be the better students learning achievement. The attitude of learning independence contributed to 40.96% of students learning achievement.

Keywords: Learning Independence Attitude, Learning Achievement.

INTRODUCTION

Education is a conscious and planned effort to create an atmosphere of learning and learning process so that the students are actively developing their potential to have self-control, personality, intelligence, and process intelligence needed in life. In addition, one of the functions and objectives of national education is to form an independent individual, primarily independence in learning (UU Sisdiknas No. 20 tahun 2003).

The learning independence has become one of the attitude aspect in character education. More specifically about the learning independence attitude, the government in the Peraturan Menteri Pendidikan Nasional No. 41 tahun 2007 explained that the learning independence attitudeis an attitude on the individuals to learn with their own initiative in an effort to internalize knowledge without dependent or get direct guidance from others.

According to Listyani (2010), there are six indicators of learning independence attitudes, namely: 1. Independence of others, 2. Have confidence, 3. Being disciplined, 4. Have sense of responsibility, 5. Being based on own initiative, and 6. Doing self-control.

The study result of a preliminary research conducted in class X in one of the state high school in Bandung about thestudent'slearning independence attitude when following the program of physics learning, showed that:

1. The student's responsibility in learning is still less, this can be seen from the data showed that only about 36,4% students who feel themselves fully pay attention to the learning process. In addition, in doing the homework assignments (PR), only about 15.1% of students take full responsibility for doing it.
2. The students lack confidence when following the learning process. It can be seen from the data that only 6.1% of students actively follow the learning process.
3. The student's initiative attitude in learning is still very low. This can beseen from the data that when there is no PR, only about 9.1% of students who take the initiative to study physics independently. Another thing can be seen from only 9.1% of students who study physics first before the lesson.

The results of preliminary research showed the student's learning independence attitude is still less. The lack of initiative, responsibility, discipline, and confidence in learning is believed to affect the student's poor performance in learning. This can be seen from the lack of student's learning achievement, especially on the subject

of physics. In general, the learning achievement in physics subjects is ranked lowest compared to other subjects.

Tahar (2006), in his research concluded that the higher of learning independence attitudes on one person, allowing that person to achieve more higher learning outcomes. The study sample of Tahar (2006)was the students of long distance education who should have an attitude of learning independence.

The correlation of learning independence attitudes, today the students are required to have a good attitude of learning independence as like as has been proclaimed by the government in the form of character education. The learning independence attitude in students is believed to have an impact on student's learning achievement. For that, in this study will be studied about the student's learning independence attitude, learning achievement obtained by the students, and the correlation between the student's learning independence attitudes with the learning achievement that they can achieved.

To support the research about The Correlation between The Learning Independence Attitude and Learning Achievement, used the portfolio-based learning. This learning is chosen because it is believed to contribute to the formation and improvement of learning independence attitudes. Trianto (2010) mentioned that portfolio-based learning provides a good contribution in the formation of learning independence attitudes, such as independence on others, responsibility, self-evaluation ability, and behave on their own initiative in learning.

Based on the above description, this study would like to examine the correlation between the learning independence attitudes and learning achievement on physics learningbased-portfolio.

METHOD

This study used the descriptive research method with correlation research type. The correlation research detects thevariances of a factor is related to the variances in one or more other factors based on the correlation coefficient (Panggabean, 1996). The main aspect in this research is to know the correlation between the learning independence attitudes possessed by the students and the learning achievement that they obtained. Here is the research design used.

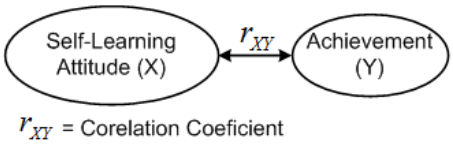

Figure 1. Research Design

This study used two types of instruments, namely:

1. Test

The test consists of 20 items of multiple choice questions. The test is used forknowing the students achievement.

2. Non-test (attitude scale)

The non-test instrument in the form of attitude scale is taken from the journal of instrument development's learning independence attitude written by Listyani (2008) as shown in Table 1.

Table 1. The List of Learning IndependenceAttitudes's Scale

No	Indicators of Independence Learning	Statements	Number
1	Independence on others	I learned under the control of others	1 (-)
		I improved my learning achievement because of encouragement from others.	4 (-)
		I chose my own learning strategy.	6 (+)
		I completed schoolwork according to my own ability.	16 (+)
2	Have confidence	I have confidence to achieve my learning goals.	8 (+)
		I do not have confidence that I am able to overcome the problems or obstacles that I face in my learning activities.	10 (-)
		I dare to express an opinion that is different from the opinions of others.	17 (+)
3	Being disciplined	I always make plans for my learning.	11 (+)
		I'm not trying to be in class on time	12 (-)
		I always collect schoolwork on time.	18 (+)
4	Have a sense of responsibility	I challenged myself to keep the spirit in learning.	7 (+)
		I am not trying to implement my best learning plan.	13 (-)
		I was able to focus attention on learning activities.	14 (+)
5	Being based on my own initiative	I think consciously of my own desires.	2 (+)
		I act consciously of my own will.	3 (+)
		I do not plan my own learning activities.	5 (-)
		I do the exercises, though not as a school assignment.	20 (+)
6	Doing self-control	I believe that my learning activities ultimately impact on myself.	9 (+)
		I do not evaluate my learning outcomes.	15 (-)
		I look closely at the increase and decrease in my learning outcomes.	19 (+)

Here are the steps to determine the relationship of learning independence attitudes and student's learning achievement (Panggabean, 1996):

1. Testing The Normality of Data to be Correlated

The normality test is conducted to determine the normality of the two variables. If both are normally distributed, then the linearity test between two variables through the regression linearity test. If the second or one of the variables is not normally distributed, then the correlation coefficient calculation using Phi Coeficient (φ) technique.

2. Testing The Regression Linearity

The regression linearity test is performed when the variables are normally distributed. If the results of linearity testshow the line equation of linear regression, then the calculation technique of correlation coefficient using the Product Moment technique. If not linear, the calculation technique of correlation coefficient using Phi Coeficient.

3.Calculating The Correlation Coefficient

a. Product Moment Correlation

The technique equation of Product Moment's correlation coefficient that will be used,

$$r_{xy} = \frac{N.\sum XY - (\sum X)(\sum Y)}{\sqrt{\left(N.\sum X^2 - (\sum X)^2\right)\left(N.\sum Y^2 - (\sum Y)^2\right)}} \quad (1)$$

b. The Correlation of Phi Coeficient (φ)

To calculate the correlation coefficient using Phi Coeficient (φ) technique, three steps are needed as follows:

1. Creating the variables to be correlated into discrete variables consisting of two categories using the average technique.

2. Creating 2x2 contingency table as shown in Table 2.

Table 2. The Table of 2x2 Contingency table

The Attitudes of Independence Learning	**Learning Achievement**		**Total**
	Upper Group	**Lower Group**	
Positive Group	A	B	A + B
Negative Group	C	D	C + D
Total	A+C	B+D	**A + B + C + D**

3.Calculating the correlation coefficients with the equationas follows :

$$r_{\phi} = \frac{A.D - B.C}{\sqrt{(A+B)(A+C)(B+D)(C+D)}} \quad (2)$$

The value criteria of correlation coefficient can be interpreted in Table 3 below :

Table 3. The Interpretation of Correlation Coefficient

R value	Interpretation
0,80 < r ≤ 1,00	Very high
0,60 < r ≤ 0,80	High
0,40 < r ≤ 0,60	Enough
0,20 < r ≤ 0,40	Low
0,00 < r ≤ 0,20	Very low

Arikunto (2011)

The r correlation value of the calculation result (r_{count}) is compared with the r value in the table (r_{table}). If $r_{count} > r_{table}$, this means that there is a positive relationship (unidirectional) between the student's learning

independence attitudes and the learning achievement. If $r_{count} < r_{table}$, vice versa.

4. Testing Significance of Correlation Coefficients

The significance test of correlation coefficient with Product Moment technique, with the equation

$$t = \sqrt{\frac{r^2(N-1)}{(1-r^2)}} \qquad (3)$$

The t value of the calculated result (r_{count}) is compared with the t value in the table (t_{table}). If the value of $t_{count} > t_{table}$, then there is no significance of the relationship between the attitudes of learning independence and the learning achievement, and vice versa.

If the calculation of correlation coefficient using Phi Coeficient technique, then the significance test is conducted through equation :

$$\chi^2 = r_\phi^{\,2}.N \qquad (4)$$

χ^2 of the counting result (X^2_{count}) is compared with the χ^2 value in the table (X^2_{table}). If the value of $X^2_{count} > X^2_{table}$, then there is no significance of the correlation between the attitudes of learning independence and the learning achievement, and vice versa.

The attitude contribution of learning independence toward the learning achievement is known through the coefficient equation of determination, namely:

$$KD = r^2 x100\% \qquad (5)$$

The coefficient value of determination shows the attitude contribution of learning independence toward the student's learning achievement.

RESULTS AND DISCUSSION

1. Attitude of Learning Independence

The Attitude score of student's learning independence can be seen in Table 4.

Table 4. Distribution of Independence of Learning's AttitudeScores

Interval of Score	Number of Student	Percentage	Interpretation
61-65	5	16.13%	Below of Average
66-70	5	16.13%	
71-75	7	22.58%	Average
76-80	6	19.35%	Above of Average
81-85	4	12.90%	
86-90	4	12.90%	

The average group is a group of students who have a score of learning independence attitudes around the average score, that is equal to 74.94.

The attitudes of learning independence in this research consists of six indicators, namely: 1. Independence of others, 2. Have confidence, 3. Being disciplined, 4. Have sense of responsibility, 5. Being based on own initiative, and 6. Doing self-control.

Table 5 shows the scores of student's learning independence on each indicator.

Table 5. The Attitude of Learning Independence on Each Indicator

No	Indicators	Ideal Score	Actual Score	Percentage	Category
1	Independence of others	620	454	73,22%	Good
2	Have confidence	465	356	76,56%	Good
3	Being disciplined	465	357	76,77%	Good
4	Have sense of responsibility	465	355	76,34%	Good
5	Being based on own initiative	620	459	74,03%	Good
6	Doing self-control	465	355	76,34%	Good
Total		3100	2336	75,35%	Good

Based on Table 5, it can be seen that generally, the students have a good attitude of learning independence attitudes.

2. Learning Achievement

The results of data processing showed that the lowest score of learning achievement obtained by students was 11, the highest score of 20, and the average score of learning achievement of 16. The score of student's learning achievement can be seen in Table 6.

Table 6. Distribution of Learning Achievement Score

Interval of Score	**Number of Student**	**Percentage (%)**	**Interpretation**
11-12	1	3.23	Low of average
13-14	9	29.03	
15-16	8	25.81	
17-18	7	22.58	Above of Average
19-20	6	19.35%	

The average score of learning achievement of 16.16 from maximum score of 20, if converted to get the value of learning achievement of 80.80. Thus, it can be concluded that generally, the achievement of learning achieved by students included in good category.

3. The Correlation Between an Attitude of Learning Independence and Learning Achievement

The first stage to determine the relationship of learning independence and learning achievement is the normality test of both variables. The results of normality test of bothvariables to be correlated can be seen in Table 7.

Table 7. The Results of Normality Test

The Tested Aspect	Value of χ^2 count	Value of χ^2 table	Annotation
Attitudes of Learning Independence	5.95	7.82	Normally distributed
Learning Achievement	8.06	5.99	Not normally distributed

The result of normality test showed there is one variable that is not normally distributed. Because there is no normally distributed data variables, so the correlation calculation using Phi Coeficient technique.

The calculation result is obtained by the value of the correlation coefficient $r_{\phi}=0,64$, called r_{count}. This value is then consulted with the value of the correlation coefficient in the table, $r_{table(5\%)}$ = 0.355.The results showed that $r_{count} > r_{table}$ so it can be concluded that there is a positive relationship (unidirectional) between the attitudes of learning independence and learning achievement. This means that the better attitudes of student learning independence, so the betterlearning achievement will be achieved.

The calculation result of significance test indicated that value χ^2 count = 12,7 while value χ^2 table = 3.84 This means that there is a significant positive relation between the attitudes of learning independence possessed by students with their learning achievement obtained.

4.Contribution of Learning IndependenceAttitudes toward Learning Achievement

The calculation result of determination coefficient, $KD = 0,64^2 x100\%=40,96\%$. This value indicates that the student's independence learning attitudescontributed of 40.96% toward their learning achievement obtained. This means that there are 59.04% other factors besides the attitudes of learning independence that affects the students learning achievement. These factors include: the level of intelligence, facilities and learning infrastructure, learning methods, how to learn, and others.

CONCLUSION

Based on the findings of research results, can be drawn some conclusions as follows:

1. Generally,the student's learning independence attitude is good.
2. Generally, the student's learning achievement obtained is good.

3. There is a positive relation (unidirectional) that is significant between the attitudes of learning independence and student achievement. This means that the better the student's learning independence attitudes, so the better the learning achievement will be achieved.

4. The attitudes of learning independence contribute to 40.96% of student's learning achievement to be achieved.

SUGGESTION

The need for further research on factors besides the attitudes ofindependence learning contributed about 50.04% to the learning achievement. For example, how to learn, learning methods, and other factors.

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