

The Effectiveness of TANDUR Method of Improving Students' Learning Ability in Junior High School

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Abstract – The problem of this research was whether there is effectiveness of using TANDUR method of improving students' learning ability on concept of set matter to solve problems in grade VII students of Aisyiyah Sumatera Utara junior high school (MTs). As the purpose of this study was to determine whether the effectiveness of the utility of TANDUR method in improving students' learning abilities on subject the concept of set in solving problems in grade VII students of MTs Aisyiyah Sumatra Utara. The research instruments used were test and observation. As the population in this study were all students in class VII MTs Aisyiyah Sumatra Utara consisting of 2 classes namely class VII-A and class VII-B. Where the number of students from both classes was 44 students and the sample was the whole population. The results of research which have been researched by the author obtained that the hypothesis accepted was H_a that there was effectiveness of the utility of TANDUR method in improving students' learning abilities on subject the concept of set in solving problems in grade VII students of MTs Aisyiyah North Sumatra. The effectiveness of using TANDUR method to improve students' learning ability on subject the concept of problem solving in grade VII students of MTs Aisyiyah Sumatra Utara with determination coefficient was 59.2% meant that students' learning ability on subject the concept of set in solving problem was influenced by Students' creativity factor in learning by using TANDUR method was 59.2% while the rest was influenced by other factors.

Keywords: Effectiveness, TANDUR method, learning ability

I. INTRODUCTION

The development of science and technology requires every human being to be able to adjust to follow the changes that occur, able to solve problems that is faced carefully, precisely and creatively. To compensate for the rate demands of the science and technology development, would someone really need to understand, trains himself to be skilled in solving problems that arise in the daily of life.

This with the purpose of mathematics learning is contained in the curriculum of school mathematics subject at all levels of education, which leads to student's ability on solving problems encountered in the daily of life. With the enactment of a new curriculum in school is expected to fix the model or method of learning that has been done, so that it can make students creative and innovative to face of every lesson that is taught.

According to observations at MTs Aisyiyah Sumut, the student learning ability in the mathematics is still very less, because 1) the learning method is less precise, where basically the learning that is used is the learning that makes the teacher as the central of activity and the students are left passive, 2) how to explain the monotony that leads to lack of creativity and activity of students in the mathematics learning. In addition, in the process of teaching and learning takes place that is able to answer matters or tasks related to mathematics only 10-15 students or about 34.09% and viewed in terms of learning support facilities, which brought the book of mathematics when mathematics learning only 5-8 students or about 18.18% and who only want to do the homework only 13-15 students or about 34.09%.

The ability of students can develop well and mastery of student concepts can be increase, required an appropriate model of learning. The one of learning model that can be used for the ability of students can develop is a learning model based on students activity and creativity, while the teacher acts as a facilitator and motivator. The situation can be done by developing and applying a more meaningful learning model, one of them by using the method of TANDUR.

The method of TANDUR is the more learning using strategies to create an effective learning environment, designing curriculum, delivering content and facilitating the learning process, so that the learning becomes more enjoyable. That is said to be fun because in the method of TANDUR has a learning framework that grows, natural, named, demonstrate, repeat and celebrate.

According to Bobby and friends (2000) stated that "regardless of subject, grade level or listener, this skeletal framework ensures students become attractive and interested in each lesson. The method of TANDUR also ensures that they are learning, practicing, making real lessons for themselves and achieving success.

By using the method of TANDUR is expected teaching and learning process can be more effective, especially in learning of mathematics which generally at solving problem. By using this method will be seen how the effectiveness of the method of TANDUR to the learning process of students, especially the creativity of student learning in improving the ability of learning is the ability of mathematics problem solving on students of MTs Aisyiyah Sumut.

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II. METODOLOGY

This research has been done at VII grade of MTs Aisyiyah Sumut where it consists of 2 classes with 44 students and the sample is 44 students. The data retrieval technique use random sampling technique. In this research, the author uses the method of TANDUR is looking for the effectiveness of the use of TANDUR method on students learning creativity in improving the ability of learning is the ability to solve the problem of mathematics on the subject of the concept of the set in the problems solving on the students of 7th grade of MTs Aisyiyah Sumut. This study uses a statistical analysis approach. The data will be collected in this study relate to the variables to be studied. Variables are influencing and influenced factors. As a factor influencing the commonly is called independent variable is X variable, namely the creativity of students in learning use the method of TANDUR. While the so-called influenced factor that is commonly called dependent variable is Y variable, namely the ability to solve mathematics problems. In this study, the instruments used are 1. The test questions that the author designed as many as 5 questions essay test form. Tests are performed to see the mathematics problem solving abilities. 2. The observation, observation is done by observing the learning activities directly by observers. This observation aims to observe the creativity of students during the learning process takes place.

III. RESULT

This research consists of independent variable and dependent variable. The independent variable data is student creativity on learning by using TANDUR method (X) and mathematics problems solving ability (Y) at MTs Aisyiyah Sumut.

After the all data has been collected, then the data is processed by making the frequency distribution table, looking for the average, deviation standard, test of normality and the test of T, then coefficient significant testing by using determination test.

Before the analysis of the regression equation and how big the effectiveness of the two variables, first the data of research result is presented into the frequency distribution table. The steps to be performed with respect to the data are to find the average value, the deviation standard of each variable.

The data analysis technique that is used by the author is: 1) Description test is calculating the Mean (the average of count), 2) prerequisite test is done by normality test, linear regression test, F test, 3) hypothesis test that is done by product moment correlation, T test and determination test.

Table 1 Summary of data description

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
X	44	2.71	4.00	3.3950	.46768	.219
Y	44	55.00	90.00	72.3864	8.72637	76.150
Valid N (listwise)	44					

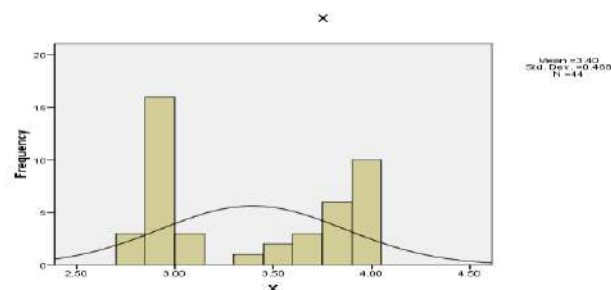


Figure 1: Histogram Graph of Student Creativity in Learning by Using TANDUR Method

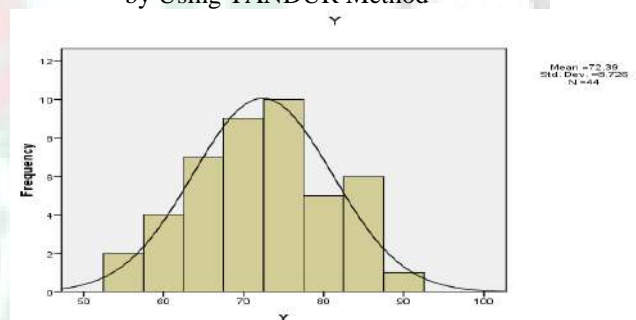


Figure 2: Histogram Graph Student Mathematics Problems Solving Ability

1. The Analysis Requirements Testing

a. Normality test

By using SPSS, the result of normality test data mathematics problem solving ability (Y) is:

Table 2 Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Y	.118	44	.144	.960	44	.133

a. Lilliefors Significance Correction

b. Test of linearity regression

Table 3 Test of linearity regression

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	23.628	6.298		3.752	.001
X	14.362	1.838	.770	7.814	.000

a. Dependent Variable: Y

c. Test of F (ANOVA)

Table 4 Test of F (ANOVA) ANOVA^b

Model		Sum Squares	Df	Mean Square	F	Sig.
1	Regression	1939.932	1	1939.932	61.054	.000 ^a
	Residual	1334.500	42	31.774		
	Total	3274.432	43			

a. Predictors: (Constant), X

b. Dependent Variable: Y

2. The testing of hypothesis

The testing of analysis requirements shows that the score of each research variable has met the requirements for further statistical testing. In this research, hypothesis tested by using correlation technique, T test and coefficient of determination.

The research hypothesis to be tested is formulated as follows, there is a significant effectiveness of the use of TANDUR method seen creativity of students to the students learning ability is the ability to solve mathematics problems. The hypothesis can be formulated as follows:

$H_0 : \rho = 0$ there is no significant effectiveness of the use of TANDUR method seen from the creativity of students to the students learning ability on the subject of the concept of the set of problem solving on students at 7th grade of MTs Aisiyiah Sumut.

$H_a : \rho \neq 0$ there is a significant effectiveness of the use of TANDUR method seen from the creativity of students to the students learning ability on the subject of the concept of the set of problem solving on students at 7th grade of MTs Aisiyiah Sumut.

a. The Correlation of Moment Product

Table 5 The Correlation of Product Moment of Summary Model^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.770 ^a	.592	.583	5.63683

a. Predictors: (Constant), X

b. Dependent Variable: Y

b. The Test of T

Based on the table 4.3 *coefficients* can be known that $t_{count} = 7,814$. Then the value of t_{count} compared with t_{table} with term $df = n - 2$ dan $\alpha = 5\%$ so obtained $t_{table} = 2,021$ or $7,814 > 2,021$. This means the research hypothesis is accepted or in other words there is the effectiveness of the use of TANDUR method in improving of students learning ability on the subject of the concept of the set in problems solving on students at 7th grade of MTs Aisiyiah Sumut.

c. The coefficient of Determination

From the table 4.5 *Summary Model* above is known $r^2 = 0,592$ so to calculate the coefficient of determination using the formula: $D = r^2 \times 100\%$.

So the coefficient of determination is $= 0,592 \times 100\% = 59,2\%$.

IV. CONCLUSION

After conducted research analysis and discussion of research, it can be concluded as follows:

1. From the result of this study can be average value of the X variable is 3,395, and the deviation standard is 0,46768, while the average value of the Y variable is 72,39 and the deviation standard is 8,726.
2. From the result of this study researched the author that the hypothesis received is H_a , there is a significant effectiveness of the use of TANDUR method seen from the creativity of students to the students learning ability on the subject of the concept of the set of problem solving on students at 7th grade of MTs Aisiyiah Sumut.
3. There is a significant effectiveness of the use of TANDUR method seen from the creativity of students to the students learning ability on the subject of the concept of the set of problem solving on students at 7th grade of MTs Aisiyiah Sumut with the coefficient of determination of 59,2% the meaning is the students learning ability on the subject of the concept of the set of problem solving is influenced by students creativity factor on the learning by using TANDUR method of 59.2% while the rest is influenced by other factors.

ACKNOWLEDGMENT

To the teachers are expected to continue to provide learning in various ways or methods and learning models, so that the learning process is not felt too monotonous by the students, especially in learning mathematics.

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