The Impact of Joyful Learning Model on Motivation and Mathematics Learning Outcomes in Class X SMA Negeri 3 Salatiga

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Abstrak

Penelitian ini bertujuan untuk mengetahui ada tidaknya pengaruh model pembelajaran *Joyful Learning* terhadap motivasi dan hasil belajar matematika. Jenis penelitian ini merupakan penelitian eksperimen semu dengan desain *the randomize control group pretest-posttest design*. Populasi dalam penelitian ini adalah siswa kelas X SMA Negeri 3 Salatiga Semester 2 Tahun Ajaran 2015/2016. Pengambilan sampel dilakukan dengan teknik *cluster random sampling* dan diperoleh siswa kelas X.6 (32 siswa) sebagai kelas eksperimen yang diajar dengan model pembelajaran *Joyful Learning*, X.7 (34 siswa) sebagai kelas kontrol yang diajar dengan model pembelajaran konvensional. Instrumen yang digunakan dalam penelitian ini adalah data nilai UTS dan *posttest* untuk mengukur hasil belajar dan angket untuk mengukur motivasi belajar siswa. Uji coba validasi instrumen tes dan angket meliputi validasi ahli. Analisis data yang digunakan adalah uji normalitas dengan uji *Kolmogorov-Smirnov*, uji homogenitas dengan uji *Levene* dan uji beda rerata dengan *Independent Sampel t-tes*. Seluruh uji dilakukan dengan taraf signifikansi 5% dengan alat bantu perhitungan *software SPSS 16.0.0*. Hasil uji kondisi awal baik untuk motivasi belajar maupun hasil belajar dalam kondisi seimbang. Hasil uji hipotesis menggunakan uji *independent sampel t-tes* untuk kondisi akhir motivasi belajar dan uji *Mann-Whitney U-Test* untuk kemampuan akhir hasil belajar. Nilai signifikan untuk motivasi belajar yaitu 0,443 > 0,05. Hal ini menunjukkan bahwa tidak terdapat pengaruh model pembelajaran *Joyful Learning* terhadap motivasi belajar siswa kelas X SMA Negeri 3 Salatiga. Nilai signifikan untuk kemampuan akhir hasil belajar yaitu 0,357 > 0,05. Hal ini menunjukkan bahwa tidak terdapat pengaruh model *Joyful Learning* terhadap hasil belajar siswa kelas X SMA Negeri 3 Salatiga. Hal ini dapat disimpulkan bahwa model pembelajaran *Joyful Learning* tidak berpengaruh terhadap motivasi dan hasil belajar matematika siswa kelas X SMA Negeri 3 Salatiga.

Keyword: *joyful learning*_1, motivasi belajar_2, hasil belajar_3

Abstract

This study aims to determine whether there is an effect of the Joyful Learning learning model on motivation and mathematics learning outcomes. This type of research is quasi-experimental research with the design of the randomize control group pretest-posttest design. The population in this study were students of class X SMA Negeri 3 Salatiga Semester 2 of the 2015/2016 academic year. The sample was taken by using cluster random sampling technique and it was obtained that the students of class X.6 (32 students) were the experimental class which was taught using the Joyful Learning learning model, X.7 (34 students) was the control class which was taught using the conventional learning model. The instruments used in this study were the UTS and posttest value data to measure learning outcomes and a questionnaire to measure student learning motivation. The test instrument validation trial and questionnaire included expert validation. The data analysis used was the normality test with the Kolmogorov-Smirnov test, the homogeneity test with the Levene test and the mean difference test with the Independent Sample t-test. All tests were carried out with a significance level of 5% with the calculation tool SPSS 16.0.0 software. The results of the initial conditions both for learning motivation and learning outcomes are in a balanced condition. The results of hypothesis testing using the independent sample t-test for the final condition of learning motivation and the Mann-Whitney U-Test for the final ability of learning

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outcomes. The significant value for learning motivation is 0.443> 0.05. This shows that there is no effect of the joyful learning model on learning motivation of class X SMA Negeri 3 Salatiga. The significant value for the final ability of learning outcomes is 0.357> 0.05. This shows that there is no influence of the Joyful Learning model on the learning outcomes of class X SMA Negeri 3 Salatiga. It can be concluded that the Joyful Learning learning model has no effect on the motivation and learning outcomes of students in class X SMA Negeri 3 Salatiga.

Keyword: *joyful learning_1, learning motivation_2, learning outcomes_3*

INTRODUCTION

Learning is an event or situation that is deliberately designed to help and facilitate the learning process of building student creativity (Nazarudin, 2007: 163). To create creative and fun learning, various skills are needed, including teaching skills (Mulyasa, 2011: 69). Each teaching skill has its components and basic principles to create creative, professional, and fun learning. Pleasantly delivering the material is also stated in Law No. 20/2003 Article 40 which states that "teachers and education staff are obliged to create an educational atmosphere that is meaningful, fun, creative, dynamic, and dialogical".

In line with the law, Minister of Education and Culture Regulation No. 65 of 2013 about Standards for Primary and Secondary Education Processes states that the learning process is arranged interactively, inspiring, fun, challenging, motivating students to participate actively. Moreover, providing sufficient space for initiative, creativity, and independence according to talent, interests, and physical and psychological development of students. Fun learning was also emphasized again by the Minister of Education and Culture of the Republic of Indonesia Anis Baswedan (2015) in his remarks in the context of the PGRI Anniversary. He encouraged the educators to reflect on the use of the term "taman" by Ki Hadjar Dewantara as a place of learning or what is now known as school. The term confirms the determination that education should be a fun learning process like the conditions in a park. Although many educational challenges should not be felt as suffering, the school should be fun.

Not all learning processes run well according to the standard in the education unit. It can be seen that there are still students who do not pay attention, are busy, play with each other, are sleepy, and even fall asleep in class when the mathematics learning process is in progress (Hamruni, 2010:29). The use of learning strategies that do not vary can cause students less interested in learning mathematics so that the learning outcomes achieved by students are less than optimal Hamruni (2012).

The above issue also happened in learning mathematics in class X SMA Negeri 3 Salatiga. It can be seen during the observation in the Field Experience Program (PPL) activities at SMA Negeri 3 Salatiga. Mathematics teachers still use the conventional model since the teacher considered shortening the time in delivering subject matter to the students. The process of learning mathematics emphasizes more on results rather than the process. Thus, even though the material presented by the teacher to students is a lot, not all students can understand the material presented. Teachers tend to give more material to memorize, drill practice questions, and deliver one-way information (lectures) to the students, while the role of students in learning is only as listeners who take an important note and then do practice questions. The response shown by the students from the learning process was not good. It can be seen that some students were busy with themselves, talking with friends, and even some students were seen putting their heads on the table during the learning process. This indicates a lack of student motivation in learning.

Motivation is a psychological condition that encourages someone to do something. Motivation in learning is a psychological condition that encourages a person to learn (Nasution, 1993: 8). Learning motivation is a driving force possessed by humans to learn. Someone who studies with strong motivation will carry out learning activities in earnest, full of passion and enthusiasm. On the other hand, less motivation would cause a lazy attitude and even tend not to want to do tasks related to the lesson (Dalyono, 2001: 57). The strength and weakness in learning motivation can also affect the success of learning. Therefore, it is necessary to make an effort to gain student learning motivation (Dalyono, 1997: 57).

The same problem is also experienced by students of class X SMA Negeri 3 Salatiga. The learning outcomes of the mathematics learning process in class X students showed that the results were not optimal. The average test result of class X SMA Negeri 3 Salatiga is 60.20. This average is far from the KKM score of 75. Therefore, it is necessary to overcome these two problems. One of the efforts is choosing and applying a suitable learning model. One of the learning models is Joyful Learning.

Joyful learning is a learning approach that supports creative thinking and creates a pleasant atmosphere with fun learning models (Nisak, 2012). Suwantoro (2013) suggests that the Joyful Learning method is a suitable method to involve students in studying the delivered material. This method can increase student learning activity because students are directly involved in the learning process. Many forms of Joyful Learning can be developed, one of them is delivering material in the form of poetry and songs to memorize the concepts learned, creating the material in the form of puzzles, games, and quizzes with prizes (Anas and Salirawati, 2012).

Based on the description, the research applies the Joyful Learning learning model. This research aims to determine whether the learning model impacts the learning activity. This research is entitled "The Impact of Joyful Learning Model on Motivation and Mathematics Learning Outcomes in Class X SMA Negeri 3 Salatiga".

METHOD

The type of research used is quasi-experimental research. Quasi-experimental research is experimental research that has a control group but does not fully function to control external variables that affect the implementation of the experiment (Sugiyono, 2010:114). Quasi-experimental research specifically examines practical situations that are unable to control for all relevant variables, except for some of these variables (Budiyono, 2003: 83). This study controls two dependent variables, learning motivation and learning outcomes. According to Arikunto (2006), the population is the entire research subject. Meanwhile, according to Sugiyono (2013: 80), a population is a generalization area consisting of objects, subjects, which have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions. The population in this research was the students of SMA Negeri 3 Salatiga, namely class X, 328 students divided into ten classes.

The sample is part of the total number and characteristics obtained by the population (Sugiyono 2013: 81). According to Setyosari (2012: 192), experimental research in the impact of teaching methods usually uses classes or groups, and it is not possible to randomly take each individual from each class. The samples of this research were students of SMA Negeri 3 Salatiga, class X.6 with total students is 32 students as the experimental class. Furthermore, class X.7 with total students is 34 students as the control class. Sampling technique is a technique in sampling (Sugiyono, 2013: 81). The sampling technique in this research uses cluster random sampling. This technique was chosen since the object is large and the sampling conducts in groups rather than individually so that all groups have the same opportunity as samples. The population of class X takes through 2 classes as a control class and an experimental class.

The research design is the randomized control group pretest-posttest. In this design, subjects were taken from a specific population and randomly grouped into two groups, the experimental and control classes. The two groups give an initial test on the dependent variable. The data from the test was used to identify whether the two samples had the same initial ability or not. The initial test data takes from the mathematics midterm test scores of class X students of SMA Negeri 3 Salatiga. The midterm test scores are considered as the results of learning mathematics before being treated to determine the initial ability of students' learning outcomes. The treatment was given to the experimental class for a specific period, while the control class was not given any treatment. The two groups, the experimental class, and the control group were subjected to the same measurement, through a questionnaire and a final test. The difference in the mean between the pre-test and the post-test for each group was calculated. Then, the mean scores were compared to ensure whether the given treatment had a bigger impact rather than the control class. The difference was determined by a suitable statistical test. The results of the measuring instrument

Validity relates to the ability to measure precisely. A valid instrument is an instrument that accurately measures the situation (Purwanto, 2010: 123-124). This research uses the validity of the

motivational questionnaire and test instruments. The validation of the questionnaire conducts by two teachers of counseling subjects at SMA Negeri 3 Salatiga. The posttest validation was conducted by one mathematics lecturer and two mathematics teachers at SMA Negeri 3 Salatiga. Validators are asked to share their opinion about the instrument for evaluation purposes. After the tools are declared to meet content validity and advance validity, the tools are ready to be used in research. The way to test the validity is by correlating with each score of the questionnaire and item scores.

$$r_{xy} = \frac{N \Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{N \Sigma X^2 - (\Sigma X)^2\}\{N \Sigma Y^2 - (\Sigma Y)^2\}}}$$

Description:
r_{xy}: correlation coefficient between variable X and variable Y
N : total responden
X : item score
Y : total score

A reliable instrument is once the measurement is the same and conducted by the same person at different times or on the different person (but have the same conditions) at the same time or at different times. , 2003). The method used in the reliability test for the learning motivation instrument is the Alpha Cronbach method, while the reliability test for the mathematics learning outcomes instrument conducts by using a one-time test method with the Kuder-Richardson (KR-20) calculation technique.

$$r_{11} = \left(\frac{n}{n-1}\right)\left(1 - \frac{\sum s_i^2}{s_t^2}\right)$$

Description:
r_{11} = indeks realibilitas instrumen
n = banyaknya butir instrumen
s_i^2 = variansi belahan ke $-$ i, i = 1,2,3, … , k ($k \leq n$)
s_t^2 = variansi skor $-$ skor yang diperoleh subjek uji coba

To test the reliability is by using the SPSS 16.00 software program. According to Sekaran (Priyatno, 2012: 120), reliable less than 0.6 is low, while 0.7 is acceptable, and above 0.8 is good. In this case, the technique used for reliability testing is Cronbach's Alpha to determine the consistency of the measuring instrument.

Table 1. Reliability Criteria and Categories

Reliability Criteria	Categories
$\alpha < 0.7$	Not reliable
$0,7 \leq \leq 0,8$	Quite reliable
$0,8 \leq \leq 0,9$	Reliable
$0,9 \leq \leq 1,0$	Very reliable

The analytical technique used in this research is "parametric statistics". Parametric statistics are used to test population parameters through statistics or to test population size through sample data or data obtained from samples (Sugiyono 2010:201). The data analysis in this study is the normality test of the data that serves to identify whether the sample data is normally distributed or not (Priyatno, 2010:71). The normality test used is the normality test with Kolmogorov-Smirnov. The Kolmogorov-Smirnov method needs to read the signs. If the significance is less than 0.05 then the conclusion is that the data comes from a population that is not normally distributed. But if the significance score is more than 0.05 then the data comes from a normally distributed population.

The homogeneity test is used to test whether the two sample classes in the research come from populations that have the same variance or not (Priyatno, 2010: 76). If the probability value is more than 0.05, the data comes from a population with the same or homogeneous variance. However, if the significant value in the test results is less than 0.05 the data comes from a

population whose variance is unequal or heterogeneous. The homogeneity test technique in this research uses the Levane Statistical test. The homogeneity test technique in research This software uses SPSS 16.00.

The mean difference test was held through the test results and questionnaires from the experimental class and control class. This test is held before giving treatment and after giving treatment. The data analysis technique in this research used two unrelated samples (Independent Sample T-Test). According to Sugiyono (2010), this test is used to determine the difference in the average value of a sample. The mean difference test used in this research is the independent sample t-test because examined two independent dependent variables. This test is used to determine whether there is a significant difference in the mean of the two researched classes. The significant criteria were more than 0.05 were accepted and less than 0.05 were rejected. Before the t-test (Independent Sample t-test) was conducted, a normality test and a variance similarity test (homogeneity) were conducted. An average test conducts to find out whether the experimental and control groups have the same mean or not. This test tested whether the experimental class and control class have the same initial ability or not. The mean difference test was conducted twice to test the initial abilities and hypotheses of the research.

RESULTS AND DISCUSSION

A. Research Results

1. Initial Conditions of Mathematics Learning Outcomes

a. Description of the Initial Conditions of Learning Outcomes

The initial ability of student learning outcomes is used to describe the data on the initial learning outcomes. The students in class X.6 as the experimental class and class X.7 as the control class to obtain the initial abilities of both classes. The initial ability of student learning outcomes is measured by using midterm test scores. Before the implementation stage, learning in the control class was not given the Joyful Learning model treatment, the experimental class was given the Joyful Learning model treatment.

Table 2. Results of the description of the initial conditions of learning outcomes

	N	Minimum	Maximum	Mean	Std. Deviation
Experiment	32	36.67	86.67	59.1669	11.94334
Control	34	36.67	93.33	62.6459	14.06577
Valid N	32				

Based on the results of the descriptive test, the minimum score for the experimental class and the control class is the same, 36.67. The maximum value of the control class (93.33) and the average control class (62.65) is higher than the maximum score of the experimental class (86.67) and the average of the experimental class (59.17). However, the standard deviation of the 32 students in the sample class has an average ability than 34 students in the control class. This is because the standard deviation of the experimental class (11.94) is lower than the control class(14.07). The results of the data on the initial conditions of learning outcomes are then divided into 3 categories, high, medium, and low.

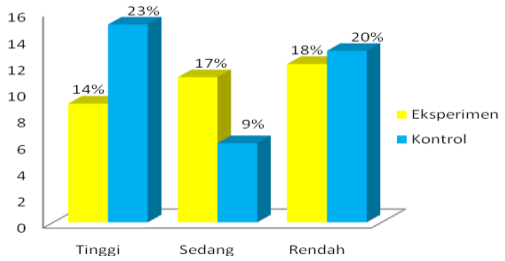


Figure 1. Categorization of Initial Conditions of Learning Outcomes

The figure shows that the initial conditions of learning outcomes in the experimental class are mostly in the low category (18%). While the control class students are in the high category (23%). The moderate category in the experimental class (17%) is greater than the control class (9%).

b. Normality Test of the Initial Conditions of Learning Outcomes

The normality test is a prerequisite test before performing the two-sample mean difference test. The normality test is used to determine if the sample class data comes from a population that is normally distributed or not. The normality test in this study used the Kolmogorov-Smirnov test because the number of samples in each sample class was less than 50.

Table 3. Normality Test for Initial Conditions of Learning Outcomes

		Kolmogorov-Smirnov[a]		
	Group	Statistic	Df	Sig.
Score	Eksperimen	.083	32	.200*
	Kontrol	.141	34	.086

The table shows that the experimental class has a significant score of 0.200 and the control class is a 0.086. These two classes have a significance score of more than 0.05. It can be concluded that the two classes come from a normally distributed population.

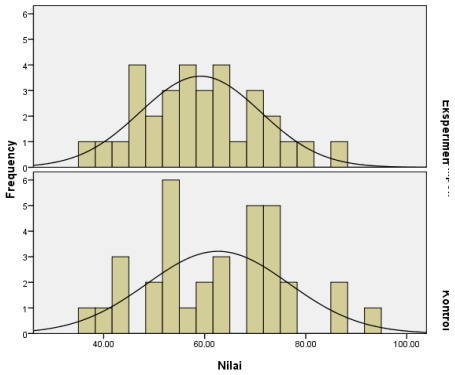


Figure 2. Normality Test Graphic of Initial Conditions of Learning Outcomes

c. Homogeneity Test of Initial Conditions of Learning Outcomes

The homogeneity test is used to determine the initial ability of the two classes to have the same variance or not. If the significant value is more than 0.05, then both classes have the same variance. In this homogeneity test, Levene's test for equality of variances is used, which can be carried out simultaneously with the different tests. Homogeneity test using SPSS 16.00 software can be seen as follow:

Table 4. Test of Homogeneity of Initial Conditions of Learning Outcomes

		Levene's Test for Equality of Variances	
		F	Sig.
Score	Equal variances assumed	1.421	.238
	Equal variances not assumed		

Based on the table, the significant value in the homogeneity test of the experimental class and the control class is 0.238 more than 0.05. It can be concluded that both the sample group has the same variance or is homogeneous so that the two classes can be tested differently.

d. Test of the mean difference in the initial conditions of learning outcomes

The mean difference test is used to analyze the mean of the two classes is the same or different. If the significant t value is more than 0.05, then the mean of the two classes is the same. The t-test used the t-test for equality of means with SPSS 16.00 software.

Table 5. Test of the Mean Differences of the Initial Conditions of Learning Outcomes

		t-test for Equality of Means						
		T	df	Sig. (2-tailed)	Mean Differenc	Std. Error Differenc	95% Confidence Interval of the Difference	
							Lower	Upper
Nilai	Equal variances assumed	-1.080	64	.284	-3.47901	3.22175	-9.91519	2.95717
	Equal variances not assumed	-1.085	63.350	.282	-3.47901	3.20571	-9.88442	2.92641

The result shows that the significance value of the initial condition of student learning outcomes was 0.284 more than 0.05. This shows that the initial conditions of the learning outcomes of the two sample groups are in a balanced condition.

2. Final Condition of Mathematics Learning Outcomes

a. Description of the Final Conditions of Learning Outcomes

The final condition of student learning outcomes is used to describe the data on student learning outcomes. Furthermore, would obtain the final condition of the experimental class and control class. The final condition of student learning outcomes was measured using a posttest in the form of multiple-choice questions. After the learning phase ended, the experimental class which was treated with the Joyful Learning model, and the experimental control class that was not treated with the Joyful Learning model were given a posttest.

Table 6. The Description Results of the Final Conditions of Learning Outcomes

	N	Minimum	Maximum	Mean	Std. Deviation
Experiment	30	3.00	10.00	7.3333	1.74856
Control	33	3.00	10.00	7.5758	2.29170
Valid N (listwise)	30				

The descriptive test results showed that the minimum and maximum values for the experimental class and control class were respectively the same (3.00) and (10.00). Meanwhile, the average of the experimental class (7.3) is lower than the control class

(7.5) with a standard deviation (data distribution) for the experimental class (1.749) which is better than the control class (2.292).

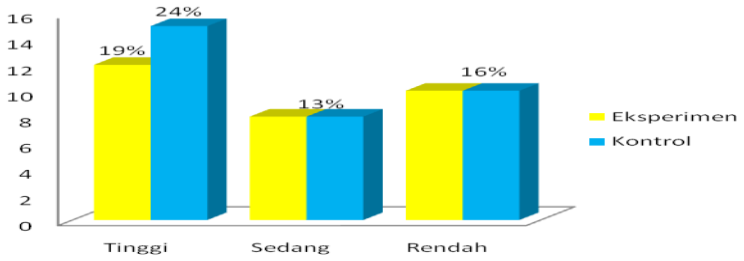


Figure 3. Categorization of the Final Conditions of Learning Outcomes

The picture shows that the post-test learning outcomes in the experimental class and in the control class are mostly in the high category. However, the percentage of control students categorized as high category (24%) is higher than the percentage in the experimental class (19%). The percentage of students in the medium category (13%) and low (16%) categories for both classes is the same.

b. Normality Test for Final Conditions of Learning Outcomes

The normality test is a prerequisite test before performing the two-sample mean difference test. The normality test is used to determine if the sample class data comes from a population that is normally distributed or not. The normality test in this research used the Kolmogorov-Smirnov test because the number of samples in each sample class was less than 50.

Table 7. Normality Test for Final Conditions of Learning Outcomes

		Kolmogorov-Smirnov[a]		
	Group	Statistic	Df	Sig.
Score	Experiment	.166	30	.035
	Control	.172	33	.014

The table shows that the normality test for the experimental class learning outcomes data produces a significant value of 0.035. The significant value of the normality test in the control class is .014 which means the significant value for the normality test in the experimental class is less than 0.05. It can be concluded that the learning outcomes of the experimental group did not come from a normally distributed population, because one of the classes did not come from a normally distributed population. A two-mean similarity test (t-test) was conducted through a two-part test using a non-parametric statistical test, the Mann-Whitney U-Test.

The Mann-Whitney-U test has the requirement that the data must be in ordinal form. If the data is in the form of intervals, it needs to be converted into ordinal data first (Sugiyono, 2012: 153). Therefore, the learning outcomes data are transformed into ordinal data by determining the ranking. The ranking data are used in the Mann-Whitney-U test.

Table 8. Mann-Whitney Test Results Final Condition Learning Outcomes

	Score
Mann-Whitney U	423.500
Wilcoxon W	989.500
Z	-.922

Asymp. Sig. (2-tailed)	.357

The table shows that the significant value of the class is 0.357 more than 0.05 so it can be concluded that there is no impact of the implementation of the Joyful Learning model on the learning outcomes of class X students of SMA Negeri 3 Salatiga.

3. Initial Conditions of Mathematics Learning Motivation

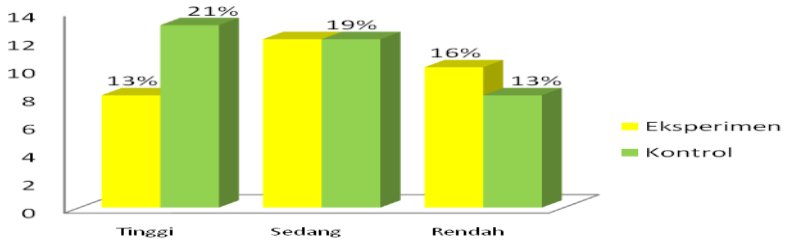
a. Description of Initial Conditions of Learning Motivation

The initial conditions describe the initial learning motivation before being treated with the Joyful Learning model. The motivation questionnaire was given before the implementation stage of learning in the experimental class those who were treated with the Joyful Learning model and the control class that was not treated with the Joyful Learning model.

Table 9. Results of Description of Initial Conditions of Learning Motivation

	N	Minimum	Maximum	Mean	Std. Deviation
Experimental	30	47.00	77.00	61.9333	6.44838
Control	33	47.00	75.00	62.8182	7.17833
	30				

The result shows that the minimum score for the experimental and control classes is the same, 47.00. The maximum value of the experimental class (77.00) is higher than the control class (75.00). Meanwhile, the average of the experimental class (61.93) is lower than the control class (62.82) with a standard deviation (data distribution) the experimental class (6.45) is better than the control class (7.18). The results of the learning motivation questionnaire were divided into 3 categories, high, medium, and low.



Gambar 4.4 Pengkategorian Kondisi Awal Motivasi Belajar

The bar chart shows that the percentage of students' learning motivation in the high and medium categories in the control class is the same (19%) bigger than the experimental class. Hence, for the high category (17%) and the medium category (14%). The low category in the experimental class (16%) is bigger than the control class (13%).

b. Normality Test of Initial Conditions of Learning Motivation

The normality test was used to identify the initial conditions of learning motivation in the control class that did not give the Joyful Learning model treatment and the experimental class which was given the Joyful Learning model treatment.

Table 10. Normality Test of Initial Conditions of Learning Motivation

		Kolmogorov-Smirnov[a]		
	Group	Statistic	Df	Sig.
Score	Experimental	.074	30	.200*
	Control	.069	33	.200*

	Group	Kolmogorov-Smirnov[a]		
		Statistic	Df	Sig.
Score	Experimental	.074	30	.200*
	Control	.069	33	.200*

The table shows that the significant value of both classes is 0.200* (the significant value is more than or equal to 0.2). Both of these classes have a significant value of more than 0.05, so it can be concluded that the two classes come from a normally distributed population.

b. Homogeneity Test of Initial Conditions of Learning Motivation

The homogeneity test was used to determine the condition of the students' learning motivation in the two classes having the same variance or not. If the significant value is more than 0.05, the classes have the same variance. In the homogeneity test, Levene's test for equality of variances was conducted along with the different tests.

Table 11. Test of Homogeneity of Initial Conditions of Learning Motivation

		Levene's Test for Equality of Variances	
		F	Sig.
Score	Equal variances assumed	.528	.470
	Equal variances not assumed		

Based on the table, the result of significant value from the homogeneity test between the experimental class and the control class is 0.470. So it can be concluded that the two sample groups came from populations with the same variance (homogeneous).

c. The mean difference test in the initial conditions of learning motivation

The mean difference test was used to determine the initial conditions of students' learning motivation in the control class which was not given the Joyful Learning model treatment and the experimental class which was given the Joyful Learning model treatment. The two classes have the same average if the significant value is more than 0.05, while the two classes are said to have a difference if the significant value is less than 0.05.

Table 12. Test of the mean difference in the initial conditions of learning motivation

		t-test for Equality of Means						
		T	Df	Sig. (2-tailed)	Mean Differenc	Std. Error Differenc	95% Confidence Interval of the Difference	
							Lower	Upper
Nilai	Equal variances assumed	-.513	61	.610	-.88485	1.72573	-4.33567	2.56597
	Equal variances not assumed	-.515	60.993	.608	-.88485	1.71683	-4.31788	2.54818

The independent sample t-test results show that the significance value of the initial condition of students' learning motivation was 0.610 more than 0.05. It shows that the initial condition of learning motivation for the two sample groups has a balanced motivation to learn mathematics.

4. Final Conditions of Motivation to Learn Mathematics

a. Description of the Final Conditions of Learning Motivation

The final condition of learning motivation is used to describe the final learning motivation of the experimental class and control class students by using a learning motivation questionnaire to determine the final condition of the students' learning motivation from each class.

Table 13. Results Description of the Final Conditions of Learning Motivation

	N	Minimum	Maximum	Mean	Std. Deviation
Experimental	30	48.00	73.00	61.6667	7.09703
Control	33	44.00	78.00	63.0303	6.92588
Valid N	30				

The results show that the minimum score for the experimental class (48.00) is bigger than the control class (44.00). For the maximum score (73.00) and the average (61.67) the experimental class is smaller than the control class, the maximum score (78.00), and the average (63.03). The standard deviation (data distribution) of the control class (6.93) is better than the experimental class (7.10).

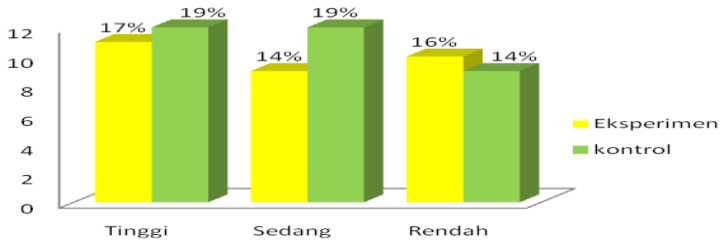


Figure 5. Categorization of the Final Conditions of Learning Motivation

The picture shows that the learning motivation of students in the experimental class is mostly in the high category (17%). In the control class, most of the students are in the high category and the middle category with the same percentage (19%). The low motivation category, the experimental class (16%) was higher than the control class (14%).

b. Normality Test of the Final Condition of Learning Motivation

The normality test was used to determine the final condition of the learning motivation of the control class which was not treated with the Joyful Learning model and the experimental class which was given the treatment of the Joyful Learning model.

Table 14. Normality Test of the Final Condition of Learning Motivation

		Kolmogorov-Smirnov[a]		
	Group	Statistic	Df	Sig.
Score	Experimental	.147	30	.095
	Control	.108	33	.200*

The table shows the value of the mathematics learning motivation score in the experimental class is .095 and the control class is .200*, meaning that the significant value is more than or equal to 0.2. Both of the classes have a significant value of more

than 0.05. This shows that the sample group comes from a normally distributed population.

c. Test of Homogeneity of Final Conditions of Learning Motivation

The homogeneity test conducts to identify the condition of the students' learning motivation in the two classes having the same variance or not. If the significant value is more than 0.05, then both classes have the same variance. In this homogeneity test, Levene's test for equality of variances is used, which can be conducted simultaneously with the different tests.

Table 15. Test of Homogeneity of Final Conditions of Learning Motivation

		Levene's Test for Equality of Variances	
		F	Sig.
Score	Equal variances assumed	.435	.512
	Equal variances not assumed		

Based on the table, the significant value is 0.512. It can be concluded that the two sample groups came from populations with the same variance (homogeneous).

d. Test of Differences in the Average Final Condition of Learning Motivation

The mean difference test was used to determine the difference in the final conditions of students' learning motivation in the control class which was not given the Joyful Learning model treatment and the experimental class which was given the Joyful Learning model treatment. The two classes have the same average if the significant value is more than 0.05, while the two classes have a difference if the significant value is less than 0.05.

Table 16.The mean difference test of Final Conditions of Learning Motivation

		t-test for Equality of Means						
		t	Df	Sig. (2-tailed)	Mean Differenc	Std. Error Differenc	95% Confidence Interval of the Difference	
							Lower	Upper
Nilai	Equal variances assumed	-.771	61	.443	-1.36364	1.76780	-4.89856	2.17129
	Equal variances not assumed	-.770	60.116	.444	-1.36364	1.76989	-4.90380	2.17652

Based on the table, the significant value in both classes is 0.443 more than 0.05. It can be concluded that there is no impact of the Joyful learning model on students' learning motivation.

B. Discussion of Research Results

This research aimed to identify whether there is an effect of the Joyful Learning learning model on the motivation and learning outcomes of mathematics in class X SMA Negeri 3 Salatiga. This research was conducted in class X.7 as the control group and group X.6 as the experimental class. The results of the initial ability test were conducted using the Independent samples t-test. The results of this test produce a significant value of 0.284 (bigger than 0.05). This means that the two sample groups have the same initial ability. The results of hypothesis testing for learning outcomes using Mann Whitney-U and producing a significant value of 0.357 (more than 0.05). It can be concluded that there is no impact on implementing the Joyful Learning learning model outcomes of class X SMA Negeri 3

Salatiga students. When implementing the Joyful Learning model, the teacher can create a fun learning process.

At the initial stage, the teacher along with the students create an attractive handout made of thick colorful paper containing a summary of the material from beginning to end. The delivery stage of the teacher also relates the material to daily life. For example the use of series and parallel electric currents in proving the value of truth. The teacher also encourages the students to sing together by changing song lyrics according to the taught material to foster student learning motivation. In the training stage, at this stage students work on practice questions with games such as make a match, puzzles, and quizzes. In the closing stage, the teacher along with the students concludes what has been learned. Furthermore, the teacher can play a song or video at the end of the lesson as a refreshing for students.

However, the results of the research show that there is no impact of the Joyful Learning model on learning outcomes. This is because almost all of the practice questions are done in groups. The process of working on the questions is dominated by specific students and not all group members are active and participate in doing the work, so when the final test is given some students have difficulty working on similar questions. On the other hand, the control class faced a different result in this research. The process of practicing questions in the control class must be done individually so that each student is conditioned to work on the questions independently. So even though the learning process using the Joyful Learning model has succeeded in creating fun learning, the application of the Joyful Learning model has not properly controlled the course of the training process. This has an impact on the non-optimal learning outcomes achieved by students in the experimental class so that the experimental class learning outcomes are not better than the control class.

The results of the initial ability test of learning motivation were conducted by using the Independent samples t-test. The results of this test produce a significant value of 0.610 (bigger than 0.05). This means that the two sample groups have the same initial motivation. The results of hypothesis testing for learning outcomes using the Independent samples t-test produce a significant value of 0.357 (more than 0.05). Therefore, it can be concluded that there is no impact in implementing the Joyful Learning learning model on the learning motivation of the tenth graders of SMA Negeri 3 Salatiga. The reason why the Joyful Learning model does not affect learning motivation is that the time used in filling out the learning motivation questionnaire is different between the experimental class and the control class. The time given to fill out a learning motivation questionnaire for both the experimental class and the control class was the same, namely 15 minutes. However, what happened in the field was different, the first 5 minutes when filling out the learning motivation questionnaire in the experimental class there was an announcement that class X students were expected to gather in the classroom immediately to get directions related to the competition activities that would be conducted at school so that most students fill out the questionnaire quickly in ±5 minutes. Therefore, many students filled out motivational questionnaires in a hurry and it was even seen that some students equated the contents of the questionnaire with their classmates.

This has an impact on the non-optimal process of filling out the questionnaire, thus causing the data obtained to be less accurate. Therefore, the results showed that the experimental class students' learning motivation was not better than the control class. So that the Joyful Learning model does not affect the learning motivation of class X students at SMA N 3 Salatiga.

CONCLUSION

Based on the analysis of the learning motivation questionnaire data using the Independent Sample t-test, the result shows a significant value of 0.443 more than 0.05. The results of the data analysis of learning outcomes, the posttest value of learning outcomes using the Mann Whitney-U

test resulted in a significant value of 0.357 more than 0.05. Therefore, can be concluded that there is no impact of the Joyful Learning model on the motivation and learning outcomes of mathematics in class X SMA Negeri 3 Salatiga.

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