

## The Effect of Applying the Brainstorming Method on Results Studying Social Sciences Subjects

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### Abstract

This research aims to analyze the effect of applying the brainstorming method on learning outcomes in social studies subjects. This research is quantitative research and is included in the One Group Pretest-Posttest type of experimental research. The population and sample for this study were all students at MTs Az-Zahra, a total of 26 people consisting of 23 men and 3 women. Data were analyzed using inferential analysis t-test. The research results show that there is a real difference between economic learning outcomes in the pre-test and post-test data, so it is concluded that H1 is accepted and H0 is rejected, which shows that the application of the Brainstorming method is effective in improving learning outcomes.

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### Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh penerapan metode *brainstorming* terhadap hasil belajar pada mata pelajaran IPS. Penelitian ini merupakan penelitian kuantitatif dan termasuk dalam jenis penelitian eksperimen *One Group Pretest-Posttest*. Populasi dan sampel penelitian ini adalah seluruh peserta didik MTs Az-Zahra, sebanyak 26 orang yang terdiri dari 23 laki-laki dan 3 perempuan. Data dianalisis dengan menggunakan analisis inferensial Uji-t. Hasil penelitian menunjukkan bahwa terdapat perbedaan yang nyata antara hasil belajar ekonomi pada data *pre-test* dan *post-test* sehingga disimpulkan bahwa H<sub>1</sub> diterima dan H<sub>0</sub> ditolak yang menunjukkan bahwa penerapan metode *Brainstorming* efektif terhadap peningkatan hasil belajar.

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## 1. INTRODUCTION

The learning objective is to develop a logical, critical and honest mindset. Learning is not only enough by hearing and seeing, but also by doing activities such as reading, asking, answering, commenting, working, communicating, percentages, discussions. Learning is the process of students building their own ideas/understanding, so learning activities should be able to provide the widest possible opportunities for students to act, think, communicate, interact on their own smoothly and be motivated without teacher obstacles. Teachers are expected to design learning that provides the widest possible opportunities for students to play an active role in developing concepts independently or together.

MTs Az-Zahra Ajanglaleng is a level of education equivalent to a junior high school located in Ajanglaleng Village, Amali District, where the number of study rooms is 3 classes and the total number of students at MTs Az-Zahra is a total of 47 students. Succeed Whether or not learning objectives are achieved at school is determined by the educational experience and strategies carried out by educators in educational and learning experiences in the classroom so that students can easily understand what the educator is saying.

Social Sciences (IPS) is part of the school curriculum whose main responsibility is to help students develop the knowledge, skills and values needed to participate in community life at the local, national and global levels. Through students' social studies learning expected Able to think critically, creatively and innovatively. Attitudes and behavior show discipline and responsibility as individuals, community members, citizens and citizens of the world. Able to communicate,

work together, have a tolerant, empathetic attitude and have a multicultural perspective while remaining based on local excellence (Karim, 2017).

Learning outcomes are changes in behavior and abilities that students obtain after participating in learning, such as psychomotor, mental and emotional (Harianti & Margaretha, 2014) (Aldeirre et al., 2018) (Siregar, 2019). Learning outcomes are a proportion of evaluation of learning exercises or developing experiences, communicated as images, letters or sentences which inform the results that have been achieved. The learning outcomes obtained by students are very important data that can be used as a basis for consideration for providing or planning the provision of guidance and counseling services to students. In general, the learning outcomes obtained by students can provide clues about the learning difficulties they are experiencing. For example, students who have lower grades than the class average can be expected to have learning difficulties (Wahyurin et al., 2019).

In accordance (Fazila, 2017), that learning outcomes are the final evaluation of cycles and presentations that have been and will often be stored for quite a long time or will not really be lost forever. Because, learning outcomes play a role in shaping the general character of an individual need achieve better results with the aim of meaningfully influencing perspectives and producing better work behavior. Learning outcomes are widely used as an action to find out how far someone has mastered the material that has been taught. However, because a person's learning outcomes are sometimes difficult to know without the person effectively demonstrating the abilities acquired through learning.

The brainstorming method is a teaching technique in the classroom by giving a problem to the class by the teacher and then students answer or express their opinions so that the problem develops into a new problem or can also be interpreted as a way to get lots of ideas from a group of people in a short time. (Khairani et al., 2020). The brainstorming method or brainstorming method is an appropriate teaching method to use by considering the suitability of the activity characteristics of the brainstorming method with the syntax stages of the PBL learning model, namely group thinking activities with sharing knowledge from each individual group (Rahmawati et al., 2022).

(Astuti & Haryono, 2017) explained that brainstorming, brain writing and mind mapping are good starting points. They can help to unlock quickly and easily the hidden creative power that all human beings process." The essence of this method is that students convey their opinions without anyone criticizing or refuting them before the evaluation session.

The Brainstorming method has steps in its application, the way to apply the Brainstorming method is divided into two assignments, namely tasks for teachers and students. The teacher's task in applying this method is to provide problems that are able to stimulate students' minds, so that they respond, and the teacher must not comment on whether the student's opinion is right or wrong, nor does it need to be concluded, the teacher only accommodates all student opinion statements, so that all students in the class takes a turn. Meanwhile, students' tasks during learning are responding to problems by expressing opinions, comments or asking questions, raising new problems, then students learn and train to formulate opinions using good language and sentences. Meanwhile, students who are less active need to be provoked with questions from the teacher so that they participate actively and dare to express their opinions (Sunandar & Effendi, 2018). According to (Liani et al., 2018), the rules for carrying out brainstorming are: (a) no criticism; (b) free and relaxed to contribute ideas at any time and develop other ideas for himself; (c) focus on quantity of ideas; (d) every idea must be recorded; and (e) incubation before evaluating.

Brainstorming is a combination of question and answer or discussion, referring to exploring ideas based on creativity of human thinking. Students are free to express opinions without criticism or assessment, because during the idea collection stage all opinions or ideas are accommodated and recorded without exception. (Rambe, 2022).

A good teacher will always evaluate the quality of the learning activities that have been carried out. If there are poor results (underachievement) then another method will be tried so that the class being guided will always run dynamically. Starting from these problems, to improve

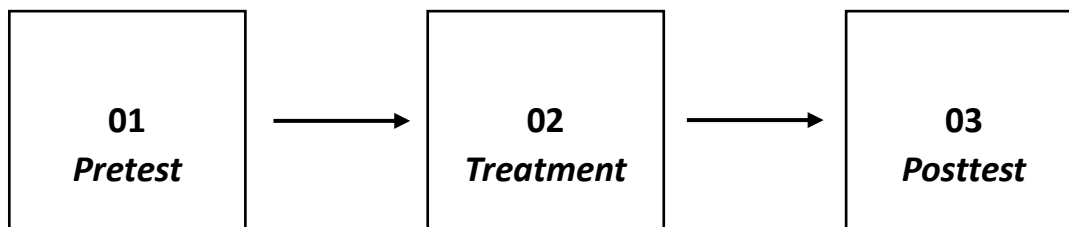
student learning outcomes, another teaching approach or model is needed. One learning approach that can improve learning outcomes is the brainstorming method (Fatmaryanti, 2013). The brainstorming method is a method that can be used to activate students, students are asked to provide ideas or mention as many examples as possible in a short time. The brainstorming method is an effort to collect opinions/ideas expressed by all group members, both individually and as a group. This method will produce various opinions or ideas from participants, both the same (or mutually supporting) and different (or conflicting) ideas. These two forms of ideas can trigger debate among participants. The brainstorming method is a technique for estimating the extent of knowledge (mastery of the material) that participants have (Rambe, 2022) (Sunandar & Effendi, 2018) (Liani et al., 2018)

One of approach Learning that is able to increase activity and learning outcomes is the brainstorming method (Fatmaryanti, 2013). Learning using the brainstorming method should be carried out in integrative thematic learning. It has been proven that learning using the brainstorming method can better influence the level of motivation and learning outcomes of students in learning the sub-theme of togetherness in diversity. (Rohmanurmeta et al., 2016). The difference in student learning outcomes in the initial measurement (Pretest) and final measurement (Posttest) in accounting subjects in basic competency accounting cycles for trading companies that use the brainstorming method has increased. This means that the brainstorming method can improve student learning outcomes in accounting subjects at SMK Negeri 3 Banjar (Ilah & Risky, 2020). The results after applying the brainstorming method in the history learning process, experienced an increase in the ability to express opinions gradually in each cycle after implementing the brainstorming method (Fauziyyah Amin, 2016). The application of the brainstorming method has been able to improve student learning outcomes in social studies subjects in Class VIII SMPN 4 Rumbio Jaya on employment and economic system material. (Karim, 2017). There is a significant (real) difference between students' scientific article writing skills before and after applying the brainstorming learning model (Hariyadi et al., 2019).

**2. RESEARCH METHOD**

This research is quantitative research and is included in the type of experimental research which aims to determine the effect of applying the brainstorming method on the learning outcomes of MTs Az-Zahra Ajanglaleng students. This research will be carried out at MTs Az-Zahra which is located in Ajanglaleng Village, Amali District, and Bone Regency. Research is planned from January to with next August 2023. The population and sample for this study were all students at MTs Az-Zahra, a total of 26 people consisting of 23 men and 3 women. The sample was determined using full sampling. This research variable uses two variables, namely variable X (brainstorming) and variable Y (learning outcomes).

The research design used is a quasi-experimental design with the One group design Pretest-Posttest Design, that is. The form of the one group pretest-posttest design chart is as follows:



Instruments that used in this research was a pretest student learning outcomes test before treatment then a posttest test of students' learning outcomes abilities after treatment.

The number of questions that will be given is 15 questions in the form of multiple choice. The form of multiple choice questions consists of two parts, namely the main question (stem) which contains the problem to be asked and a number of choices or possible answers (options). Of the number of answer choices provided, only one answer is the most appropriate, while other possible

answers are called distractors. Judging from its variety, the form of multiple choice questions consists of: ordinary multiple choice, association multiple choice, cause and effect relationship multiple choice (Hanifah, 2014). And the researchers chose to use ordinary multiple choice questions.

This research uses multiple choice tests in the data collection process. In this research, the test was carried out twice, namely pre-test and post-test. The pre-test was carried out before being given treatment with the aim of finding out the abilities of MTs Az-Zahra Ajanglaleng students. Furthermore, at the end of the research a post-test was carried out which aimed to measure the level of students' abilities after the treatment was carried out. The treatment in question is the application of the pre-test and post-test brainstorming method given to the experimental class.

The data obtained from the research results will be analyzed using inferential analysis. Data from the pretest scores and posttest scores will be compared. Thus, the step in analyzing experimental data with the One Group Pretest–Posttest experimental model is the t-test (t-test). Inferential analysis techniques are used and aimed at testing established research hypotheses. Hypothesis testing is intended to answer the hypothesis that has been proposed.

### 3. RESEARCH RESULTS AND DISCUSSION

#### 3.1 Research result

Paired sample test The T test is a test used to compare the difference between two means from two paired samples with the assumption that the data is normally distributed. Paired samples come from the same subject, each variable is taken in different situations and circumstances. This test is also called the paired t test. As for the data completeness requirements for carrying out the paired sample t test, the data used must be normally distributed. So that the hypothesis created can be analyzed using the paired sample t test.

**Table 1.**  
**Paired Sample Statistics**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	<i>Pre-test</i>	50.4231	26	9.68782	1.89994
	<i>Post-test</i>	85.6154	26	4.98860	,97835

This output shows a summary of descriptive statistics from both samples or pre-test and post-test data.

- 1) The initial test had an average value (mean) of 50.42 from 26 data. The data distribution (std. deviation) obtained was 9.687 with a standard error of 1.899.
- 2) The final test had an average value (mean) of 85.61 from 26 data. The data distribution (std. deviation) obtained was 4.988 with a standard error of 0.978.

This shows that the final test on the data is higher than the initial test. However, the range of distribution of final test data is also becoming wider and with higher standard errors.

**Table 2.**  
**Paired Samples Correlations**

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	<i>Pre-test &amp; post-test</i>	26	-,136	,509

PairedSamples Correlations shows the correlation value that shows the relationship between the two variables in paired samples. This is obtained from the bivariate Pearson correlation coefficient (with a two-sided significance test) for each pair of variables entered.

**Table 3.**  
**PairedSamplesTest**

Paired Samples Test		Paired Differences			95% Confidence Interval of the Difference		Q	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	<i>pretest - posttest</i>	-35.19231	11.48223	2.25185	-39,830	-30,554	15,628	25	0.00

Paired Samples Test is the main table of output that shows the results of the tests carried out. This can be seen from the significant value (2-tailed) in the table. The significant value (2-tailed) of the results of this study is 0.000 ( $p < 0.05$ ). so that the results of the initial test and final test experienced significant (meaningful) changes. Based on descriptive statistics of the initial test and final test, it is proven that the final test is higher so it can be concluded that the brainstorming method has an influence on learning outcomes. Explanation of the paired sample test table column as follows:

1. The first column shows the pair tests.
2. Mean shows the average difference between 2 variables
3. Std. Deviatin indicates the standard deviation of the difference scores
4. Std. The mean error shows the standard error of the difference in values used in calculating test statistics and confidence intervals
5. T shows the test statistic (denoted by t) for the paired test.
6. Df shows the degrees of freedom of the test
7. Sig (2-taile) shows the p-value or significance of the test results which correspond to the test statistic (t) and degree of freedom (df).

### 3.2 Discussion

Learning the economics material "Market" using the Brainstorming method can make it easier for students to more easily understand the learning delivered by the teacher, especially in influencing learning outcomes. The Brainstorming method provides several positive impacts in its application, including students being able to develop the ideas they have, students being more confident in expressing opinions and also being able to create better teamwork.

The learning outcomes of class VIII students at MTS Az-Zahrah Ajanglaleng in the Economics subject without applying the brainstorming method at MTS Az-Zahrah Ajanglaleng are classified as very high for 1 student ( $X > 65$ ), high for 7 students ( $55 < X < 65$ ) students from the 26 students who were the samples for this research. The above data was obtained from the results of the standard deviation test (standard deviation). Based on descriptive statistics of the initial test and final test, it is proven that the final test is higher so it can be concluded that the brainstorming method has an influence on learning outcomes. The results of this study are in line with (Karim, 2017) that the application of the brainstorming method has been able to improve student learning outcomes in the Social Sciences Subject in Class VIII SMPN 4 Rumbio Jaya on employment and economic system material. Likewise, it was explained that one learning approach that is able to increase learning activities and outcomes is the brainstorming method (Fatmaryanti, 2013). Learning using the brainstorming method should be carried out in integrative thematic learning. It has been proven that learning using the brainstorming method can better influence the level of motivation and learning

outcomes of students in learning the sub-theme of togetherness in diversity.(Rohmanurmeta et al., 2016). The difference in student learning outcomes in the initial measurement (Pretest) and final measurement (Posttest) in accounting subjects in basic competency accounting cycles for trading companies that use the brainstorming method has increased. This means that the brainstorming method can improve student learning outcomes in accounting subjects at SMK Negeri 3 Banjar(Ilah & Risky, 2020). The results after applying the brainstorming method in the history learning process, experienced an increase in the ability to express opinions gradually in each cycle after implementing the brainstorming method(Fauziyyah Amin, 2016). There is a significant (real) difference between students' scientific article writing skills before and after applying the brainstorming learning model(Hariyadi et al., 2019).

#### 4. CONCLUSION

Based on the results of the analysis and discussion, it is concluded that There is a real difference between the economic learning outcomes in the pre-test and post-test data so it is concluded that H1 is accepted and H0 is rejected, which shows that the application of the Brainstorming method is effective in improving learning outcomes.

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