



The Effect of Make a Match Learning Model on Students Mathematics Learning Motivation

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ABSTRACT

The low motivation of students' mathematics learning makes researchers want to know the effect of the Make a Match learning model on students' mathematics learning motivation. The type of research conducted was pre-experimental research with a one group pretest-posttest design. This research was conducted in a class that was selected by random sampling. From the results of data analysis, the average student pretest questionnaire results were obtained 124,45 while the average student posttest questionnaire results are 131,59. From the results of the calculation of the paired sample t-test at the real level $\alpha=0,05$ also obtained the value of $t_{count} = 5,14$ and $t_{table} = 2,048$. Because $t_{count} > t_{table}$ then reject H_0 and accept H_1 which means that students' mathematics learning motivation after applying the Make a Match learning model is better than students' mathematics learning motivation before applying the Make a Match learning model. From these results it can be concluded that there is an effect of the Make a Match learning model on students' mathematics learning motivation.

ARTICLE INFO

Article history:

Received
21 March 2024
Revised
25 April 2024
Accepted
27 May 2024

Key Word

Effect, Make a Match Learning Model, Motivation to Learn Mathematics.

How to cite

<https://pusdikra-publishing.com/index.php/josr>

Doi

[10.51178/ce.v5i2.1946](https://doi.org/10.51178/ce.v5i2.1946)



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INTRODUCTION

Mathematics is the science of logic about form, structure, magnitude, and concepts related to one another (Fahrurrozi, 2017). Mathematics is a universal science that underlies technological development. It has an important role in various disciplines and advances human thinking. Therefore, mathematics subjects need to be given to students at all levels of education to equip students to be able to think logically, analytically, systematically, critically, and creatively (Ishmatul Maula, 2019).

In education, mathematics is an important foundation. Students' success in mathematics will affect their success in other fields of study or it can be interpreted that mathematics is the source of other sciences. (Aniswita, 2021)

The success of students' learning mathematics is influenced by learning motivation in students. Learning success will be achieved if students have the will and drive to learn. Students who have high learning motivation towards learning will be moved or aroused so that they have the desire to do something that can get certain results or goals (Amna Emda, 2017).

According to Hamzah B. Uno, learning motivation is an encouragement and strength that exists in a person so that he wants to carry out learning activities or activities in order to achieve certain goals he wants. (Mohamad Syarif Sumantri, 2015) The indicators of learning motivation according to Hamzah B. Uno are: (1) the existence of a desire and desire to succeed, (2) the existence of encouragement and needs in learning, (3) the existence of future hopes and ideals, (4) the existence of rewards in learning, (5) the existence of interesting activities in learning, (6) the existence of a conducive learning environment, so that it allows a student to learn well.(Hamzah B. Uno, 2015).

In learning activities, motivation is an absolute requirement. A student will not succeed optimally if he learns without motivation or lacks motivation. (Silvia Junita, 2019) In other words, success and failure in learning are influenced by learning motivation. Because learning activities will be carried out by someone if he has motivation in learning, and vice versa if someone has no motivation in learning, it will not be possible for him to carry out learning activities. (Kompri, 2015) The functions of learning motivation are: (1) encourages the emergence of behaviour or actions, (2) directs behaviour or actions, (3) drives behaviour or actions, (4) encourages effort and achievement. (Ida Bagus Made Astawa, 2018).

The importance of learning motivation in the learning process makes teachers have an important task in fostering student learning motivation, especially in mathematics, because mathematics has an important role in shaping students' personalities who are able to think logically, analytically, systematically, critically, and creatively. Given the important role of mathematics in shaping students' personalities, high learning motivation in learning mathematics is certainly needed for every level of education.

From the results of observations made on 29 and 31 August 2023, it was found that there were still many students who had low motivation to learn mathematics. This can be seen when learning, students lack the desire to obtain good learning outcomes. This is evidenced by the fact that there are still many students who do not complete their assignments and even some students do not do them. In addition, students also lack the drive and need to learn such as the absence of students who ask questions and express opinions on material that is not understood, even students tend to pay less attention to the teacher

when explaining the material. Some are busy chatting, making the class noisy so that the learning environment is not conducive.

The importance of learning motivation in students makes the above problems need to find a solution. One solution that teachers can do is to apply the *Make a Match* learning model in learning. According to Shilphy A. Octavia, the *Make a Match model* is able to increase student learning motivation. (Shilphy A. Octavia, 2020) This is supported by the opinion of Faizah who said that the *Make a Match* model is a learning model that is carried out while playing. Because it is carried out while playing, this model can make students less tense in learning. In addition, learning while playing will cause students to be more enthusiastic in learning, so that student motivation will increase. (Faizah, 2020) Miftahul Huda also argues that *Make a Match* can increase student learning motivation (Miftahul Huda, 2017). Because one of the advantages of this model, students look for partners while learning a concept or topic in a fun atmosphere. If in the classroom a pleasant atmosphere is created, students become more motivated to learn (Nur Islamiati, 2017).

The *Make a Match* learning model is a learning model that invites students to find answers to questions or pairs of concepts through a pair card game. (Andi Sulistio, 2022) The *Make a Match* model is carried out by providing cards that contain questions and cards that contain answers, each student gets one card, then the teacher asks students to match the question card he holds with the answer card held by his friend within a specified time. For students who can match their cards, they will be given points. (Rusman, 2014) As for its implementation, the *Make a Match* model must be supported by student activeness to move to find a partner with a card that matches the answer or question on the card. Students who are active in following learning with this model will have a meaningful learning experience. (Aris Shoimin, 2014)

Miftahul Huda suggests the steps of *Make a Match*, namely (1) The teacher presents the material or gives assignments to students to study the material at home (2) Students are divided into 2 groups, for example group A and group B are divided. Both groups are asked to face each other (3) The teacher distributes question cards to group A and answer cards to group B (4) The teacher tells students that they must find/match the cards they hold with other groups' cards. The teacher also needs to convey the maximum time limit he/she gives them (5) The teacher asks all members of group A to find their partners in group B. If they have found their partners, the teacher asks them to report to him/her. The teacher records them on the prepared paper (6) When the time is up, they should be told that the time is up. Students who have not found a partner are asked to gather separately (7) The teacher calls one pair to present.

Other pairs and students who did not get a partner pay attention and give responses whether the pair is suitable or not (8) Finally, the teacher confirms the correctness and compatibility of the questions and answers of the presenting pair (9) The teacher calls the next pair, and so on until all pairs make presentations (Miftahul Huda, 2017).

The Make a Match model is a learning system that prioritises cooperation, interaction skills and thinking skills through games by finding pairs through cards.(Shilphy A. Octavia, 2020) This model can make the learning process more student-centred, and create more meaningful and enjoyable learning for students. This fun *Make a Match* model will make students comfortable, happy but serious in carrying out learning.

From the description above, the researcher wants to see students' mathematics learning motivation that by applying the *Make a Match* learning model can affect students' mathematics learning motivation in a better direction than before.

RESEARCH METHOD

This study was conducted in class VIII MTsN 7 Agam in the 2023/2024 academic year. The type of research conducted was pre-experimental research with the aim of knowing how the effect of the *Make a Match* learning model on students' motivation to learn mathematics. From class VIII consisting of seven classes, random sampling of class VIII-6 was selected as the sample class. With a research design of one group pretest-posttest design, the sample class will be given a pretest first, then the class will be applied the *Make a Match* model in learning and finally will be given a posttest. The existence of a pretest before being given treatment makes the results of the treatment more accurate because it can compare with the situation before being given treatment (Sugiyono, 2013). The difference between the pretest results and the posttest results is the effect or effect of the treatment given (Muri Yusuf, 2017). The pretest and posttest given in the form of a mathematics learning motivation questionnaire which has first been validated by 6 experts and carried out validity and reliability tests.

RESULTS AND DISCUSSION

This study was conducted in class VIII MTsN 7 Agam from 30 October to 14 November 2023. The research data was obtained from giving a questionnaire of motivation to learn mathematics to the sample class, namely class VIII-6 students totalling 29 people. The questionnaire given had previously been tested in class VIII-2.

Giving questionnaires to the sample class was done twice. The first time was given before the *Make a Match* model was applied in learning while the second questionnaire was given after the *Make a Match* model was applied in learning. The questionnaire given totalled 37 statements. The 37 statements come from 6 indicators of learning motivation.

The percentage of *pretest* and *posttest* questionnaire scores for each indicator of learning motivation can be seen in table 1 below.

Table 1.
Percentage of *Pretest* and *Posttest* Questionnaire Scores for Each Learning Motivation Indicator

No.	Indicators	Questionnaire	
		Pretest	Posttest
1	Desire and desire to succeed	63%	67%
2	The existence of encouragement and needs in learning	65%	67%
3	The existence of future hopes and aspirations	67%	74%
4	The existence of rewards in learning	72%	78%
5	The existence of interesting activities in learning	66%	71%
6	A conducive learning environment	67%	70%

The results of the overall questionnaire calculation can be seen in table 2 below.

Table 2.
Pretest and Posttest Questionnaire Calculation Results

Class	Test Type	n	x_{\max}	x_{\min}	\bar{x}	s^2	s
VIII-6	Pretest	29	164	84	124,45	419,04	20,47
	Posttest	29	168	89	131,59	441,18	21

From table 2, it can be seen that there is an average difference between the pretest score and the posttest score. The average *pretest* score was 124.45 while the average *posttest* score was 131.59. This means that the average student motivation to learn mathematics has increased, from 124.45 to 131.59.

To draw conclusions about the questionnaire data on students' motivation to learn mathematics, it is necessary to do statistical analysis, namely normality test, homogeneity test, and hypothesis testing. First, the normality test with the *Liliefors test* was carried out to see whether the *pretest* and *posttest* data were normally distributed or not. With the criteria $L_0 < L_{\text{tabel}}$, the *pretest* and *posttest*

data were found to be normally distributed. Second, the homogeneity test with the F test was conducted to determine whether the *pretest* and *posttest* data had homogeneous variances or not. From the calculation results, obtained $F_{hitung} < F_{tabel}$ that is $1,05 < 1,88$ so it can be concluded that the *pretest* and *posttest* data also have homogeneous variances.

After it is known that the *pretest* and *posttest* data are normally distributed and have homogeneous variances, then the hypothesis test is carried out using the *paired sample t-test*. The results of the hypothesis test can be seen in table 3 below.

Table 3.
Results of Pretest and Posttest Hypothesis Test with Paired Sample t-test and SPSS Software

No.	Test Type	n	\bar{x}	t_{hitung}	t_{tabel}	Sig	α
1	Pretest	29	124,45	5,14	2,048	0,000	0,05
2	Posttest	29	131,59				

Based on table 3 above, the value of $t_{hitung} = 5,14$. With real level $\alpha = 0,05$ and $dk = 28$ obtained $t_{tabel} = 2,048$. Since $t_{hitung} > t_{tabel}$, that is $5,14 > 2,048$ then H_0 is rejected. By testing the hypothesis using SPSS software, it is obtained that $Sig = 0,000$. Because $Sig < 0,05$ then the decision H_0 rejected and H_1 is accepted.

From the research results obtained, it can be seen that students' motivation to learn mathematics has changed for the better. This can be seen from the results of the calculation of the overall student *pretest* and *posttest* questionnaire averages as well as the percentage of *pretest* and *posttest* questionnaire scores for each learning motivation indicator. From the data obtained, the calculation of the average *pretest* questionnaire results is 124.45 and the average *posttest* questionnaire results is 131.59. This shows that the average student questionnaire results have increased. In testing the hypothesis using the *paired sample t-test* test, it was found that $t_{hitung} = 5,14$ greater than $t_{tabel} = 2,048$ with real level $\alpha = 0,05$ and $dk = 28$. Because $t_{hitung} > t_{tabel}$, that is $5,14 > 2,048$ then H_0 rejected and accept H_1 i.e. students' mathematics learning motivation after applying the *Make a Match learning* model is better than students' mathematics learning motivation before applying the *Make a Match learning* model.

The *Make a Match Learning Model* has a positive influence on the indicator of the desire and desire to succeed in students. Where previously, there were still many students who did not do the exercises given until completion or even there were still some students who did not do the exercises. However, during

the implementation of the *Make a Match* learning model, many students were seen to have the desire and desire to succeed in learning. This can be seen when looking for a partner from their card, they are excited and do not give up easily in completing the assigned task. Even though the problem is difficult, they also try to solve it. The students were also enthusiastic about finding the correct pair of cards. In completing the task they also seemed to be competing with each other.

In students, the existence of encouragement and needs in learning also gets a positive influence from the application of the *Make a Match* learning model. Where when the teacher explained the material, the students began to pay attention seriously. Not only smart students, students who were previously not active in asking questions began to actively ask when something was not understood. They also seemed to start actively answering the questions given. This change indicates that students began to have a strong motivation to learn and began to realise that learning is a need that must be fulfilled.

The *Make a Match* learning model also began to affect the indicator of future hopes and aspirations in students. Where previously there were still many students who cared less about the mathematics scores they got. However, after the application of the *Make a Match* learning model, many students began to care about the mathematics scores they obtained. They began to set a minimum value that they had to obtain. This can be seen when they do the tasks given, they want to find their partner correctly in order to obtain satisfactory learning results.

In the application of the *Make a Match* learning model, students' motivation to learn mathematics began to be influenced for the better. The existence of awards in the form of verbal statements when they managed to find their card pairs correctly made them more eager to learn. This result is in accordance with the opinion of Hasbiyallah and Nayif Sujadi that verbal statements or other forms of appreciation for good behaviour or good student learning outcomes are the easiest and most effective ways to increase student learning motivation (Hasbiyallah, 2019).

In addition to the rewards in learning, the existence of interesting activities, namely the application of the *Make a Match* learning model, also affects students' motivation to learn mathematics. Because one of the advantages of this model is that students learn a topic in a fun atmosphere. This model is implemented while playing which makes students less tense in learning. This is very visible when applying the *Make a Match* model in the classroom the students are eager to find pairs of their respective cards. They try to solve the problems on the question cards. The teacher also tried to create a

conducive learning environment by inviting students to help their friends. In doing the assigned tasks, students will also be guided and supervised by the teacher. The students are also allowed to ask questions if there is something they do not understand from the cards given.

Based on the discussion above, it can be seen that each indicator of student learning motivation has changed for the better, so this indicates that students' motivation to learn mathematics has also changed for the better. The research results obtained are in line with the opinion of Shilphy A. Octavia that the *Make a Match* model is able to increase student learning motivation. (Shilphy A. Octavia, 2020) This is supported by the opinion of Faizah who said that the *Make a Match* model is a learning model that is carried out while playing. Because it is carried out while playing, this model can make students less tense in learning. In addition, learning while playing will cause students to be more enthusiastic in learning, so that student motivation will increase. (Faizah, 2020) In addition, the results of this study are also in line with Miftahul Huda's opinion that *Make a Match* can increase student learning motivation. (Miftahul Huda, 2017) Because one of the advantages of this model is that students look for partners while learning a concept or topic in a fun atmosphere. If in the classroom a pleasant atmosphere is created, students become more motivated to learn (Nur Islamiati, 2017).

The same thing was also found in the results of research by Muhammad Ruslan Layn and Arie Anang Setyo in 2021 with the title "The Effect of the *Make a Match* Learning Model on Student Learning Motivation in Class VII SMP Negeri 5 Kota Sorong" which found that there was an effect of the *Make a Match learning* model on the learning motivation of class VIII students of SMP Negeri 5 Kota Sorong. (Muhammad Ruslan Layn, 2021) In line with the results of Khoiri Nurwandi's research in 2020 with the title "The Effect of Using the *Make a Match* Learning Model on Students' Mathematics Learning Motivation in Mathematics Subjects in Class VII of Madrasah Tsanawiyah Negeri 2 Jambi City" which found that the *Make a Match* learning model had an effect on students' mathematics learning motivation. (Khoiri Nurwandi, 2020).

Based on some relevant research results with the results of this study, it can be concluded that there is a significant effect of the application of the *Make a Match* learning model on the motivation to learn mathematics of class VIII students of MTsN 7 Agam in the 2023/2024 academic year.

CONCLUSION

Based on the results of the research and discussion, the conclusion drawn is that there is a significant effect of the application of the *Make a Match*

learning model on the motivation to learn mathematics of class VIII students of MTsN 7 Agam in the 2023/2024 academic year. This can be proven by the increase in the average questionnaire results, namely from the pretest result of 124.45 to the posttest result of 131.59. As well as proof can be seen in the acquisition of values t_{hitung} and t_{tabel} . The value of $t_{hitung} = 5,14$ and with a real level $\alpha = 0,05$ and $dk = 28$, value $t_{tabel} = 2,048$ where $t_{hitung} > t_{tabel}$.

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