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THE THINK PAIR SHARE LEARNING MODEL FOR DEVELOPING CRITICAL THINKING SKILLS IN MATHEMATICS AMONG EIGHTH GRADE STUDENTS

Martha Hart Damanik[1], Lois Oinike Tambunan[2], Chirsta Voni Rouina Sinaga[3]

[a] Pendidikan Matematika, Fakutas Keguruan dan Ilmu Pendidikan Universutas Nommensen Pematangsiantar, Indonesia, Indonesia
[b] Pendidikan Matematika, Fakutas Keguruan dan Ilmu Pendidikan Universutas Nommensen Pematangsiantar, Indonesia, Indonesia
[c] Pendidikan Matematika, Fakutas Keguruan dan Ilmu Pendidikan Universutas Nommensen Pematangsiantar, Indonesia, Indonesia

Corresponden E-Mail: marthadamanik2018@gmail.com

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ABSTRACT

This study aims to determine the effect of the think pair share learning model on the mathematical critical thinking skills of class VIII at UPTD SMP Negeri 7 Pematangsiantar. The sample in this study was class VIII-4, totaling 30 students. The research data was obtained from questionnaires and tests. The questionnaire serves to determine whether students have implemented the think pair share learning model. The test serves to determine students' mathematical critical thinking skills on the material of the system of linear equations in two variables (SPLDV). The test consisted of 5 questions and a questionnaire of 30 items, after going through validity and reliability tests, was declared valid and reliable. The design used in this study was a one-shot case study. The data analysis technique used prerequisite tests, namely the normality test and the linearity test. To test whether the think pair share learning model affects mathematical critical thinking skills, a simple linear regression test was used. Based on the research data, the regression equation Y = 29.354 + 0.828X was obtained. The significance test of the influence was obtained and tcount > ttable (9.642 > 2.048) or p (sig.) < 0.05 (0.000 < 0.05) so that there is a significant influence between the think pair share learning model on the mathematical critical thinking ability of class VIII students at UPTD SMP Negeri 7 Pematangsiantar in the 2025/2026 academic year. The variance contribution of variable X (think pair share learning model) to variable Y (mathematical critical thinking ability) is 76.9%.

Keywords:
Model Pembelajaran, Think Pair Share, Kemampuan Berpikir Kritis Matematis

ABSTRAk

Penelitian ini bertujuan untuk mengetahui pengaruh model pembelajaran think pair share terhadap kemampuan berpikir kritis matematis kelas VIII di UPTD SMP Negeri 7 Pematangsiantar. Sampel pada penelitian ini adalah kelas VIII-4 yang berjumlah 30 siswa. Data penelitian diperoleh dari angket dan tes. Angket berfungsi untuk mengetahui apakah siswa telah melaksanakan model pembelajaran think pair share. Tes berfungsi untuk mengetahui kemampuan berpikir kritis matematis siswa pada materi sistem persamaan linear dua variabel (SPLDV). Tes sebanyak 5 butir soal dan angket sebanyak 30 butir, setelah melalui uji validitas dan reliabilitas dinyatakan valid dan reliabel. Desain yang digunakan dalam penelitian ini adalah one-shot case study. Teknik analisis data menggunakan uji prasyarat yakni uji normalitas dan uji linearitas. Untuk menguji apakah model pembelajaran think pair share mempengaruhi kemampuan berpikir kritis matematis digunakan uji regresi linear sederhana. Berdasarkan

data penelitian, diperoleh persamaan regresi Y= 29.354 + 0,828X. Uji signifikansi pengaruh diperoleh dan thitung > ttabel (9,642 > 2,048) atau p (sig.) < 0,05 (0,000 < 0,05) sehingga terdapat pengaruh yang signifikan antara model pembelajaran think pair share terhadap kemampuan berpikir kritis matematis siswa kelas VIII Di UPTD SMP Negeri 7 Pematangsiantar tahun ajaran 2025/2026. Sumbangan varians variabel X (model pembelajaran think pair share) terhadap variabel Y (kemampuan berpikir kritis matematis) sebesar 76,9%...

1. Introduction

Education as an open system is not free from problems, both internal and external problems. Internal problems are problems that arise within the components contained in education itself as a system, including curriculum problems, educational problems, educational administration and so on. External problems are problems that arise within education as a system with other broader systems in all of human life, including problems of unequal education, low quality of education, problems of efficiency, relevance and others. Therefore, to overcome these problems, it is necessary to improve the quality of education at every level (Nainggolan et al., 2022) .

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual religious strength, self-control, personality, intelligence, noble character and skills needed by themselves and society (Wicaksono et al., 2019) . Education is a medium that plays a very important role in creating quality and potential human beings in the broadest sense, through education a process of self-maturation will occur so that in the process of making decisions regarding a problem faced, it is always accompanied by a great sense of responsibility (Ginting, 2022) . In this process, each individual is equipped with the ability to make a decision that is responsible for the problems that occur. In solving various problems, mathematics has an important role. Mathematics is a compulsory subject at every level of education. It plays a crucial role in enhancing human thinking and the development of science and technology.

Mathematics plays a role in solving various problems in everyday life. It also helps develop students' critical, logical, and systematic thinking skills. Furthermore, mathematics is a communication tool and a means of interaction between individuals and groups, enabling them to effectively explain existing problems. In studying mathematics, students are expected to master various competencies, including attitudes, knowledge, and skills. From these competencies, students can acquire and master specific competencies, which serve as a means of achieving the objectives of mathematics learning. (Dalimunthe et al., 2022) .

In education, students must be trained to develop their thinking skills to solve problems in learning. Learning is essentially the addition of new information and skills provided by teachers and must be possessed by students (Wuandari et al., 2019). The learning process in schools focuses not only on quantity but also on quality and fluency. The role of a teacher in schools is to develop each student's abilities and talents so that learning is challenging and complex (Pradana, 2021) . Critical thinking is very important to develop in schools because it is a measuring tool to determine the extent to which students understand the material being taught, especially in mathematics. Critical thinking skills help students understand the learning methods used, such as through discussion and exchange of arguments (Lestari & Luritawaty, 2021) . Thus, critical thinking skills are an aspect that students need to have in schools because it can be used as a measuring tool to measure the extent to which they have mastered the material taught by teachers, especially in mathematics. According to (Lasmanah, 2017) , critical thinking is the ability to solve problems rationally according to logical stages and produce more efficient solutions. According to Sanders, the key to improving critical thinking skills in mathematics is exploring mathematical concepts and techniques (Sari & Mayona Chantika, 2019) . Furthermore, according to researchers, critical thinking skills are students' ability to resist easily accepting information in understanding, solving problems, and being able to create mathematical models, thus being able to provide results in the answers.

Based on the description above, critical mathematical thinking skills are an important skill that must be developed in the learning process and possessed by every student through mathematics instruction at school. After studying mathematics at school, students will possess useful mathematical skills and be able to make decisions in everyday life. (Pardede et al., 2022) .

Linear Equations in One Variable (PLSV) are topics frequently encountered in everyday life. To solve everyday problems that require the use of mathematics, the first step is to create a mathematical model. Problems frequently encountered in PLSV involve numbers and figures related to money, total expenses, age, and so on. Therefore, it is important to study the material on PLSV. (Heliza, 2023) . Facts found in the field during mathematics learning, when teachers give students the opportunity to ask questions about mathematics learning materials, students tend to be more passive and do not want to ask. In every math problem given, students are rarely able to foster interest in mathematics lessons. In mastering mathematical concepts, students are classically taught by teachers, but in individual implementation, students do not understand them. If this situation occurs without changes in poor teaching methods and systems, it can result in students having increasingly difficulty understanding the mathematics material presented by teachers in class (Editia, 2020) . Based on the results of an interview with a mathematics subject teacher, Mrs. Ruth Tambunan, on April 16, 2025 at the UPTD SMP Negeri 7 Pematangsiantar, information was obtained that one of the contributing factors was the learning approach used in class which was still teacher-centered, so that students became passive in the learning process. As a result, learning was less effective and students had difficulty understanding the material, especially in more advanced

material. Through interviews conducted with subject teachers, it was stated that one of the difficulties faced by students at the school in the subject of Single Variable Linear Equations (PLSV), students had difficulty in making mathematical models from the questions given, especially when the questions given were different from the example questions given by the teacher.

This is caused by several factors such as teacher-centered learning, lack of understanding of the material being studied, and errors in reading or understanding the questions. Students' understanding of the given math problems needs to be improved. This difficulty, as identified, can stem from several factors, including methods and learning models that tend to be teacher-centered, thus providing less space for students to explore and build understanding independently. Teachers and students must be actively involved in learning so that it can influence students' critical thinking skills in learning mathematics. One innovation in developing the learning process is by selecting appropriate learning models and methods.

A learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve certain learning objectives and serves as a guideline for learning designers and teachers in planning teaching and learning activities (Kurniawan et al., 2018) . And according to (Sulianto et al., 2019) a learning model is a plan or a pattern used as a guideline in planning classroom learning or learning in tutorials. According to (Rahmawati & Hanipah, 2018) states that a learning model is a whole series of presentations of teaching materials that include all aspects before, during and after learning carried out by teachers as well as all related facilities used directly or indirectly in the learning and teaching process. Thus it can be concluded that a learning model is a conceptual framework that emphasizes more on application in the classroom so that the learning model can be used as a reference in learning activities in communicating lesson content to students. In connection with the above, learning mathematics in the classroom, teachers must apply a learning model that requires students to have mathematical critical thinking skills. One way teachers do this is by using the Think Pair Share learning model in classroom instruction. To achieve educational goals, which require students to have thinking skills, be able to make decisions about various problems, solve problems, and find solutions to everyday life issues, an appropriate learning model is needed, one of which is the Think Pair Share model.

According to Tri anto & Istarani (Handayani & Yanti, 2017) Think Pair Share is a type of cooperative learning designed to influence student interaction patterns. Think Pair Share is good for training students' thinking frameworks well, therefore this learning model emphasizes improving students' reasoning skills, critical thinking skills, imagination, and analytical skills towards a problem. Therefore, it is expected that the Think Pair Share learning model can arouse curiosity and enjoyment in learning mathematics both in groups and help friends overcome difficulties during learning in the classroom. Based on the results of research conducted by (Rati & Murda, 2017) concluded that the TPS learning model proves that changes in students' critical thinking skills are getting better and in accordance with the learning achievements achieved by

students. Based on the results of research by (Fitri & Budiman, 2017) that the TPS learning model is able to improve critical thinking skills and mathematics learning outcomes of elementary school students. Based on the description above, the researcher was motivated to conduct research with the title "The Effect of the Think Pair Share Learning Model on the Critical Mathematical Thinking Skills of Class VIII Students at UPTD SMP Negeri 7 Pematangsiantar".

2. Method

This type of research is quantitative research. According to (Zulfah, 2017) quantitative research can be interpreted as a research method based on the philosophy of positivism, used to research certain populations or samples, sampling techniques are generally carried out randomly, data collection uses research instruments, data analysis is quantitative/statistical with the aim of knowing how the influence of the Think Pair Share (TPS) learning model on students' mathematical critical thinking skills in the SPLDV material of class VIII UPTD SMP Negeri 7 Pematangsiantar.

In this research, the design used is One-Shot Case Study. The treatment given to the experimental class was the use of the Think Pair Share (TPS) learning model. Researchers only conducted treatment once which was thought to have had an effect. Then a post-test was held and conclusions were drawn (Sugiyono, 2023).

This research will be conducted in class VIII of UPTD SMP Negeri 7 Pematangsiantar, Jl. Sisingamangaraja No. 20, North Siantar District, Pematangsiantar City, North Sumatra. The reason the researcher chose this location is because research like this has never been conducted at this school. This research was conducted in the odd semester of the 2025/2026 academic year and the time used by the researcher to conduct the research was approximately 1 month (Nuryasana, 2019) .

The sample of this study was 30 students of UTD SMP Negeri 7 Pematangsiantar, class VIII-3, who were selected to be samples in the research that the researcher will conduct with the hope that the research results can describe the entire population. According to (Sugiyono, 2023) theoretically, a variable can be defined as an attribute or trait or value of another person, object or activity that has certain variations between one person and another or one object to another (Khaesarani & Khairani Hasibuan, 2021) . According to (Rachmawati & Erwin, 2022) a research instrument is a tool used to measure observed natural and social phenomena. Specifically, all of these phenomena are called research variables. In this study, the research instruments used were test questions and questionnaires (Kamil et al., 2021) .

The student perception questionnaire was designed to determine the extent to which students' views and experiences regarding the Think Pair Share learning model applied in the learning process. This model aims to improve students' activeness and critical thinking skills through the stages of independent thinking (think), discussing with a partner (pair), and sharing the results of the discussion with a partner (Share). To obtain directed and systematic data, a questionnaire grid was prepared as a basis for compiling statement items (Destiniar et al., 2019) . Based on the grid, it contains important indicators, such as understanding of the model steps, student activeness in

discussions, increased understanding of the material, and student learning motivation (Fardiansyah et al., 2019) . The statements in the questionnaire were compiled as many as 30 items

3. Results and Discussion

Description of Research Results

The description and analysis of data in this study were used to describe the results of quantitative data from student tests that had been given to one class as a sample of the study, in order to determine the effect of the Think Pair Share learning mode on students' mathematical problem-solving abilities. This data description is useful for explaining and describing research data that includes data ranges, maximum values, minimum values, mean values, and so on.

The researcher conducted the research using quantitative methods. The implementation of the research and data collection were carried out at the UPTD of SMP Negeri 7 Pematangsiantar, Jl. Sisingamangaraja No. 20, Siguang-guang, North Siantar District, Pematangsiantar City, North Sumatra Province in grade VIII-3. The learning process was carried out using the think pair share learning mode on the Two Variable Linear Equation System (SPLDV) material in grade VIII. The population used in this study was all grade VIII students. Until the study consisted of 1 grade, namely grade VIII-3 with a total of 30 students (Maharani et al., 2021) .

instruments used in this study were questionnaires and tests, with the questionnaire consisting of 30 statement items and the test consisting of 5 descriptive questions containing four indicators of mathematical critical thinking skills. The questionnaire and test were submitted to 2 (two) validators, namely Theresia Monika Siahaan, M.Pd. (Lecturer at HKBP Nommensen University, Pematang Siantar in the field of mathematics education) and Herawati Sinaga, S.Pd. (Mathematics teacher at UPTD SMP Negeri 7 Pematangsiantar) to determine whether the questionnaire and test were suitable for use in research. The results of instrument validation from the 2 validators, the researcher concluded that the questions were suitable for use without revision.

Research Description

The purpose of this research was to determine whether there is an influence of the *Think Pair Share learning mode* on the mathematical critical thinking skills of grade VIII students at UPTD SMP Negeri 7 Pematangsiantar in the 2025/2026 academic year. The data in this research are the results of students' mathematical critical thinking skills tests (Siti Sundari et al., 2019) .

The mathematics material taught in this study is the System of Linear Equations in Two Variables (SPLDV). After being given treatment in the form of *a Think Pair Share learning mode* , a student questionnaire was given to implement the mode which would be filled out by students. After that, to see the ability of mathematical critical thinking, a critical thinking ability test was given that had been tested first in grade IX-1 (Anggraeni et al., 2021) . In this study, researchers obtained data from the results of a student questionnaire implementing the mode and a mathematical critical thinking ability test conducted in grade VIII-3. The questionnaire was used to see whether students had implemented the *Think*

Pair Share learning mode according to the steps, while the mathematical critical thinking ability test was the questions given after implementing the *Think Pair Share learning mode* (Maulana, 2019) *.* The results of the mode implementation questionnaire and the results of the mathematical critical thinking ability test were used to determine whether *the Think Pair Share learning model* had an effect on mathematical critical thinking abilities (Janah et al., 2019) .

The research instruments used in this study were a student questionnaire using the Think Pair Share learning mode consisting of 30 statements and a mathematical critical thinking ability test consisting of 5 essay-type questions. The researcher conducted a trial of the *Think Pair Share learning mode implementation questionnaire* and the mathematical critical thinking ability test that would be used to collect data on the sample. After the trial was carried out, the next step was to collect data on the implementation mode questionnaire scores and the mathematical critical thinking ability test scores using the questions that had been tested. Then, grade VIII-3, which was used as the sample grade, was given treatment using the *Think Pair Share learning mode* with SPLDV material. The data on the student questionnaire scores using the Think Pair Share learning mode and *the* mathematical critical thinking ability scores obtained using the *SPSS 2.6.0 program* are presented in Table *4.10*

Table 1. Description of Peaksanaan Mode and Capabilities Mathematical Critical Thinking

Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation
Questionnaire (X)	30	80	97	87.70	4,610
Descriptive Test (Y)	30	34	50	43.23	4,352
Valid N (listwise)	30				

Think Pair Share learning mode with a minimum score of 80 and a maximum score of 97. The maximum score for the student questionnaire for implementing the mode was 97. **The** average score for the student questionnaire for implementing the mode was 87.70. This shows that students have followed the steps of the *Think Pair Share learning mode* well. The minimum score of mathematical critical thinking ability is 34 and the maximum score is 50. The maximum score of the mathematical critical thinking ability test is 50 with a conversion of 100 for a score of 50. The KKM value for the mathematics learning outcomes obtained by students is 75. The average value of students' mathematical critical thinking ability is 43.23. Based on the average value of the learning outcomes, it shows that students have obtained learning outcomes above the KKM value.

Hypothesis Test Analysis

Simple Linear Regression Test

The strength of the relationship between the independent variable (X) and the dependent variable (Y), as well as the direction of the relationship between the independent variable (X) and the dependent variable (Y), is measured using a simple linear regression test.

Table 2. Simple Linear Regression Test Results

Coefficients [a]

Mode		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	29,354	7,539		-3,894	.001
	Think Pair Share Learning Mode	.828	.086	.877	9,642	.000

a. Dependent Variable: Mathematical Critical Thinking Skills

Based on the table, a constant of 2 9 . 354 while the regression coefficient value is 0.82 8 . The simple regression equation can be written as follows:

Y = 29.354 + 0.828X

Information :

Y = Mathematical critical thinking ability

X = Score of Implementation of the *Think Pair Share Learning Model*

So, it can be translated:

1. The constant 2 9 . 354 means that if students do not implement the think pair share learning model (variable X = 0), then the value of mathematics learning outcomes (Y) is 2 9 . 354
2. The regression coefficient value of 0.82 8 means that for every additional 1 score for implementing *the think pair share learning strategy* , the ability to think critically in mathematics will increase by 0.82 8 .
3. The value of b > 0, then there is a positive influence of variable (X) on variable (Y)

From the equation above, it can be concluded that the think pair share learning mode has a positive influence on students' mathematical critical thinking abilities.

Coefficient of Determination Test

Table 3. R square

Mode Summary

Mode	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.877 [a]	.769	.760	2,131

Based on the table, the value obtained is The correlation/level of relationship between variables (R) is 0.877 . Meanwhile, the coefficient of determination (R square) is 0.769 , so the percentage coefficient of determination can be formulated as follows:

KD = 0.769 X 100%

KD = 76.9 %

The percentage coefficient of determination shows that the contribution of the variance of variable X (*think pair share* learning mode) to variable Y (mathematical critical thinking ability) is 76.9 %.

t-Test Analysis

The regression coefficient is tested using the t-test. Assuming other variables are constant, this test is used to assess the significance of the independent variable on the dependent variable .

Table 3. Test Results with t-Test

Coefficients [a]

Mode		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	29,354	7,539		-3,894	.001
	Think Pair Share Learning Mode	.828	.086	.877	9,642	.000

a. Dependent Variable: Mathematical Critical Thinking Skills

Based on the table, the sig. value for the influence of variable X on variable Y is 0.0 01 < 0.05. Given n = 30 , then df = n - k = 30-2 = 28. With df = 28 then $t_{hitung} > t_{tabel}$ = 9.642 > 2.048 . So based on the significant value (Sig) and the value t_{hitung} , the hypothesis H1 is accepted, namely there is an influence of *the think pair share learning model* on students' mathematical critical thinking abilities.

Discussion

This research was conducted at the UPTD of SMP Negeri 7 Pematangsiantar involving Grade VIII-3 who will be given *the Think Pair Share learning mode treatment* . Pretesting test instruments and questionnaires prior to conducting research is highly recommended. This aims to determine whether statements or questions align with research guidelines. In this study, grade IX-1 students were the pilot class, administering the questionnaire and testing mathematical critical thinking skills.

Then the validity, reliability, difficulty level, and question discrimination tests were conducted. Based on the trial of the student questionnaire implementing the mode and mathematical critical thinking ability test that had been carried out with the number of trial students, N = 30 and a significance level of 5% obtained r_{tabel}= 0.361 . From the results of the validity test calculation on the mode implementation questionnaire and the mathematical critical thinking ability test, 30 mode implementation questionnaires and 5 mathematical critical thinking ability description questions were declared valid (Yudha, 2019) .

Then for the decision-making criteria in the Cronbach's Alpha technique if the calculated r value is > 0.70 then the model implementation questionnaire and mathematical critical

thinking ability test are said to be reliable, so the questionnaire and test can be used in research. From the results of the reliability test that has been carried out, the Cronbach's Alpha value for the questionnaire is 0.827 . 0.827 > 0.70 then it can be concluded that this questionnaire is reliable . While the results of the reliability test from the test obtained a Cronbach's Alpha value of 0.841. Because 0.841 > 0.70 then it can be concluded that this test is reliable. Furthermore, in the calculation of the difficulty level test, it shows that there are 2 questions that are said to be difficult, 2 questions are categorized as medium and 1 question is categorized as easy. Then, the discriminatory power shows that there are 4 questions categorized as having good discriminatory power and 1 other question categorized as having sufficient discriminatory power (Mayadiana, 2019) .

After knowing that the student questionnaire implementing the mode and mathematical critical thinking ability test that has been tested has met the research standards, then the researcher conducted research with the research standard stage, then the researcher conducted research with the initial stage of providing treatment to the class using *the think pair share learning mode* . After completing the learning using the mode, a student questionnaire was given to implement the model by the students to find out that the students had implemented the learning model that had been applied. After giving the questionnaire, the researcher gave a mathematical critical thinking ability test on the material of the Two Variable Linear Equation System (SPLDV) to find out the students' mathematical critical thinking ability after being given the treatment.

After obtaining the peaking mode score and the mathematical critical thinking ability test score, the data was analyzed. The calculation results obtained an average peaking mode *think pair share score* of 87.70 and an average learning outcome score of 43.23.

There are normality tests and linearity tests as prerequisites before hypothesis testing. The normality test uses the Kolmogorov-Smirnov model *in the* SPSS 2.6.0 program *with a* sig value criterion > 0.05. The normality test of *the think pair share model implementation data* obtained significant results (Sig.) of 0.200 > 0.05, then the implementation data of *the think pair share model* is normally distributed. Meanwhile, the significant results (Sig.) of the mathematical critical thinking ability data are 0.200 > 0.05, so the learning outcome data are normally distributed. (Tillawari, 2020) .

After conducting the normality test, the researcher conducted a linearity test. In this linearity test using *the SPSS 2.6 program* , the significant result (Sig.) of *the Deviation from Linearity row* was 0.974 > 0.05, so there is a linear relationship between the independent variable (X) and the dependent variable (Y). So it can be concluded that there is a linear relationship between *the think pair share* learning model and students' mathematical critical thinking abilities.

Next, the researcher conducted a hypothesis test consisting of a simple linear regression test and a t-test. Based on the simple linear regression test, the regression equation Y = 29,354 + 0.828 X was obtained , meaning that for every 1 additional score of the implementation of *the think pair share model* , the mathematical critical thinking ability will increase by 0.828 . In addition, the *sig. value was obtained in the regression line of 0.000 <0.05, so H1 was accepted, meaning that there was an influence of the think pair share* learning model on students' mathematical critical thinking abilities. Furthermore, the *R*

Square value was obtained at 0.769 , so that the variance contribution of the variable X (*think pair share* learning model) on the Y variable (mathematical critical thinking ability) of the two-variable linear equation system material was 76.9 % (Leniati & Indarini, 2021)

The final hypothesis test is the t-test. The sig. value obtained for the influence of variable X on variable Y is 0.000 < 0.05. Given n = 30, then df = nk = 30-2 = 28. With df = 28, then t_{tabel} with $\alpha = 5\%$is 2.048. Therefore, the value obtained $t_{hitung} > t_{tabel}$ = 9.642 > 2.048. So based on the significance value (sig.) and the value t_{hitung} , the hypothesis H1 is accepted, namely there is an influence of *the think pair share learning model* on students' mathematical critical thinking skills on the material of two-variable linear equation systems. (Harahap et al., 2021) .

Based on the description above, it can be concluded that there is an influence of *the think pair share learning model* on students' mathematical critical thinking skills on the material of two-variable linear equation systems. The hypothesis stating that there is an influence of the *think pair share learning model* on students' mathematical critical thinking skills in class VIII on the material of two-variable linear equation systems is accepted as true or H1 is accepted

4. Conclusion

Based on the results of data analysis and discussion, it can be concluded that there is a positive and significant influence of the use of the think pair share learning model on the mathematical critical thinking skills of class VIII students of UPTD SMP Negeri 7 Pematangsiantar in the 2025/2026 academic year. This influence is shown through the regression equation Y = 29.354 + 0.828X, with a b value = 0.828. By means of the t-test, namely thitung > ttabel (9.642 > 2.048) that is significant and by using the coefficient of determination it can be seen that the influence is 5.5%.

Suggestion

Based on the results of this study, the researcher would like to provide the following suggestions :

For Teachers

By understanding that the think-pair-share learning model influences students' critical mathematical thinking skills, teachers are expected to have learning strategies that best suit the characteristics of the students they teach in order to create a more active, effective, and efficient learning process. Therefore, choosing the think-pair-share learning model can be an alternative in the classroom learning process.

For Students

By understanding how the think-pair-share learning model influences students' critical mathematical thinking skills, it is hoped that students will expand their collection of problems, from the simplest to the most varied. Pay close attention while the teacher is teaching. Determine effective and efficient learning methods, and encourage students to actively participate in teaching and learning activities to ensure a smooth learning process.

For Further Researchers

For future researchers who wish to conduct the same research, it is recommended to develop this research by preparing other material presentations and optimizing time to improve students' critical mathematical thinking skills.

References

Anggraeni, P., Sopandi, W., Septinaningrum, S., Hayati, A., Tursinawati, T., & Gumala, Y. G. Y. (2021). Keterampilan Berpikir Kritis Mahasiswa Pgsd Melalui Pembelajaran Read-Answer-Discuss-Explain-And Create (Radec) Yang Berorientasi Penyelidikan. *Caruban: Jurnal Ilmiah Ilmu Pendidikan Dasar*, *4*(1), 10–19.

Dalimunthe, S. A. S., Mulyono, M., & Syahputra, E. (2022). Pengembangan Model Pembelajaran Interaktif Berbasis Think Pair Share Untuk Meningkatkan Kemampuan Komunikasi Matematis Siswa. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *6*(1), 735–747. Https://Doi.Org/10.31004/Cendekia.V6i1.1229

Destiniar, D., Jumroh, J., & Sari, D. M. (2019). Kemampuan Pemahaman Konsep Matematis Ditinjau Dari Self Efficacy Siswa Dan Model Pembelajaran Think Pair Share (Tps) Di Smp Negeri 20 Palembang. *Jurnal Penelitian Dan Pembelajaran Matematika*, *12*(1), 115–128. Https://Doi.Org/10.30870/Jppm.V12i1.4859

Editia. (2020). *Pengaruh Model Pembelajaran Think Pair Share (Tps) Berbantuan Media Ultrasi Terhadap Hasil Belajar Pkn (Penelitian Pada Siswa ….*

Fardiansyah, M. A., Purwadi, P., & Mudzanatun, M. (2019). Efektivitas Think Pair Share Terhadap Hasil Belajar Peserta Didik Di Sd Pada Materi Analisis Isi Cerita Anak. *Sekolah Dasar: Kajian Teori Dan Praktik Pendidikan*, *28*(2), 66–72. Https://Doi.Org/10.17977/Um009v28i22019p066

Fitri, S. U., & Budiman, T. (2017). *Pengaruh Think Pair Share Terhadap Hasil Belajar Matematika Di Kelas V Sekolah Dasar."*. Tanjungpura University. Https://Doi.Org/Http://Dx.Doi.Org/10.26418/Jppk.V6i5.20051

Ginting, B. (2022). Penerapan Supervisi Klinis Pengawas Untuk Meningkatkan Kemampuan Guru-Guru Pendidikan Agama Kristen Dalam Kbm Melalui Model Pembelajaran Kooperatif Tipe Think Pair Share (Tps) Di Sekolah Wilayah Binaan Kec. Tanjung Morawa. *Cybernetics: Journal Educational Research And Social Studies*, 11–18.

Handayani, R. D., & Yanti, Y. (2017). Pengaruh Model Pembelajaran Kooperatif Tipe Think Pair Share Terhadap Hasil Belajar Pkn Siswa Di Kelas Iv Mi Terpadu Muhammadiyah Sukarame Bandar Lampung. *Terampil: Jurnal Pendidikan Dan Pembelajaran Dasar*, *4*(2), 107–123. Https://Doi.Org/Https://Doi.Org/10.24042/Terampil.V4i2.2220

Harahap, T. D., Husein, R., & Suroyo, S. (2021). Pengaruh Model Pembelajaran Contextual Teaching And Learning Terhadap Hasil Belajar Matematika Ditinjau Dari Berpikir Kritis. *Journal Of Education, Humaniora And Social Sciences (Jehss)*, *3*(3), 972–978. Https://Doi.Org/10.34007/Jehss.V3i3.462

Heliza, S. N. (2023). *Pengaruh Model Pembelajaran Think Pair Share (Tps) Terhadap Hasil Belajar Peserta Didik Pada Mata Pelajaran Ips Kelas Iv Di Mi . Al-Falah Ujung*.

Janah, S. R., Suyitno, H., & Rosyida, I. (2019). Pentingnya Literasi Matematika Dan Berpikir Kritis Matematis Dalam Menghadapi Abad Ke-21. *Prisma, Prosiding Seminar Nasional Matematika*, *2*, 905–910. Https://Doi.Org/Https://Doi.Org/10.51476/Dirasah.V4i2.276

Kamil, V. R., Arief, D., Miaz, Y., & Rifma, R. (2021). Pengaruh Penggunaan Model Pembelajaran Kooperatif Tipe Think Pair Share Terhadap Motivasi Dan Hasil Belajar Belajar Siswa Kelas Vi. *Jurnal Basicedu*, *5*(6), 6025–6033. Https://Doi.Org/10.31004/Basicedu.V5i6.1744

Khaesarani, I. R., & Khairani Hasibuan, E. (2021). Studi Kepustakaan Tentang Model Pembelajaran Think Pair Share (Tps) Dalam Meningkatkan Hasil Belajar Matematika Siswa. *Jurnal Matematika, Sains, Dan Pembelajarannya*, *15*(3), 42.

Kurniawan, H. R., Elmunsyah, H., & Muladi, M. (2018). Perbandingan Penerapan Model Pembelajaran Project Based Learning (Pjbl) Dan Think Pair Share (Tps) Berbantuan Modul Ajar Terhadap Kemandirian Dan Hasil Belajar Rancang Bangun Jaringan. *Jurnal Pendidikan (Teori Dan Praktik)*, *3*(2), 80. Https://Doi.Org/10.26740/Jp.V3n2.P80-85

Lasmanah, A. (2017). Peningkatan Hasil Belajar Matematika Siswa Melalui Model Kooperatif Teknik Think Pair Share (Tps) (Penelitian Tindakan Kelas Terhadap Siswa Kelas Vii-A Smpn Sukasari Sumedang". *Jurnal Analisa*, *2*(3), 18. Https://Doi.Org/10.15575/Ja.V2i3.1221

Leniati, B., & Indarini, E. (2021). Meta Analisis Komparasi Keefektifan Model Pembelajaran Kooperatif Tipe Jigsaw Dan Tsts (Two Stay Two Stray) Terhadap Kemampuan Berpikir Kritis Pada Pembelajaran Matematika Siswa Sekolah Dasar. *Mimbar Ilmu*, *26*(1), 149. Https://Doi.Org/10.23887/Mi.V26i1.33359

Lestari, I., & Luritawaty, I. P. (2021). Peningkatan Kemampuan Pemahaman Konsep Matematis Siswa Dengan Model Think Pair Share Dan Problem Based Learning. *Plusminus: Jurnal Pendidikan Matematika*, *1*(2), 353–362. Https://Doi.Org/10.31980/Plusminus.V1i2.1267

Maharani, N., Hadiyan, A., & Murdiyanto, T. (2021). Pengaruh Model Pembelajaran Creative Problem Solving (Cps) Dalam Pembelajaran Jarak Jauh (Pjj) Terhadap Kemampuan Berpikir Kritis Matematis Siswa. *Jurnal Riset Pendidikan Matematika Jakarta*, *3*(1), 48–57. Https://Doi.Org/10.21009/Jrpmj.V3i1.20110

Maulana, M. (2019). Interaksi Pbl-Murder, Minat Penjurusan, Dan Kemampuan Dasar Matematis Terhadap Pencapaian Kemampuan Berpikir Dan Disposisi Kritis. *Mimbar Sekolah Dasar*, *2*(1), 1–20.

Mayadiana, D. (2019). Pembelajaran Dengan Pendekatan Diskursif Untuk Mengembangkan Kemampuan Berpikir Kritis Mahasiswa Calon Guru Sd. *Upi Bandung: Tidak Diterbitkan*.

Nainggolan, E., Sidabutar, Y. A., & Pasaribu, S. (2022). Pengaruh Metode Think Pair Share (Tps) Terhadap Hasil Belajar Tematik Subtema Hidup Rukun Di Sekolah Pada Siswa Kelas Ii Upt Sd Negeri 13 Pahang. *Jurnal Pendidikan Dan Konseling (Jpdk)*, *4*(5), 7072–7082. Https://Doi.Org/Https://Doi.Org/10.31004/Jpdk.V4i5.7853

Nuryasana, E. (2019). Keefektifan Model Pembelajaran Think Pair Share (Tps) Dan Model Pembelajaran Inkuiri Terhadap Hasil Belajar Ipa Siswa Kelas V Sekolah Dasar. *Trapsila: Jurnal Pendidikan Dasar*, *1*(01), 72–80. Https://Doi.Org/Http://Dx.Doi.Org/10.30742/Tpd.V1i01.725

Pardede, H., Nagur, M. D., Silaban, B., Nababan, T., & Turnip, A. (2022). Pengaruh Model Pembelajaran Kooperatif Tipe Think Pair Share Dengan Pendekatan Saintifik Terhadap Hasil Belajar Peserta Didik. *Jiip - Jurnal Ilmiah Ilmu Pendidikan*, *5*(9), 3387–

3392. Https://Doi.Org/10.54371/Jiip.V5i9.839

Pradana, O. R. Y. (2021). Pengaruh Model Pembelajaran Kooperatif Think Pair Share (Tps) Pada Prestasi Matematika Siswa Sekolah Menengah Pertama. *Jurnal Jendela Pendidikan*, *1*(1), 1–6.

Rachmawati, A., & Erwin, E. (2022). Pengaruh Model Pembelajaran Think Pair Share (Tps) Berbantuan Media Video Animasi Terhadap Hasil Belajar Siswa Sekolah Dasar. *Jurnal Basicedu*, *6*(4), 7637–7643. Https://Doi.Org/10.31004/Basicedu.V6i4.3613

Rahmawati, N. K., & Hanipah, I. R. (2018). Penerapan Model Pembelajaran Kooperatif Tipe Think Pair Share (Tps) Dan Model Pembelajaran Kooperatif Tipe Student Team Achievement Division (Stad) Terhadap Hasil Belajar Matematika Siswa Pada Materi Garis Singgung Lingkaran. *Numerical: Jurnal Matematika Dan Pendidikan Matematika*, 99. Https://Doi.Org/10.25217/Numerical.V2i1.185

Rati, N. W., & Murda, I. N. (2017). Pengaruh Model Pembelajaran Think Pair Share Terhadap Hasil Belajar Ipa Siswa Kelas V Sd Gugus Ii Kecamatan Melaya. *Mimbar Pgsd Undiksha*, *5*(2). Https://Doi.Org/Https://Doi.Org/10.23887/Jjpgsd.V5i2.10906

Sari, D. N., & Mayona Chantika. (2019). Pengaruh Model Pembelajaran Kooperatif Tipe Think Pair Share (Tps) Terhadap Pemahaman Konsep Matematika Kelas Viii Smp Negeri 3 Tebing Tinggi Kabupaten Kepulauan Meranti. *Jurnal Online Mahasiswa Pendidikan Matematika*, *1*(2), 74–82.

Siti Sundari, F., Handayani, R., & Mulyawati, Y. (2019). Implementasi Pendekatan Saintifik Berbasis Lesson Study Terhadap Pengembangan Berpikir Kritis Mahasiswa Calon Guru Sekolah Dasar. *Journal Of Science Education And Practice*, *1*(1), 32–40.

Sulianto, J., Purnamasari, V., & Febriarianto, B. (2019). Pengaruh Model Pembelajaran Think-Pair-Share Terhadap Hasil Belajar Siswa Kelas V (Lima) Materi Organ Tubuh Manusia Dan Hewan. *International Journal Of Elementary Education*, *3*(2), 124. Https://Doi.Org/10.23887/Ijee.V3i2.18515

Tillawari, T. (2020). Penerapan Model Pembelajaran Team Quiz Untuk Meningkatkan Berpikir Kritis Dan Prestasi Belajar Siswa (Studi Mata Pelajaran Mata Pelajaran Pai Dan Budi Pekerti Siawa Kelas X Smk Negeri 2 Lahat). *Diadik: Jurnal Ilmiah Teknologi Pendidikan*, *10*(1), 148–158.

Wicaksono, R. S., Susilo, H., & Sueb. (2019). Implementation Of Problem Based Learning Combined With Think Pair Share In Enhancing Students' Scientific Literacy And Communication Skill Through Teaching Biology In English Course Peerteaching. *Journal Of Physics: Conference Series*, *1227*(1), 012005. Https://Doi.Org/10.1088/1742-6596/1227/1/012005

Yudha, C. B. (2019). Pengaruh Pendekatan Saintifik Terhadap Kemampuan Berpikir Kritis Mahasiswa. *Buana Matematika: Jurnal Ilmiah Matematika Dan Pendidikan Matematika*, *9*(1), 31–36.

Zulfah, Z. (2017). Pengaruh Penerapan Model Pembelajaran Kooperatif Tipe Think Pair Share Dengan Pendekatan Heuristik Terhadap Kemampuan Pemecahan Masalah Matematis Siswa Mts Negeri Naumbai Kecamatan Kampar. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *1*(2), 1–12. Https://Doi.Org/10.31004/Cendekia.V1i2.23