

## SISTEMATYC LITERATURE REVIEW: THE INFLUENCE OF PEER TEACHING LEARNING METHODS IN IMPROVING STUDENT MATHEMATICS LEARNING OUTCOMES

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### ABSTRAK

Pemilihan metode pembelajaran dalam pengajaran matematika sangatlah penting. Untuk menghindari terjadinya ketidakefektifan penerapan suatu metode pembelajaran, guru harus bijak dalam memilih metode pembelajaran yang akan digunakan. Alih-alih ingin mencapai tujuan pembelajaran, pemilihan metode yang salah dalam pembelajaran matematika dapat mengakibatkan siswa menjadi bosan dan kurang memahami dengan baik materi yang didapatkan. Oleh karena itu berdasarkan latar belakang masalah ini, salah satu metode pembelajaran yang dapat menjadi alternatif yang baik untuk diterapkan dalam pembelajaran matematika adalah metode pembelajaran *Peer Teaching*. Metode pembelajaran *Peer Teaching* adalah metode pembelajaran tutor sebaya dimana pembelajaran ini dilakukan dengan cara siswa yang memiliki kemampuan pemahaman yang lebih tinggi membantu teman lainnya dalam penguasaan materi. Tujuan dari penelitian ini yaitu untuk mengetahui pengaruh metode pembelajaran *Peer Teaching* dalam meningkatkan hasil belajar matematika siswa. Jenis penelitian yang digunakan peneliti adalah *sistematyc literature review* (SLR) atau studi pustaka dimana peneliti ingin membahas mengenai pengaruh metode pembelajaran *Peer Teaching*. Berdasarkan hasil penelitian yang sudah dikaji pada beberapa penelitian terdahulu (sebelumnya), peneliti dapat mengambil kesimpulan bahwa hasil belajar matematika siswa dengan menggunakan metode pembelajaran *Peer Teaching* lebih memuaskan dibandingkan dengan menggunakan metode pembelajaran ceramah yang berpusat pada guru (*teacher centered*).

**Kata kunci** : *peer teaching, hasil belajar matematika*

### ABSTRACT

*The choice of learning methods in teaching mathematics is very important. To avoid ineffective implementation of a learning method, teachers must be wise in choosing the learning method to be used. Instead of achieving learning goals, choosing the wrong method in learning mathematics can result in students becoming bored and not*

*understanding the material well. Therefore, based on the background of this problem, one learning method that can be a good alternative to apply in mathematics learning is the Peer Teaching learning method. The Peer Teaching learning method is a peer tutoring learning method where this learning is carried out by students who have higher understanding abilities helping other friends in mastering the material. The aim of this research is to determine the effect of the Peer Teaching learning method in improving student mathematics learning outcomes. The type of research used by the researcher is a sistematyc literature review where the researcher wants to discuss the influence of the Peer Teaching learning method. Based on the results of research that has been studied in several previous studies, researchers can conclude that students' mathematics learning outcomes using the Peer Teaching learning method are more satisfying compared to using the teacher-centered lecture learning method.*

## INTRODUCTION

Education is very important in human life. A nation is said to be advanced if its education is of good quality and implemented well. As time goes by, education will continue to develop and become more quality. Children today should be given quality education from an early age so that they can keep up with increasingly rapid and sophisticated developments. It is hoped that quality education will produce children who are intelligent and responsive in all aspects. Quality education certainly comes from learning in schools that is conducive and effective. Learning methods are certainly needed to achieve learning goals and make classroom conditions conducive to the learning process. Therefore, teachers are expected to be able to choose the right method to use during classroom learning.

Learning Methods are ways of presenting lesson materials that will be used by teachers when presenting lesson materials that teachers will use when presenting lesson materials, both individually and in groups (Basri and Lestari, 2019:54). In the current era, learning methods in the classroom are no longer centered on the teacher alone but are more focused on learning methods that require students to be more active and independent during the learning process in the classroom. One method that is currently efficiently used is the peer tutoring *method*. The *peer teaching* learning method is a learning method that involves students who are smart, intelligent, have good skills, and can help other friends who have not mastered the material with the aim that these friends can master the material (Suherman, 2021:233).

It is hoped that appropriate learning methods will influence student learning outcomes, especially in mathematics lessons which students consider difficult. Mathematics is one of the subjects that is considered to have quite an important role in schools in shaping the quality of students, because mathematics is a means of thinking to study something logically and systematically. Therefore, it is necessary to improve the quality of mathematics education. One thing that needs to be considered is increasing students' understanding of mathematical concepts by using appropriate learning methods. The difficulties and failures experienced by students are not only caused by their lack of ability or their feeling of laziness, but there are other factors that also influence students' success in learning mathematics. These

factors can come from outside, such as the family environment, relationships, learning techniques and learning methods used by teachers in the classroom learning process. Therefore, this research is aimed at finding out the influence of using *peer teaching learning methods* in improving students' mathematics learning outcomes.

This research is research that uses the Systematic Literature Review (SLR) method. SLR is a technique used to collect data, examine it critically, and collect results from various research studies that are appropriate to the topic you want to raise. This research began by looking for various kinds of reading material, both from journals and theses, related to the title to be researched. The stages in conducting this research are that the researcher formulates the questions being researched, looks for reading sources, determines the criteria for sources that must be sought, collects data, processes the data and draws conclusions.

The data sources in this research were taken from several references, namely journals and theses published in the last five years 2018-2022. From the various journals and theses found, the researcher chose 7 journals and 1 thesis that were related to the title taken. This research aims to examine literature studies regarding the influence of peer teaching learning methods in improving student learning outcomes.

## DISCUSSION

Review Literatur I
Researcher and Year
Rizki Kurniawan, Nana Hendrapipta, Reksa Adya Pribadi. (2023)
Journal
Penerapan Metode Tutor Sebaya Dalam Pembelajaran Matematika
Results
The application of the peer tutoring method in learning Mathematics is able to help students to understand Mathematics learning more pleasantly, Mathematics learning that is considered difficult will be done with the help of peer tutors as guides, students also do not need to feel embarrassed to be able to ask questions

directly to peer tutors and can ask questions using their own language because the peer tutors who help are their peers, students also don't need to feel reluctant and embarrassed like when they want to ask their teacher because there are age and etiquette limits.

**Review Literatur II**

Researcher and Year
Wahyu Riyadiyanti (2021)
Thesis
Pengaruh Metode Pembelajaran Tutor Sebaya Terhadap Prestasi Belajar Matematika Siswa Kelas Iv Sd Negeri 01 Gebang Sari Pada Materi Operasi Hitung Campuran
Results
Based on the results of research and discussions carried out by the author on class IV students at SD Negeri Gebangsari 01 using the Peer Tutor learning model on mixed arithmetic operations material, it is as follows: Student scores have increased significantly. Students understand more about the material being taught. Students easily understand the explanations given by their friends because their friends use easier language or their own language. Students don't experience tension when learning begins. Learning feels more enjoyable.

**Review Literatur III**

Researcher and Year
Nadya Astuti (2022)
Journal
Model Pembelajaran Peer Teaching Untuk Meningkatkan Pemahaman Dan Komunikasi Matematika, Serta Motivasi Belajar Siswa
Results
The results of research that has been carried out and through several analyses,

1. Based on the analysis of the use of the peer tutoring method, it is considered good based on the overall average score (posttest) obtained by students after implementing the peer tutoring method, which is 76.4 which is included in the good category.
2. Based on student learning outcomes which can be seen from the following data, quite large (52%) student learning outcomes are very good, quite large (28%) student learning outcomes are good, a small portion (8%) student learning outcomes are fair and a small portion (12%) student learning outcomes are poor. After getting the results of such an analysis, it can be concluded that the student learning outcomes at SDN Simpang Warga 1, Aluh-Aluh sub-district are fairly good.
3. Based on the results of data analysis which shows that the value of  $t_{count} > t_{table}$  ( $2.091 > 2.069$ ) and significance is  $0.048 < 0.05$ . then the value of the hypothesis testing results shows the value  $t_{count} > t_{table}$  so that it can be proven  $H_a$  which sounds means that there is a significant influence on learning outcomes before treatment (pretest) on learning outcomes after treatment (posttest) using the peer tutoring learning method on students' Mathematics learning outcomes Class III at SDN Simpang Warga 1 Aluh-aluh District was accepted and  $H_o$  was rejected.

Review Literatur IV
Researcher and Year
Rismawati, Murhami. (2019)
Journal
Penerapan Model Pembelajaran Tutor Sebaya Untuk Meningkatkan Hasil Belajar Siswa Smp Pada Materi Statistika
Results
Based on the results of data processing that has been carried out, it is found that the two classes have homogeneous data, while normality testing shows that the data is not normally distributed, so hypothesis testing is continued with the non-parametric Mann Whitney test based on calculations obtained at -4.88, thus

obtaining a value of  $t < t_{table}$  ( $-4.88 < 1.645$ ), then rejected and accepted. This means that the increase in student learning outcomes by implementing the peer tutoring learning model is higher than conventional learning in statistics material for class VIII students at one of Susoh Aceh Barat Daya State Middle Schools. From the results of this research it was found that the peer tutoring model is very suitable to be applied to mathematics subjects in particular in statistics material because by applying this model learning will not be boring, and students will have an active role in determining the learning activities to be carried out, so that learning will be more meaningful. This happens because of the peer tutoring model, students are required to be more active in understanding the material by searching for the information they need themselves. Students are also required to be able to collaborate and work together in a group.

Review Literatur V
Researcher and Year
Merita Wahyuningtyas_2019
Thesis
Pengaruh Penggunaan Metode Peer Teaching Terhadap Hasil Belajar Matematika Siswa Kelas Viii Pada Materi Teorema Phytagoras Di Smp Negeri 1 Sumbergempol Tahun Ajaran 2018/2019
Results
There is a significant difference between learning outcomes in the control class which is taught using conventional learning methods and the experimental class which uses peer teaching learning methods. By using the peer teaching learning method on the Pythagorean theorem material at SMP Negeri 1 Sumbergempol, their learning outcomes can increase compared to using conventional learning

methods. Students feel that learning mathematics becomes easier and more enjoyable.

Review Literatur VI
Researcher and Year
Yuni Mahmudah, Lia Saniah. (2021)
Journal
The Effect Of Application Of Peer Teaching Method On Mts Students' Mathematical Understanding
Results
The results of research through data analysis of testing hypotheses for mathematics learning using the peer tutoring method were able to improve MTs students' mathematical understanding abilities. This can be seen from the students' test results after being given treatment. From the data on test results after being given different treatment to the experimental group and the control group, it is clear that the two groups have quite significant average scores. The experimental group that was given treatment using the peer tutoring method turned out to have a higher average score compared to the control group whose learning used conventional methods.

Review Literatur VII
Researcher and Year
Mut'mainnah (2021)
Journal
Pengaruh Penerapan Metode Peer Teaching Terhadap Pemahaman Matematis Siswa Mts
Results
The results obtained show that in peer tutoring, apart from increasing students' understanding, it can also train students in communicating. So that student achievement or learning outcomes also increase. When solving mathematics



problems, peer tutoring is often used to help students who are slow in solving the problems given. This is where the role of students who are appointed as tutors is to help their friends in solving math problems. So, in learning mathematics, implementing this peer tutoring learning model can make students understand each other's mathematical concepts and help students solve mathematical problems that they don't understand, because there is interaction between students in learning.

As for the research results that have been reviewed from the 5 articles and 2 theses above, it can be said that there is an increase in student mathematics learning outcomes when the peer teaching learning method is implemented. Researchers prove the research results by reviewing each research result. From the results of the first research by (Rizky Kurniawan, Nana Hendrabuat, Reksa Adya Pribadi (2023)), the application of the peer tutoring method in Mathematics learning in class V at SDN Kalideres 07 can increase interaction between students during the activity. The second research by (Wahyu Riyadiyanti (2021)) the results show that the peer teaching learning method on Pythagorean theorem material at SMP Negeri 1 Sumbergempol can have an impact on increasing student learning outcomes. The results of the third research by (Nadya Astuti (2022)) show that there is a significant influence of the peer tutoring method on student learning outcomes at SDN Simpang Warga Aluh-Aluh District. The results of the fourth research by (Rismawati, Murhami. (2019)) showed that the increase in student learning outcomes by implementing the peer tutor learning model was higher than conventional learning in statistics material for class VIII students at SMP Negeri Susoh Aceh Barat Daya. The fifth result by (Merita Wahyuningtyas (2019)) using the peer teaching learning method on the Pythagorean theorem material at SMP Negeri 1 Sumbergempol can have an impact on their learning outcomes which are increasing compared to using conventional learning methods. The results of the sixth research by (Yuni Mahmudah, Lia Saniah. (2021)) show that learning using the peer tutoring method has a higher average score compared to using conventional learning. The seventh result by (Mut'mainnah. (2021)) is that in peer tutoring, apart from increasing students' understanding, it can also train students in

communicating. So that student achievement or learning outcomes also become more improved.

## CONCLUSION

Based on research analysis using literature studies that have been carried out by researchers, it shows that the application of the peer teaching learning model has an effect on improving the quality of students' mathematics learning outcomes. This increase is proven by students' mathematics learning outcomes increasing after teachers use peer teaching learning methods.

With the peer teaching method, it is easier for students to ask questions in their own language because the tutors are their peers, so students understand the material more easily and learning feels more enjoyable. The peer teaching learning method is more recommended for mathematics learning, because students are required to be more active in understanding the material and can collaborate and work together in groups.

## REFERENCES

- Abidin, Z. (2021). Pengaruh Model Pembelajaran Tutor Sebaya terhadap Hasil Belajar Matematika. *Panthera: Jurnal Ilmiah Pendidikan Sains dan Terapan*, 1(1), 19-24.
- Abineno, P., Rowa, Y. R., & Jagom, Y. O. (2019). *Pengaruh Model Pembelajaran Tutor Sebaya terhadap prestasi belajar matematika siswa*. Asimtot: Jurnal Kependidikan Matematika, 1(1), 61-67.
- Adi Nugroho, D. (2017). *Peningkatan Hasil Belajar Matematika melalui Metode Kelompok Tutor Sebaya* (Doctoral dissertation, Skripsi, Universitas Muhammadiyah Magelang).
- Akmal, N. (2019). *Pengaruh Metode Peer Teaching Terhadap Hasil Belajar Mahasiswa Pada Materi Operasi Aljabar*. ITQAN: Jurnal Ilmu-Ilmu Kependidikan, 10(2), 69-77.
- Astuti, N. (2022). *Pengaruh Metode Pembelajaran Tutor Sebaya Terhadap Hasil Belajar Matematika Siswa Kelas III Sdn Simpang Warga 1 Kecamatan Aluh-Aluh*. *Jurnal Terapung: Ilmu-Ilmu Sosial*, 4(1), 33-46.
- Dianawati, H. (2015). *Pengaruh Penerapan Metode Peer Teaching dalam Pembelajaran Matematika Terhadap Peningkatan Prestasi Belajar Siswa*

- Kelas VI Sekolah Dasar Negeri Giring I kecamatan Manding Kabupaten Sumenep. Jurnal Ilmiah MITSU*, 3(1).
- Khotimah, K., & Yuliastuti, R. (2019). *Penerapan Model Pembelajaran Tuntas dengan Metode Tutor Sebaya untuk Meningkatkan Hasil Belajar Matematika Siswa SMP*. *Edumatika: Jurnal Riset Pendidikan Matematika*, 2(2), 77-82.
- Kurniawan, R., Hendrapipta, N., & Pribadi, R. A. (2023). *Penerapan metode tutor sebaya dalam pembelajaran matematika. Coopetition: Jurnal Ilmiah Manajemen*, 14(1), 169-178.
- Mahmudah, Y., & Saniah L. (2021). *Pengaruh penerapan metode peer teaching terhadap pemahaman matematis siswa MTs*. *Jurnal Pasundan Journal of Research in Mathematics Learning and Education*, 6(1), 10-18.
- Masruroh, M. (2018). *Penerapan metode peer teaching untuk meningkatkan hasil belajar mahasiswa pada materi program linear*. *Reforma: Jurnal Pendidikan dan Pembelajaran*, 7(1), 37-40.
- Mulyoto, D. J. (2017). *Peningkatan partisipasi dan hasil belajar matematika melalui strategi pembelajaran tutor sebaya*.
- Muthma'innah. (2021). *Hasil belajar matematika siswa melalui model pembelajaran tutor sebaya*. *Tadiban: Jurnal of islamic education*, 1(2), 1-7.
- Purwantati, Y. R. (2018). *Penerapan Metode Tutor Sebaya untuk Meningkatkan Hasil Belajar Peserta Didik pada Pembelajaran Matematika Konsep Perkalian Skalar Dua Vektor*. *Jurnal Ilmiah Pendidikan dan Pembelajaran*, 2(3), 385-394.
- Rezeki, P. S. (2017). *Peningkatan Hasil Belajar Matematika Melalui Modeltutor Sebaya (Peer Tutor) Kelas III*. *BASIC EDUCATION*, 6(9).
- Rismawati, R., & Murhami, M. (2019). *Penerapan Model Pembelajaran Tutor Sebaya Untuk Meningkatkan Hasil Belajar Matematika Siswa Smp Pada Materi Statistika*. *Jurnal Ilmiah Pendidikan Matematika Al Qalasadi*, 3(2), 48-53.
- Riyadiyanti, W. (2021). *Pengaruh Metode Pembelajaran Tutor Sebaya Terhadap Prestasi Belajar Matematika Siswa Kelas Iv Sd Negeri 01 Gebang Sari Pada Materi Operasi Hitung Campuran* (Doctoral dissertation, Universitas Islam Sultan Agung Semarang).
- Wahyuningtyas, M. (2019). *Pengaruh Penggunaan Metode Peer Teaching Terhadap Hasil Belajar Matematika Siswa Kelas Viii Pada Materi Teorema Phytagoras Di Smp Negeri 1 Sumbergempol Tahun Ajaran 2018/2019*.
- Wali, G. N. K., Winarko, W., & Murniasih, T. R. (2020). *Peningkatan keaktifan dan hasil belajar siswa dengan penerapan metode tutor sebaya*. *RAINSTEK: Jurnal Terapan Sains & Teknologi*, 2(2), 164-173.
- Yanti, C. A. M., Maharani, S. D., & Susanto, R. (2021). *Hasil Belajar Matematika Materi Jaring-Jaring Kubus Dan Balok Melalui Metode Tutor Sebaya Pada Peserta Didik Kelas Va Sd Negeri 231 Palembang*. *Inovasi Sekolah Dasar: Jurnal Kajian Pengembangan Pendidikan*, 8(2).