

EXPLORING STUDENTS' MATHEMATICAL PROBLEM-SOLVING ABILITY ON SET TOPICS BASED ON SELF CONFIDENCE

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Abstract

Students' problem-solving abilities are influenced by their self-confidence in learning mathematics. This study intends to investigate junior high school students' mathematics problem-solving abilities in terms of their self-confidence in the set content. Descriptive qualitative research methodology is employed. This research involved 32 students in 7th grade at SMP Negeri 2 Sukodadi, Lamongan. To focus on data analysis, 3 students were selected representing different levels of self-confidence, namely high, medium and low. Subject taking is based on the results of the scores on the self-confidence questionnaire that has been given. Questionnaires on self-confidence, tests of mathematical problem-solving abilities, and interview guidelines were the instruments employed. Based on the data analysis, it was found that there is a close relationship between self-confidence and mathematical problem-solving ability, that is, the higher the level of student self-confidence, the better the ability to solve mathematical problems. Conversely, if students' self-confidence is lower, their mathematical problem-solving abilities will also be lower. This study emphasizes the importance of students' self-confidence to be grown in learning to support their mathematical problem-solving abilities.

Keywords: Set; self confidence; mathematical problem-solving

Abstrak

Rasa percaya diri siswa dalam belajar matematika memengaruhi kemampuan pemecahan masalah mereka. Penelitian ini bertujuan mengeksplorasi kemampuan pemecahan masalah matematis siswa SMP ditinjau dari rasa percaya dirinya pada materi himpunan. Metode penelitian yang digunakan adalah deskriptif kualitatif. Penelitian ini melibatkan 32 siswa kelas VII di SMP Negeri 2 Sukodadi, Lamongan. Untuk memfokuskan analisis data, dipilih 3 siswa yang mewakili tingkat kepercayaan diri yang berbeda, yakni tinggi, sedang, dan rendah. Pengambilan subjek didasarkan pada hasil skor pada angket kepercayaan diri yang telah diberikan. Instrumen yang digunakan berupa angket kepercayaan diri, tes kemampuan pemecahan masalah matematis, dan pedoman wawancara. Hasil penelitian menunjukkan bahwa ada korelasi antara kepercayaan diri dan kemampuan pemecahan masalah matematis; semakin tinggi kepercayaan diri siswa, semakin baik kemampuan mereka memecahkan masalah matematis; sebaliknya, semakin rendah kepercayaan diri siswa, semakin buruk kemampuan mereka memecahkan masalah matematis. Penelitian ini menegaskan pentingnya rasa percaya diri siswa ditumbuhkan dalam pembelajaran untuk menunjang kemampuan pemecahan masalah matematisnya.

Kata kunci: Himpunan; kepercayaan diri, pemecahan masalah matematis



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INTRODUCTION

Mathematics education is critical for everyone. Because mathematics education helps everyone to improve problem-solving skills and think logically, critically, and systematically (Ramdan et al., 2018; Shodikin, 2016). Mathematics has tremendous potential to play a strategic role in nurturing talent in this challenging era of globalization. Therefore, considering the ability or potential of mathematics education, students who are proficient in mathematics and have succeeded in developing skills will be able to think critically, logically, actively, and creatively about the changes and developments of the times (Mutmainnah et al., 2021; Nahdi et al., 2021). According to Sariningsih & Purwasih (2017), mathematics education can motivate people always to progress, as evidenced by the advancement of modern technology. Therefore, being a proficient person in mathematics is very important for everyone.

Mathematical problem solving ability is crucial for both learning and teaching mathematics (Al Ayyubi et al., 2018; Juanda et al., 2014; Millah & Shodikin, 2021; Purnama & Mertika, 2018; Shodikin et al., 2021; Wulandari et al., 2021). Some experts define problem-solving aptitude as the capacity to anticipate the procedures necessary to resolve an issue using knowledge already understood (Annisa et al., 2021; Azizah et al., 2020; Bernard et al., 2018). The ability to solve mathematical issues, on the other hand, is defined as mathematical problem-solving skill by identifying known factors and using them to determine formulas or strategies to reach solutions (Novitasari & Shodikin, 2020; Nurwahid & Shodikin, 2021; Sari et al., 2019).

The set topic is one of the branches of mathematics that must be studied at the SMP/MTS level. A set is a collection of objects or objects whose members can be clearly defined and determined (Lusiana, 2017; Purwanto & Rizki, 2015). The set is also defined as a collection of measurable objects that members can identify in the set (Aminah et al., 2018; Dwidarti et al., 2019). This set of materials can demand students in mathematical problem-solving skills because the completion process requires identification, settlement strategies, and completion results (Hidayat & Pujiastuti, 2019; Rahayu & Pujiastuti, 2018).

Students need self-confidence when solving problems. Self-confidence is an attribute of human nature that plays an important role in achieving a person's potential or skill (Diniyah et al., 2018; Dewi & Minarti, 2018; Maulidya et al., 2021; Nurfitriya & Nindiasari, 2018; Rini et al., 2020; Sipayung et al., 2021; Ulfa et al., 2019). According to some experts, self-confidence is an individual's belief in his ability to solve problems according to the best strategy and plan (Khoirunnisa & Malasari, 2021; Nur et al., 2021; Purnama & Mertika, 2018). Confident people can solve problems using the best strategies, and confident people can achieve certain goals according to plan (Hendriana et al., 2018; Haeruman et al., 2017; Rustan & Bahru, 2018). It shows that self-confidence can help students solve problems and support their motivation and success in mathematics.

As explained above, mathematical problem-solving skills are critical and must be held by pupils (Mawaddah & Maryanti, 2016; Novitasari & Shodikin, 2020; Sumartini, 2016). Additionally, having confidence in oneself is another

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element that aids students in solving mathematical issues. Therefore, teachers need to know how well and confident their students are in solving mathematical problems so that teachers can apply more interesting and relevant learning models and strategies. As a result, students will be very confident in solving math problems and easily understand what has been learned.

METHOD

This study employed a descriptive technique to investigate an overview of students' mathematical problem-solving ability. Descriptive qualitative research methodology has been used. The researcher chose this method because it aims to explore solving students' mathematical problems in terms of their self-confidence.

This research was conducted at SMP Negeri 2 Sukodadi, East Java. The subject of this study involved 32 students from 7th grades, and 3 students were selected for presentation who represented the subject based on differences in their level of confidence.

This research phase is divided into three parts: planning, implementation, and reporting (Pitriyani et al., 2018). The initial phase of research is planning, and the researcher prepares all research tools, including confidence questionnaires, questions to test math problem-solving skills, and interview tools. Then the second stage, namely implementation, students were given a self-confidence questionnaire to fill out before being given a mathematics problem-solving ability test. The third stage is reporting; the researcher analyzes the data based on the guidelines that have been compiled, discusses and compares it based on

supporting theories and research, and compiles it in the form of articles.

The instrument employed in this study was a self-confidence questionnaire with 26 items organized according to variable indicators. At the same time, the mathematical problem-fixing cap potential check is organized withinside the shape of an outline with two questions. Such tests are used to assess pupils' capacity for handling mathematical issues. Before the questionnaires and test questions were distributed to students, the two instruments were consulted with the supervisor first so that the instruments had content validity.

Collecting data is to determine the level of self-confidence by distributing questionnaires (Nurafni et al., 2019). The form of the scale used is a Likert scale, with four alternative answers consisting of positive questions and negative questions. Positive questions support the object, while negative ones do not. The scoring criteria for the questionnaires are self-confidence based on a Likert scale, as shown in Table 1.

Table 1. Likert Scale Self Confidence

Answer Options	Positive Questions	Negative Questions
SL (Always)	4	1
SR (Often)	3	2
Ever (P)	2	3
Never (TP)	1	4

Test results were used to obtain information about students aptitude for math issues (Islamiah et al., 2018). The evaluation criteria for each measure of a student's math problem-solving are given in Table 2 below (Mawaddah & Anisah, 2015).

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Table 2. Scoring guidelines for student mathematical problem solving

Aspects assessed	Score	Description
Understanding the problem	0	Doesn't state the questions or what is known.
	1	Indicate what is understood without specifying the request, or the opposite.
	2	State what is understood and what's requested; however, it isn't always precise
	3	Correctly describe what is known and what is asked.
Planning solutions	0	No plans at all for solving the problem.
	1	It plans a solution based on the problem, but it's not entirely correct.
	2	Plan your decisions well.
Implement the plan	0	No answer at all.
	1	Write down the answers and execute the plan, but the answers are incorrect or only part of the answers are correct.
	2	Write down half or most of the correct answers to implement the plan.
	3	Execute the plan by writing down your answers completely and accurately.
Interpreting the results obtained	0	There are no comments written.
	1	Interpretation of the results obtained leads to conclusions but is not entirely accurate.
	2	Interpret the results obtained by drawing appropriate conclusions.

RESULTS AND DISCUSSIONS

This is a descriptive and qualitative research approach. Students from SMP Negeri 2 Sukodadi in grades VII participated in this study. The total number of pupils in the class is 32. First, the researcher provided the students a questionnaire on their self-confidence before asking them two questions regarding their ability to solve

mathematical problems. It took 120 minutes to complete the test.

The data that have been obtained is processed and analyzed by researchers. Furthermore, the researchers took as many as three subjects. The subject was chosen based on data analysis performed by the researcher; results on self-confidence and mathematical problem-solving skill tests are shown in Table 3.

Table 3. Score self confidence and student mathematical problem solving

No	Subject	<i>Self Confidence</i>		Mathematical Problem Solving	
		Ideal Score	Total Score	Ideal Score	Total Score
1	S-1	104	82	20	14
2	S-2	104	69	20	10
3	S-3	104	56	20	8

Note: S-1: subject 1, S-2: subject 2, S-3: subject 3

According to Table 3, the analysis of the score illustrates that students with high levels of self-confidence are better

at solving mathematical problems, but students with low levels of self-confidence are not. Furthermore, the

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analytical results reveal that self-confidence influences mathematical problem-solving ability.

The higher a student's self-confidence, the better he or she solves math problems and vice versa. The confidence variable includes aspects that can be used to measure students' ability to solve mathematical problems (Noviyana et al., 2019). Self-confidence and the capacity to answer problems in mathematics offer pupils a good perspective toward other talents, according to Hendriana et al., (2014), who conducted a study that found a positive association between self-confidence and mathematical comprehension.

The following are some of the findings of a mathematical problem-solving ability test of pupils with varying levels of self-confidence. Figures 1, 2, and 3 show high, medium, and low values for the set material.

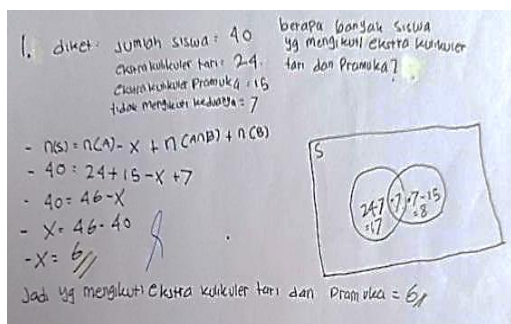


Figure 1. The student answer S-1

Figure 1 shows the response of students who have high level of self- in the assigned content. As seen in the image, the student can effectively answer the problem of mathematical problem-solving skills. Furthermore, students can comprehend the challenges provided in the problem by writing down what is known and what is being requested, and students can successfully complete the completion procedures. It is because 1) students are secure in their

skills to learn the content, 2) students can make decisions on their own, and 3) students are willing to confront obstacles in problem solving.

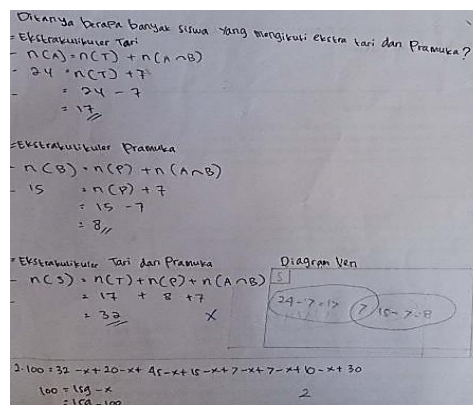


Figure 2. The student answer S-2

Figure 2 depicts how students responded in the set material with moderate self-confidence. The image shows that the student must be able to tackle the problem of mathematical problem-solving abilities well. The student's answer is not quite correct; while pupils can write down what they know and what is requested, they are less accurate in completing the completion stages. It is because 1) students are doubtful of their abilities in the assigned content, 2) students are still unsure of the formula to utilize, and 3) students are still confused between the intersection symbol and the combination, causing them to input incorrect numbers.

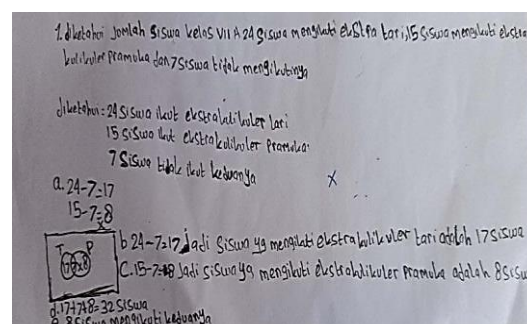


Figure 3. The student answer S-3

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Figure 3 depicts the answers of students who were unsure about the assigned content. The image shows that the student did not answer the challenge of mathematical problem-solving abilities well. Furthermore, it can be observed that the student's answer is not exactly correct; while children can write down what they know and what is requested, they are less accurate in completing the finishing stages. It is because 1) students are unsure of their skills in the assigned content, 2) students are unable to act independently to answer issues, 3) students do not know what formula to use, and 4) students find it difficult to work on the questions.

According to the the preceding summary of the examined data, self-confidence and mathematical problem solving skills are tightly associated. This is consistent with the findings of Hendriana's study, which revealed a strong relationship between self-confidence and pupils' mathematical problem-solving ability (Hendriana et al., 2018). Moreover, these relationships are mutually supportive and mutually beneficial. Irhamna et al., (2020) shown that self-confidence contributes to mathematical problem solving abilities concurrently and partially. According to Ramdan et al., (2018), there is a substantial positive association between self-confidence and mathematical problem-solving ability.

Another correlation is that the stronger a student's degree of self-confidence, the better his or her ability to answer arithmetic problems. Fadillah & Ardiawan (2021) also demonstrate that pupils with high levels of self-confidence outperform those with moderate and low levels of self-confidence in mathematical problem solving.

CONCLUSION AND SUGGESTION

Based on the data analysis and discussion, there is a very close positive association between self-confidence and the capacity to solve mathematical problems. In other words, confidence is a factor that may be used to assess mathematical problem-solving skill. The more self-assured a pupil is, the greater his or her ability to answer arithmetic problems. In contrast, the lower a student's degree of confidence, the poorer his or her ability to answer arithmetic problems.

This study has implications in that it is vital to enhance students' confidence in solving mathematical issues in order to improve their problem-solving skills. Based on the findings of this study, educators should work to boost students' self-confidence in order to help their mathematical problem-solving abilities improve. The instructor must foster closeness and confidence in kids who have poor self-esteem. This proximity may be achieved by motivated activities, scaffolding, and supplementary tasks that foster mathematical confidence.

According to Piaget's stages of cognitive development, this research is still restricted to junior high school students who have reached the formal operational stage. As a result, additional research involving subjects at various cognitive stages is needed to ensure that the findings hold true for other stages of cognitive development.

REFERENCES

- Al Ayyubi, I. I., Nudin, E., & Bernard, M. (2018). Pengaruh Pembelajaran Berbasis Masalah Terhadap Kemampuan Pemecahan Masalah Matematis Siswa SMA. *JPMI (Jurnal Pembelajaran Matematika*

DOI: <https://doi.org/10.24127/ajpm.v12i2.6338>

- Inovatif*, 1(3), 355-360.
<https://doi.org/10.22460/JPMI.V1I3.P355-360>
- Aminah, S., Wijaya, T. T., & Yuspriyati, D. (2018). Analisis Kemampuan Komunikasi Matematis Siswa Kelas VIII Pada Materi Himpunan. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 2(1), 15–22.
<https://doi.org/10.31004/CENDEKIA.V2I1.29>
- Annisa, R., Roza, Y., & Maimunah. (2021). Analisis Kemampuan Pemecahan Masalah Matematis Siswa SMP Berdasarkan Gender. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, 7(2), 481–490.
<https://doi.org/10.33394/JK.V7I2.3688>
- Azizah, N. I., & Granita, G. (2020). Pengaruh Penerapan Model Pembelajaran Problem Based Learning terhadap Kemampuan Pemecahan Masalah Matematis ditinjau dari Self-Confidence Siswa SMP/MTs. *JURING (Journal for Research in Mathematics Learning)*, 3(4), 311-322.
<http://dx.doi.org/10.24014/juring.v3i4.10681>
- Bernard, M., Nurmala, N., Mariam, S., & Rustyani, N. (2018). Analisis kemampuan pemecahan masalah matematis siswa SMP kelas IX pada materi bangun datar. *SJME (Supremum Journal of Mathematics Education)*, 2(2), 77-83.
<https://doi.org/10.5281/zenodo.1405906>
- Dewi, S. N., & Minarti, E. D. (2018). Hubungan antara Self-Confidence terhadap Matematika dengan Kemampuan Pemecahan Masalah Matematik Siswa pada Materi Lingkaran. *Mosharafa: Jurnal Pendidikan Matematika*, 7(2), 189–198.
<https://doi.org/10.31980/MOSHA RAFA.V7I2.37>
- Diniyah, A. N., Akbar, G. A. M., Akbar, P., Nurjaman, A., & Bernard, M. (2018). Analisis kemampuan kemampuan penalaran dan self confidence siswa SMA dalam materi peluang. *Journal on Education*, 1(1), 14-21.
- Dwidarti, U., Mampouw, H. L., & Setyadi, D. (2019). Analisis Kesulitan Siswa dalam Menyelesaikan Soal Cerita pada Materi Himpunan. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 3(2), 315–322.
<https://doi.org/10.31004/CENDEKIA.V3I2.110>
- Fadillah, S., & Ardiawan, Y. (2021). Pengaruh Model Problem Solving Dan Problem Posing Terhadap Kemampuan Pemecahan Masalah Ditinjau Dari Self Confidence. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 10(3), 1373-1381.
<https://doi.org/10.24127/ajpm.v10i3.3664>
- Haeruman, L. D., Rahayu, W., & Ambarwati, L. (2017). Pengaruh model discovery learning terhadap peningkatan kemampuan berpikir kritis matematis dan self-confidence ditinjau dari kemampuan awal matematis siswa SMA di Bogor Timur. *JPPM (Jurnal Penelitian dan Pembelajaran Matematika)*, 10(2), 157-168.

DOI: <https://doi.org/10.24127/ajpm.v12i2.6338>

- <https://doi.org/10.30870/JPPM.V10I2.2040>
- Hendriana, H., Johanto, T., & Sumarmo, U. (2018). The Role of Problem-Based Learning to Improve Students' Mathematical Problem-Solving Ability and Self Confidence. *Journal on Mathematics Education*, 9(2), 291–300.
- Hendriana, H., Slamet, U. R., & Sumarmo, U. (2014). Mathematical Connection Ability And Self-Confidence (An experiment on Junior High School students through Contextual Teaching and learning with Mathematical Manipulative). *International Journal of Education*, 8(1), 1–11.
- Hidayat, D. W., & Pujiastuti, H. (2019). Analisis kesalahan siswa dalam menyelesaikan masalah matematis pada materi himpunan. *Jurnal Analisa*, 5(1), 59–67. <https://doi.org/10.15575/JA.V5I1.4120>
- Irhamna, I., Amry, Z., & Syahputra, H. (2020). Contribution of Mathematical Anxiety, Learning Motivation and Self-Confidence to Student's Mathematical Problem Solving. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, 3(4), 1759-1772. <https://doi.org/10.33258/birle.v3i4.1343>
- Islamiah, N., Purwaningsih, W. E., Akbar, P., & Bernard, M. (2018). Analisis hubungan kemampuan pemecahan masalah matematis dan self confidence siswa SMP. *Journal on Education*, 1(1), 47-57.
- Juanda, J., Johar, R. J., & Ikhsan, M. I. (2014). Peningkatan Kemampuan Pemecahan Masalah dan Komunikasi Matematis Siswa SMP melalui Model Pembelajaran Means-ends Analysis. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 5(2), 105-113. <https://doi.org/10.15294/KREANO.V5I2.3322>
- Khoirunnisa, P. H., & Malasari, P. N. (2021). Analisis kemampuan berpikir kritis matematis siswa ditinjau dari self confidence. *JP3M (Jurnal Penelitian Pendidikan dan Pengajaran Matematika)*, 7(1), 49–56. <https://doi.org/10.37058/JP3M.V7I1.2804>
- Lusiana, R. (2017). Analisis Kesalahan Mahasiswa Dalam Memecahkan Masalah Pada Materi Himpunan Ditinjau Dari Gaya Kognitif. *JPPM (Jurnal Penelitian Dan Pembelajaran Matematika)*, 10(1), 24-29. <https://doi.org/10.30870/JPPM.V10I1.1290>
- Maulidya, N. S., & Nugraheni, E. A. (2021). Analisis hasil belajar matematika peserta didik ditinjau dari self confidence. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 5(3), 2584-2593.
- Mawaddah, S., & Anisah, H. (2015). Kemampuan Pemecahan Masalah Matematis Siswa pada Pembelajaran Matematika dengan Menggunakan Model Pembelajaran Generatif (Generative Learning) di SMP. *EDU-MAT: Jurnal Pendidikan Matematika*, 3(2), 166–175. <https://doi.org/10.20527/EDUMA.T.V3I2.644>
- Mawaddah, S., & Maryanti, R. (2016). Kemampuan Pemahaman Konsep

DOI: <https://doi.org/10.24127/ajpm.v12i2.6338>

- Matematis Siswa SMP dalam Pembelajaran Menggunakan Model Penemuan Terbimbing (Discovery Learning). *EDU-MAT: Jurnal Pendidikan Matematika*, 4(1), 76-85. <https://doi.org/10.20527/EDUMA.T.V4I1.2292>
- Millah, S. N., & Shodikin, A. (2021). Analisis Efektivitas Pembelajaran Daring dengan Pendekatan Kontekstual Terhadap Kemampuan Pemecahan Masalah Matematis. *Unisda Journal of Mathematics and Computer Science (UJMC)*, 7(1), 25–31. <https://doi.org/10.52166/UJMC.V7I1.2184>
- Mutmainnah, A., Putra, Z. H., & Syahrilfuddin, S. (2021). The Relationship Between Fifth Grade Students' Number Sense and Their Mathematical Problem Solving. *PrimaryEdu: Journal of Primary Education*, 5(1), 66–79. <https://doi.org/10.22460/PEJ.V5I1.1722>
- Nahdi, D. S., Jatisunda, M. G., & Suciawati, V. (2021). Pre-service teacher's ability in solving mathematics problems viewed from Self-Resilience. *Malikussaleh Journal of Mathematics Learning (MJML)*, 4(2), 117-123. <https://doi.org/10.29103/MJML.V4I2.2916>
- Novitasari, N. T., & Shodikin, A. (2020). Pengaruh Penerapan Model Pembelajaran Logan Avenue Problem Solving (LAPS-Heuristik) terhadap Kemampuan Pemecahan Masalah pada Soal Cerita Barisan dan Deret Aritmetika. *Jurnal Tadris Matematika*, 3(2), 153–162. <https://doi.org/10.21274/JTM.2020.3.2.153-162>
- Noviyana, I. N., Dewi, N. R., & Rochmad, R. (2019). Analisis Kemampuan Komunikasi Matematis Siswa Ditinjau dari Self-Confidence. *PRISMA, Prosiding Seminar Nasional Matematika*, 2(1), 704–709.
- Nur, R., Utami, F., Nursyifa, Y., & Ratnaningsih, N. (2021). Proses Berpikir Metafora dalam Memecahkan Masalah Segitiga dan Segiempat ditinjau dari Self-Confidence Siswa. *Journal of Authentic Research on Mathematics Education (JARME)*, 3(1), 68–83. <https://doi.org/10.37058/JARME.V3I1.2583>
- Nurafni, A., & Pujiastuti, H. (2019). Analisis Kemampuan Koneksi Matematis ditinjau dari Self Confidence Siswa: Studi Kasus di SMKN 4 Pandeglang. *ANARGYA: Jurnal Ilmiah Pendidikan Matematika*, 2(1), 27-33. <https://doi.org/10.24176/ANARGYA.V2I1.3013>
- Nurfitria, A., & Nindiasari, H. (2018). Peningkatan kemampuan berpikir kreatif matematis dan self-confidence siswa smp melalui pendekatan open-ended ditinjau dari tahap perkembangan kognitif. *GAUSS: Jurnal Pendidikan Matematika*, 1(2), 83-96. <https://doi.org/10.30656/GAUSS.V1I2.997>
- Nurwahid, M., & Shodikin, A. (2021). Komparasi Model Pembelajaran Problem Based Learning dan Inquiry Based Learning Ditinjau dari Kemampuan Pemahaman Konsep dan Pemecahan Masalah Matematika Siswa dalam

DOI: <https://doi.org/10.24127/ajpm.v12i2.6338>

- Pembelajaran Segiempat. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 5(3), 2218–2228. <https://doi.org/10.31004/CENDEKIA.V5I3.346>
- Pitriyani, P., Fitrianna, A. Y., Malinda, P., & Hajar, M. S. (2018). Analisis Kemampuan Koneksi Matematik Siswa MTS Ditinjau dari Self Confidence. *JPPM (Jurnal Penelitian dan Pembelajaran Matematika)*, 11(1), 105-115. <https://doi.org/10.30870/JPPM.V11I1.2989>
- Purnama, S., & Mertika, M. (2018). Analisis Kemampuan Pemecahan Masalah Siswa Ditinjau dari Self Confidence. *Journal of Educational Review and Research*, 1(2), 59-63. <https://doi.org/10.26737/JERR.V1I2.1619>
- Purwanto, Y., & Rizki, S. (2015). Pengembangan bahan ajar berbasis kontekstual pada materi himpunan berbantu video pembelajaran. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 4(1), 67–77. <https://doi.org/10.24127/AJPM.V4I1.95>
- Rahayu, Y., & Pujiastuti, H. (2018). Analisis Kemampuan Pemahaman Matematis Siswa SMP pada Materi Himpunan. *Symmetry: Pasundan Journal of Research in Mathematics Learning and Education*, 3(2), 93–102. <https://doi.org/10.23969/SYMMETRY.V3I2.1284>
- Ramdan, Z. M., Veralita, L., Rohaeti, E. E., & Purwasih, R. (2018). Analisis *Self Confidence* terhadap Kemampuan Pemecahan Masalah Matematis Siswa SMK Pada Materi Barisan dan Deret. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 7(2), 171-179. <https://doi.org/10.24127/ajpm.v7i2.1335>
- Rini, R. H. A., Roza, Y., & Maimunah. (2020). Analisis Kemampuan Komunikasi Matematis Siswa di Tinjau dari Self Confidence Siswa MTs. *APOTEMA: Jurnal Program Studi Pendidikan Matematika*, 6(1), 34–43.
- Rustan, E., & Bahru, M. S. (2018). Penguatan Self Confidence dalam Pembelajaran Matematika melalui Metode Suggestopedia. *Al-Khwarizmi: Jurnal Pendidikan Matematika Dan Ilmu Pengetahuan Alam*, 6(1), 1–14. <https://doi.org/10.24256/JPMIPA.V6I1.282>
- Sari, I., Marwan, M., & Hajidin, H. (2019). Students' Thinking Process in Solving Mathematical Problems in Build Flat Side Spaces of Material Reviewed from Adversity Quotient. *Malikussaleh Journal of Mathematics Learning (MJML)*, 2(2), 61-67. <https://doi.org/10.29103/MJML.V2I2.1468>
- Sariningsih, R., & Purwasih, R. (2017). Pembelajaran *Problem Based Learning* untuk Meningkatkan Kemampuan Pemecahan Masalah Matematis dan Self Efficacy Mahasiswa Calon Guru. *JNPM (Jurnal Nasional Pendidikan Matematika)*, 1(1), 163–177.
- Shodikin, A. (2016). Peningkatan Kemampuan Pemecahan Masalah Siswa Melalui Strategi Abduktif-Deduktif Pada Pembelajaran Matematika. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 6(2), 101–110.

DOI: <https://doi.org/10.24127/ajpm.v12i2.6338>

<https://doi.org/10.15294/KREAN.O.V6I2.3713>

<https://doi.org/10.29103/MJML.V4I2.3905>

- Shodikin, A., Purwanto, P., Subanji, S., & Sudirman, S. (2021). Students' thinking process when using abductive reasoning in problem solving. *Acta Scientiae. Revista de Ensino de Ciências e Matemática*, 23(2), 58-87.
- Sipayung, T. N., Imelda, I., Siswono, T. Y. E., & Masriyah, M. (2021). The significant relationship between independent and student's motivation on online-based mathematics learning. *Malikussaleh Journal of Mathematics Learning (MJML)*, 4(2), 137-140.
<https://doi.org/10.29103/MJML.V4I2.5608>
- Sumartini, T. S. (2016). Peningkatan Kemampuan Pemecahan Masalah Matematis Siswa melalui Pembelajaran Berbasis Masalah. *Mosharafa: Jurnal Pendidikan Matematika*, 5(2), 148-158.
<https://doi.org/10.31980/MOSHA.RAFA.V5I2.270>
- Ulfa, D., Rahmi, D., & Revita, R. (2019). Pengaruh Penerapan Model Pembelajaran *Core* terhadap Kemampuan Pemecahan Masalah Matematis Berdasarkan Self-Confidence Siswa SMP/MTS. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 3(2), 400-409.
- Wulandari, S., Syahbana, A., Tanzimah, T., Shang, Y., Weinhandl, R., & Sharma, R. (2021). Analysis of students' thinking level in solving Pythagoras' theorem problems based on Van Hiele's theory. *Malikussaleh Journal of Mathematics Learning (MJML)*, 4(2), 124-130.