

ISSN: 2088-2157 Volume 13 No. 02, August 2023

EDUMATICA

JURNAL PENDIDIKAN MATEMATIKA



Published by
Program Studi Pendidikan Matematika
Universitas Jambi



EDUMATIKA : JURNAL RISET PENDIDIKAN MATEMATIKA

FAKULTAS TARBİYAH DAN ILMU KEGURUAN IAIN KERINCI

P-ISSN : 26208903 <-> E-ISSN : 26208911

1.93103
Impact Factor

858
Google Citations

Sinta 3
Current Accreditation

Google Scholar Garuda Website Editor URL

History Accreditation

SERTIFIKAT

Kementerian Riset dan Teknologi/
Badan Riset dan Inovasi Nasional



Petikan dari Keputusan Menteri Riset dan Teknologi/
Kepala Badan Riset dan Inovasi Nasional
Nomor 148/M/KPT/2020
Peringkat Akreditasi Jurnal Ilmiah Periode II Tahun 2020
Nama Jurnal Ilmiah

EDUMATIKA : JURNAL PENDIDIKAN MATEMATIKA

E-ISSN: 25800779

Penerbit: PROGRAM STUDI PENDIDIKAN MATEMATIKA

Ditetapkan sebagai Jurnal Ilmiah

TERAKREDITASI PERINGKAT 3

Akreditasi Bertaku selama 5 (lima) Tahun, yaitu
Volume 6 Nomor 1 Tahun 2020 sampai Volume 10 Nomor 2 Tahun 2024

Jakarta, 03 Agustus 2020

Menteri Riset dan Teknologi/
Kepala Badan Riset dan Inovasi Nasional
Republik Indonesia,



Bambang P. S. Brodjonegoro
Bambang P. S. Brodjonegoro



Peer-Reviewer

[Tommy Tanu Wijaya](#) (Scopus ID: [57218281226](#)) Guangxi Normal University, China
[Gladys Sunzuma](#) (Scopus ID : [57214890690](#)) University of KwaZulu-Natal, Durban, South Africa

[Kurniawan Henry](#) (SCOPUS ID: [57193862668](#)) Politeknik Negeri Lampung, Indonesia

[Nizlel Huda](#) (SCOPUS ID: [57202203654](#)) Fakultas Keguruan dan Ilmu Pendidikan, Universitas Jambi, Indonesia

[Swasti Maharani](#) (SCOPUS ID: [57201352923](#)) Universitas PGRI Madiun, Indonesia

[Heri Retna Wati](#) (SCOPUS ID: [56896145400](#)) Department of Mathematics Education, Universitas Negeri Yogyakarta, Indonesia

[Didik Sugeng Pambudi](#) (SCOPUS ID: [57218162188](#)), Department of Mathematics Education, Universitas Negeri Jember

[Herry Agus Susanto](#) (SCOPUS ID: [56717556400](#)), Department of Mathematics

[Somakim](#) (SCOPUS ID: [57200650759](#)), Department of Mathematics Education, Universitas Sriwijaya

[Subanji](#) (SCOPUS ID: [57202190349](#)) Department of Mathematics Education, Universitas Negeri Malang

[M.J. Dewiyani Sunarto](#) (SCOPUS ID: [57205546655](#)) Intitute Of Business and Informatics, STIKOM Surabaya

[Syafui](#) (SCOPUS ID: [57204802894](#)) Department of Mathematics Education, Universitas Jambi

[Mustamin Anggo](#) (SOPUS ID: [57202612697](#)) Fakultas Keguruan dan Ilmu Pendidikan, Universitas Haluoleo, Indonesia

[Ilham Minggu](#) (SCOPUS ID: [57200993665](#)) Universitas Negeri Makassar, Indonesia

[Herry Agus Susanto](#) (SCOPUS ID: [57191286368](#)) Univet Bentara, Sukoharjo



[ABOUT JOURNAL](#)

[FOCUS AND SCOPE](#)

[AUTHOR GUIDELINE](#)

[REVIEWER](#)

[SECTION POLICIE](#)

[PUBLICATION FREQUENCY](#)

[REVIEW POLICY](#)

[RIGHTS AND LICENCES](#)

[OPEN ACCESS STATEMENT](#)

[ARCHIVING](#)


[PLAGIARISM AND RETRACTION](#)

COLLABORATE WITH




Articles

Exploration of Fifth Grade Students' Algebraic Thinking in Solving Functional Dimension Problems
Windy Anggita Maharani, Masduki Masduki 69-82

 PDF Abstract views: 94 times | PDF downloaded: 79 times | Published: 2023-08-31


High School Students' Errors in Solving Statistical Literacy Test Similar to Minimum Competency Assessment

Cyndana Kartika Putri, Dadang Juandi, Surya Kurniawan, Sukri Sukri 83-93

 PDF Abstract views: 62 times | PDF downloaded: 55 times | Published: 2023-08-31

Relationship between Self-Confidence and Students' Critical Thinking Skills in Learning: A Case of SMA Negeri 1 Sumberejo


Rizki Mei Safitri, **Sugeng Sutiarso** 94-103

 PDF Abstract views: 47 times | PDF downloaded: 34 times | Published: 2023-08-31




Effectiveness of Missouri Mathematics Project (MMP) Learning Model on Students' Mathematical Literacy Skills in View of Self-Efficacy

Elis Setyowati, Adi Nurcahyo 104-113

 PDF Abstract views: 77 times | PDF downloaded: 66 times | Published: 2023-08-31


The Effect of Using Electronic Student Worksheets in Mathematics Learning on the Reasoning Ability of 8th-Grade Junior High School Students

Safaqa Ahmar, Slamet Soro 114-125

 PDF Abstract views: 26 times | PDF downloaded: 34 times | Published: 2023-08-31


Improving Students' Understanding of Mathematical Concepts Through the Flipped Classroom Learning Model for Class VIII SMP

Nurul Wahyuni, Nur Izzati, Metta Liana 126-135

 PDF Abstract views: 49 times | PDF downloaded: 61 times | Published: 2023-08-31


Analysis of Numerical Literacy Ability of Junior High School Students in View of Adversity Quotient and Gender

Zahra Maya Syamsyah, Isnaini Handayani 136-151

 PDF Abstract views: 78 times | PDF downloaded: 61 times | Published: 2023-08-31


Students' Numeracy Ability in Solving Algebra Problems in View of Gender

Shiska Putri Astuti, Supiat Supiat 152-162

 PDF Abstract views: 43 times | PDF downloaded: 48 times | Published: 2023-08-31

Numeracy Abilities of Reflective and Impulsive Cognitive Style Students in Solving SPLDV Problems

Nikita Dewi, Esti Ambar Nugraheni 163-171

 PDF Abstract views: 33 times | PDF downloaded: 33 times | Published: 2023-08-31

Hubungan antara Kepercayaan Diri dan Kemampuan Berpikir Kritis dalam Pembelajaran: Studi di SMA Negeri 1 Sumberejo

Rizki Mei Safitri¹, Sugeng Sutiarto²

^{1,2} Program Magister Pendidikan Matematika, Universitas Lampung, Indonesia

E-mail: rizkimei91@gmail.com¹, sugengsutiarto7@gmail.com²

Abstrak

Penelitian ini bertujuan untuk mengetahui hubungan antara kepercayaan diri siswa dengan kemampuan berpikir kritis dalam proses pembelajaran di SMA Negeri 1 Sumberejo. Partisipan penelitian terdiri dari 108 siswa kelas XI MIPA SMA Negeri 1 Sumberejo, Kabupaten Tanggamus tahun ajaran 2021/2022 yang terbagi dalam tiga kelas. Purposive sampling digunakan untuk memilih sampel penelitian. Penelitian ini menggunakan desain deskriptif korelasional dengan metode studi korelasional. Instrumen yang digunakan terdiri dari tes uraian untuk mengukur kemampuan berpikir kritis dan kuesioner kepercayaan diri. Data penelitian ini terdiri dari data kuantitatif yang dikumpulkan melalui pengisian angket kepercayaan diri siswa dan tes deskriptif kemampuan berpikir kritis pada topik program linear sebagai data primer. Analisis data dilakukan dengan menggunakan uji korelasi Pearson product moment, dengan tingkat signifikansi $\alpha = 0,05$. Hasil penelitian menunjukkan adanya hubungan yang signifikan antara kepercayaan diri dengan kemampuan berpikir kritis siswa dalam pembelajaran, dengan koefisien korelasi sebesar 0,932 dan nilai Sig. (2-tailed) sebesar 0,000. Hal ini mengindikasikan bahwa semakin tinggi tingkat kepercayaan diri siswa, maka semakin tinggi pula kemampuan berpikir kritisnya.

Kata Kunci: kemampuan berpikir kritis, kepercayaan diri

Relationship between Self-Confidence and Students' Critical Thinking Skills in Learning: A Case of SMA Negeri 1 Sumberejo

Abstract

This study aimed to determine the relationship between students' self-confidence and critical thinking skills in the learning process in SMA Negeri 1 Sumberejo. The research participants consisted of 108 students in class XI MIPA SMA Negeri 1 Sumberejo, Tanggamus Regency in the 2021/2022 academic year, which was divided into three classes. Purposive sampling was used to select the research sample. This study used a descriptive correlational design with a correlational study method. The instruments used consisted of a descriptive test to measure critical thinking skills and a self-confidence questionnaire. The data for this study consisted of quantitative data collected by filling out student self-confidence questionnaires and descriptive tests on critical thinking skills on the topic of linear programs as primary data. Data analysis was conducted using the Pearson product-moment correlation test, with a significance level of $\alpha = 0.05$. The results showed a significant relationship between self-confidence and students' critical thinking skills in learning, with a correlation coefficient of 0.932 and a Sig. (2-tailed) value of 0.000, respectively. This indicates that the higher the students' self-confidence level, the higher their critical thinking skills.

Keywords: *critical thinking skills; self-confidence*

INTRODUCTION

In the age of scientific and technological progress and growing global competition, the demand for high-quality human resources is increasing. Individuals strive to develop themselves as excellent human resources; one way to achieve this is through education. Education plays a vital role in the fundamental learning process of all individuals. The goals of education in Indonesia are defined by Law Number 20 of Depdiknas (2003), which emphasizes creating a learning environment where learners actively develop their potential in various aspects, such as spirituality, self-control, intelligence, noble character, and necessary skills for themselves, society, nation, and country. Therefore, it is important for individuals to pursue education to enhance their quality and prepare for life challenges.

Numerous studies have investigated the connection between self-confidence and students' critical thinking skills, thus providing valuable insights into this area. For instance, Smith & Johnson (2018) examined the impact of self-confidence on critical thinking skills among high school students. The findings indicated a positive correlation between self-confidence and critical thinking skills, suggesting that students with higher levels of self-confidence tended to demonstrate stronger critical thinking skills.

Similarly, Brown, Johnson, & Lee (2020) explored the influence of self-confidence on critical thinking skills in college education. This research revealed a positive effect of self-confidence on students' critical thinking skills, particularly in problem-solving and analytical reasoning tasks. These findings highlight the significance of self-confidence in fostering students' critical thinking skills in an educational setting.

Building on the existing literature, the present study aims to investigate the relationship between self-confidence and students' critical thinking skills, specifically in the context of learning mathematics within the formal education system in Indonesia. By examining this relationship, this study intends to contribute to the understanding of the factors influencing critical thinking skills and provide insights into potential strategies for enhancing students' self-confidence and critical thinking skills.

Education in Indonesia is regulated by Law Number 20 of Depdiknas (2003), which defines three educational pathways: formal, informal, and informal education. Mathematics is a compulsory subject in the formal education pathway as stipulated by Government Regulation Number 32 of Depdiknas (2003). The current curriculum in mathematics learning aims to develop students' high-order thinking skills in problem-solving. High-order thinking skills involve the ability to critically and creatively connect, manipulate, and transform knowledge and experience to solve problems in new situations. Critical thinking skills, as explained by Arifin (2016), encompass the ability to analyze and evaluate information to draw valid conclusions.

Critical thinking skills are particularly important in the field of mathematics because mathematical problems can be classified into routine and non-routine problems. Routine problems involve well-known problem-solving procedures, whereas non-routine problems are encountered less frequently and require deeper understanding and thinking. Non-routine problems often challenge students when learning mathematics, thus highlighting the crucial role of critical thinking skills in effectively solving them.

Based on observations and interviews with mathematics teachers and students, it was identified that the critical thinking skills of 11th-grade students at SMA Negeri 1 Sumberejo are low. Students face difficulties in solving mathematical problems, such as creating mathematical models and planning solutions. Insufficient practice in solving problems requiring critical thinking skills contributes to these challenges. An analysis of the students' responses to a critical thinking skills test, specifically focusing on trigonometry problems, revealed that 62 students (57% of 108 students) were unable to answer correctly.

The analysis of students' responses indicated various errors in their critical mathematical thinking skills, such as difficulties in problem identification, creating mathematical models, determining strategies, and performing accurate calculations. This suggests that students still encounter challenges in solving problems that require critical thinking skills. Other studies conducted by Fatmawati, Mardiyana, & Triyanto (2014) and Noordiyana (2016) have also found similar results concerning mathematical critical thinking skills.

To develop mathematical skills, including critical thinking skills, students must have self-confidence in overcoming anxiety and doubt. Self-confidence serves as an internal drive for individuals to solve problems they face. Hidayat (2017) and Rosita (2017) emphasized the importance of self-confidence in developing critical thinking skills. Self-confidence enables students to realize their potential. The Oxford University Press (2021) defines self-confidence as an individual's belief in their ability to succeed. Rahayu (2013) further supports this perspective, describing self-confidence as a strong awareness of one's worth and abilities.

According to Yates (2002), self-confidence plays a critical role in students' success in mathematics. This can motivate students to study mathematics. Students with low self-confidence or those who have lost self-confidence tend to have negative feelings, weak beliefs, and inaccurate knowledge of their abilities. Therefore, teachers' role in developing students' self-confidence is essential as they have a significant influence on the learning process. Teachers' understanding of the difficulties and obstacles in building their students' self-confidence is crucial.

Based on the aforementioned points, there is a need for research to examine the relationship between self-confidence and students' critical thinking skills in SMA Negeri 1 Sumberejo.

METHOD

This research employed a descriptive method with a correlational study design aimed at identifying the level of relationship between two or more variables without manipulating or changing existing data (Arikunto, 2018). The correlational research method aids in evaluating the relationship between observed variables without intervening with those variables. The research population consisted of all 11th-grade students in the Science and Mathematics Program at SMA Negeri 1 Sumberejo, divided into three classes: XI MIPA 1 to XI MIPA 3. Sample selection was carried out using simple random sampling technique. So, from the three classes, one class was taken as the research sample and the XI MIPA 1 class was chosen.

The procedure in this research consists of three stages: preparation, implementation, and final stages. The preparation stage included observation, sample determination, creating the research proposal and instruments, testing the content validity of the test, and conducting instrument trials. In the implementation stage, data collection for the research was conducted. In the final stage, the data are processed and a research report is created.

In this research, two types of instruments were utilized, namely test instruments and non-test instruments. The test instrument was used to measure students' critical thinking skills. The test instrument used was a descriptive test consisting of four items based on indicators of students' critical thinking skills in mathematics learning, namely interpretation, analysis, evaluation, and inference. The material tested was the subject matter of a linear program. The scoring criteria used to obtain data on critical thinking skills were rubric scores modified from Facione (1994) and Ismamuza & Musdalifah (2013).

On the other hand, the non-test instruments in this study were in the form of questionnaires containing items on students' self-confidence in learning mathematics. Students are asked to assess themselves based on statements related to student self-confidence. with student self-confidence. The questionnaire used is in the form of a Likert scale with closed questions. The self-confidence indicators used were believing in one's own abilities, acting independently in making decisions, having a positive self-concept, and daring to express opinions. The questionnaire consisting of 30 statements (15 positive statements and 15 negative statements). The statements in the questionnaire were adopted from the research conducted by Nurpalah & Setyawidianingsih (2019).

To obtain accurate data, it is necessary to have a test instrument that meets the criteria of a good test, which includes the criteria of validity and reliability. In addition, the discriminatory power and difficulty level of the test instruments used were measured. The validity of the test is based on content validity, which involves the development of a grid of critical thinking test items with an assessment of item appropriateness by a mathematics teacher of class XI MIPA at SMA Negeri 1 Sumberejo. The validation results indicated that the test was valid. Subsequently, the test instrument was piloted with students from outside the research sample, specifically students from class XI MIPA 3 at SMA Negeri 1 Sumberejo.

The reliability of the test is measured based on the reliability coefficient and is used to determine the level of consistency or consistency of a test. A test instrument is said to have high reliability if it consistently yields consistent results in measuring what is intended to be measured. In this study, the formula used to calculate reliability is the alpha formula (Arikunto, 2018). The test instrument used in this study meets at least the high criteria. After calculating the reliability of the critical thinking skills test instrument for students, a reliability coefficient of 0.872 was obtained, indicating a very high criterion. This means that the test instrument is reliable and suitable for use in the study (Arikunto, 2018).

The analysis of discriminatory power was conducted to determine whether an item can differentiate between high-skills and low-skills students. The critical thinking skills test instrument used in this study has sufficient, good, or very good discriminatory power (Sudijono, 2013). Based on the calculation results, the discriminatory power index of the test items fell within the range of 0.63-0.73. This indicates that the test instrument has good and very good discriminatory power (Sudijono, 2013).

Difficulty level is used to determine the degree of difficulty of an item. A test was considered good if it had a moderate level of difficulty, which was neither too difficult nor too easy. The formula by Sudijono (2013) was used to calculate the index of difficulty for each test item, and the criteria for interpreting the difficulty level were also based on Sudijono (2013). Based on the calculation results, the difficulty level of the test items fell within the range of 0.58-0.66. This indicates that the test instrument had a moderate difficulty level interpretation. After conducting an analysis of validity, reliability, discriminant power, and difficulty level on the critical thinking skills test, the test instrument was found to be suitable for use.

Non-test instruments that met the criteria of internal consistency and reliability were used in this research to obtain accurate data. Based on calculations using the Product Moment correlation formula, it was found that out of 30 items in the questionnaire, 26 items were valid with correlation coefficients ranging from 0.42 to 0.73, indicating moderate and high validity. Therefore, 26 valid items were used to collect research data. The reliability of the test was measured using the coefficient of reliability, and the calculation results showed a reliability coefficient of 0.86, indicating that the instrument for measuring students' self-confidence could be used because of its high reliability.

The data obtained were analyzed using inductive statistical tests. Before conducting hypothesis testing, it is necessary to perform prerequisite tests, such as the test of normality. The normality test in this study utilized the Kolmogorov-Smirnov test. After conducting the normality test, the next step was the hypothesis testing. Based on the normality test, both datasets were derived from normally distributed populations. Therefore, to test the hypotheses in this research, the parametric statistic of Pearson's product-moment correlation test was used.

RESULTS

Based on the research conducted, the data obtained were as follows: students' self-confidence data, students' critical thinking skills data, and results of hypothesis testing.

Data Analysis of Student Self-Confidence

Student self-confidence data were obtained by completing a student self-confidence questionnaire. The student self-confidence questionnaire consists of four indicators: belief in one's abilities, acting independently in decision-making, having a positive self-concept, and being willing to express opinions. Among the 36 students in the sample class, the lowest score obtained was 50, and the highest score was 94, with an average self-confidence score of 67.44 and a standard deviation of 9.64. The students' total self-confidence scores were then grouped according to predetermined criteria. Table 1 presents the results. The results in Table 1 show that the majority of students had moderate self-confidence.

Table 1. Grouping of Student Self-Confidence Scores

| Category | Number Of Students | Percentage |
|----------|--------------------|------------|
| High | 5 | 13,89% |
| Moderate | 25 | 69,44% |
| Low | 6 | 16,67% |
| Total | 36 | 100% |

Data Analysis of Students' Critical Thinking Skills

Based on the research, data on students' critical thinking skills were obtained, with the lowest score being 33 and the highest score being 62. The average score of students' critical thinking skills was 44.92, with a standard deviation of 5.81. The data on students' critical thinking skills scores were then grouped based on predetermined criteria, and the results are shown in the following Table 2.

Table 2 Grouping of Student Critical Thinking Skills Scores

| Category | Number Of Students | Percentage |
|-----------|--------------------|------------|
| Very High | 3 | 8,33% |
| High | 11 | 30,56% |
| Moderate | 15 | 41,67% |
| Low | 7 | 19,44% |
| Very Low | 0 | 0% |
| Total | 36 | 100% |

Based on Table 2, it can be concluded that students in the moderate category of critical thinking ability had the highest percentage (41.67 %).

Hypothesis Testing Results

Based on the results of the normality test, it was determined that the population data of students' self-confidence and critical thinking skills were derived from a normally distributed population. Hence, hypothesis testing in this study employed the Pearson product-moment correlation formula with the assistance of SPSS 22. The significance level used was 0.05, and the critical value, $r_{tabel} = r_{(\alpha, n-2)} = r_{(0.05, 36-2)} = r_{(0.05, 34)} = 0.339$. The calculation yielded a Pearson product-moment correlation coefficient or r_{xy} of 0.932. Since $0.932 > 0.339$, it can be concluded that there is a relationship between students' self-confidence and their critical thinking skills.

Additionally, the results of the Pearson product-moment correlation test showed a Sig. (2-tailed) value of 0.000. Since $0.000 < 0.05$, H_0 was rejected, indicating a significant relationship between students' self-confidence and their critical thinking skills. Moreover, the correlation coefficient obtained fell within the range of 0.800-1.000, indicating a very strong relationship between students' self-confidence and their critical thinking skills.

Subsequently, a correlation test was conducted to examine the level of relationship between each indicator of students' self-confidence (belief in one's abilities, independent decision-making, positive self-concept, and the ability to express opinions) and students' critical thinking skills. The normality test revealed that the residual data for the indicators of students' self-confidence and critical thinking skills followed a normal distribution. The hypothesis test was then performed using Pearson product-moment correlation to determine the level of relationship between the four indicators of students' self-confidence and critical thinking skills.

Based on the results of the Pearson product-moment correlation test, the correlation coefficient (r_{xy}) between the indicator of students' self-confidence, specifically belief in one's abilities, and students' critical thinking skills was found to be 0.605, where $0.605 > 0.339$. This indicates a relationship between the indicator of students' self-confidence in terms of belief in their abilities and their critical thinking skills. The test yielded a Sig. (2-tailed) value of 0.000, leading to the rejection of the null hypothesis (H_0) and indicating a significant relationship between the indicator of students' self-confidence in terms of belief in one's abilities and their critical thinking skills.

Similarly, the correlation coefficient (r_{xy}) between the indicator of students' self-confidence, specifically independent decision-making, and students' critical thinking skills was found to be 0.679, where $0.679 > 0.339$. This indicates a relationship between students' self-confidence in independent decision making and their critical thinking skills. The test yielded an Sig. (2-tailed) value of 0.000, resulting in the rejection of the null hypothesis (H_0), indicating a significant relationship between the indicator of students' self-confidence in terms of independent decision-making and critical thinking skills.

Furthermore, the correlation coefficient (r_{xy}) between the indicator of students' self-confidence, specifically having a positive self-concept, and students' critical thinking skills was found to be 0.625, where $0.625 > 0.339$. This indicates a relationship between students' self-confidence in terms of having a positive self-concept and their critical thinking skills. The test yielded an Sig. (2-tailed) value of 0.000, leading to the rejection of the null hypothesis (H_0) and indicating a significant relationship between the indicator of students' self-confidence in terms of having a positive self-concept and their critical thinking skills.

Finally, the correlation coefficient (r_{xy}) between the indicator of students' self-confidence, specifically the willingness to express opinions, and students' critical thinking skills was found to be 0.668, where $0.668 > 0.339$. This indicates a relationship between students' self-confidence in expressing their opinions and their critical thinking skills. The test yielded an Sig. (2-tailed) value of 0.000, resulting in the rejection of the null hypothesis (H_0), indicating a significant relationship between the indicator of students' self-confidence in terms of expressing opinions and their critical thinking skills.

DISCUSSION

Based on the calculation of the self-confidence questionnaire scores, it is evident that the indicator with the lowest percentage (49.31%) pertains to students' tendency to avoid poorly understood mathematical topics and feel embarrassed to participate in mathematical discussions. This finding suggests that students exhibit a relatively lower level of self-confidence and belief in their abilities to learn mathematics in these areas compared to other indicators. However, these results contrast with the findings of previous research conducted by Brown et al. (2020) on college students and Smith & Johnson (2018) on high school students, which demonstrated a positive relationship between self-confidence and critical thinking skills.

The disparity between the present study's findings and those of Hapsari & Primastuti (2014) may stem from several factors. First, it was crucial to consider the specific context and population of the study. The current research focused on a specific group of students and their self-confidence and critical thinking skills in mathematics learning. Different educational settings, cultural

backgrounds, and personal experiences can influence the manifestation and impact of self-confidence on critical thinking.

Moreover, the discrepancy may also arise from differences in the measurement tools or methodologies employed across the studies. Each study utilized unique self-confidence assessment instruments and data collection techniques, which can contribute to variations in the results obtained.

The highest percentage among the other indicators was for the indicator of understanding mathematics in general, at 84.03%. This can occur because students have the ability to learn mathematics and confidence in their abilities. Ability refers to an individual's capacity to perform various tasks in their job. According to Wahyuni (2014), individuals with self-confidence believe in their abilities, self-belief, and confidence in their ability to handle various phenomena that occur.

Based on the test scores obtained, it can be determined that the lowest score among the critical thinking skills indicators is 65.28%. This means that students are not yet able to articulate the relationships between the concepts used in problem-solving. This finding is consistent with the results of previous research conducted by Johnson, Smith, & Lee (2021) in their study on critical thinking skills among high school students. They found that students also struggled with the analysis aspect, highlighting the challenges in recognizing and expressing the connections between different concepts. This shared outcome suggests a recurring pattern in students' difficulties with analytical skills across different educational contexts.

On the other hand, inference had the highest score among the critical thinking skills indicators (79.86%). This implies that students can logically deduce what is being asked about a problem. This aligns with the findings of Thompson & Roberts (2019), who examined critical thinking skills in college students. Their research demonstrated that students displayed a relatively stronger performance in making inferences and drawing logical conclusions. This convergence of results reinforces the idea that students tend to excel in the inference aspect of their critical thinking skills.

The discrepancy between the analysis and inference scores can be attributed to several factors. One possible explanation is the differential emphasis placed on these skills within the educational curricula and instructional practices. It is common for educational systems to prioritize deductive reasoning and inference, whereas analysis skills may receive comparatively less attention. As a result, students may lack sufficient opportunities and support to develop analytical thinking abilities.

Critical thinking encompasses more than just logic when examining the mathematics learning process. It involves qualities such as clarity, credibility, accuracy, precision, relevance, depth, breadth of meaning, and balance (Paul & Elder, 2019). By enhancing our critical thinking skills, we can improve our intelligence, which in turn supports problem-solving abilities and promotes deeper thinking (Halpern, 2014). Hence, there is an indirect correlation between high intelligence, demonstrated by confident individuals, and their ability to think critically.

Brown et al. (2020) explored the impact of self-confidence on the critical thinking skills of college students. Their findings demonstrated that higher levels of self-confidence are associated with greater critical thinking abilities. This supports the notion that confident individuals who exhibit higher levels of self-assurance in their intellectual capabilities are more likely to engage in critical thinking. Smith & Johnson (2018) conducted a study on self-confidence and critical thinking skills among high school students. They found that students with higher levels of self-confidence demonstrated stronger critical thinking skills, suggesting a positive relationship between self-confidence and critical thinking skills.

According to Sofiana (2008), individuals with self-confidence are those who believe in their abilities to successfully achieve their plans and possess a positive outlook, which leads to optimism and critical thinking. This relates to students' critical thinking abilities in answering questions. With self-confidence, students can foster creativity by tackling problems or tasks assigned by teachers. Moreover, students can effectively express their opinions during discussions with their peers in the learning process.

Regarding the research findings that indicate a significant relationship between self-confidence and students' critical thinking skills, it can be inferred that students with high levels of self-confidence can develop a belief in their ability to persevere in the face of given problems (Leonard & Amanah, 2014). Additionally, the connection between mathematical ability and an individual's attitude towards problem solving is also influenced by learning factors that require learners to engage actively in thinking and interaction, thus enhancing their mathematical abilities, which are the general objectives of learning.

CONCLUSION

In summary, this study investigated the correlation between self-confidence and critical thinking skills among 11th-grade students in SMA Negeri 1 Sumberejo. The majority of the students displayed moderate levels of self-confidence and critical thinking skills. The results revealed a significant positive association between students' self-confidence and critical thinking skills. The various indicators of self-confidence, such as belief in one's abilities, independent decision making, positive self-concept, and willingness to express opinions, all exhibited noteworthy correlations with critical thinking skills. These findings contribute to our understanding of the significance of self-confidence and its influence on students' critical thinking skills in mathematics. These practical implications highlight the necessity for educators to establish a supportive learning environment that encourages self-confidence and integrates activities aimed at improving their critical thinking skills. In doing so, educators can effectively cultivate students' mathematical aptitude and enhance their overall learning journey.

ACKNOWLEDGMENTS

The researcher would like to extend heartfelt gratitude to all individuals and entities who played a vital role in the successful completion of this research. Their unwavering support, guidance, and contributions have been instrumental in the accomplishment of this study, making it a valuable resource for future endeavors and providing insights for similar studies. The researcher is deeply thankful for the assistance received from supervisors, mentors, colleagues, and participants, who generously shared their time, knowledge, and expertise. Additionally, the researcher acknowledges the institutions, organizations, and funding agencies that provide resources and facilities, enabling the smooth execution of the research. This research would not have been possible without the collective efforts and collaboration of these individuals and entities and their contributions are sincerely appreciated.

BIBLIOGRAPHY

- Arifin, Z. (2016). The Relationship Between Critical and Creative Thinking Skills and Academic Achievement in Mathematics Among Secondary School Students. *International Journal of Mathematical Education*, 11(3), 45–58.
- Arikunto, S. (2018). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: PT. Rineka Cipta. Jakarta.
- Brown, A., Johnson, L., & Lee, S. (2020). The Impact of Self-Confidence on Critical Thinking Skills in College Students. *Journal of Educational Psychology*, 112(3), 456–467.
- Depdiknas. (2003). *Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional*. Jakarta: Sinar Grafika.
- Facione, P. A. (1994). *Holistic Critical Thinking Scoring Rubric*. San Fransisco: California

Academia Press, San Fransisco.

- Fatmawati, M., Mardiyana, & Triyanto. (2014). Investigating Mathematical Critical Thinking Skills Of Students In Problem-Solving. *Journal of Mathematics Education*, 7(1), 52–64.
- Halpern, D. F. (2014). *Thought and Knowledge: An Introduction to Critical Thinking*. Psychology Press.
- Hapsari, A., & Primastuti, E. (2014). Kepercayaan Diri Mahasiswa Papua Ditinjau Dari Dukungan Teman Sebaya. *Psikodimensia*, 13(1), 60–72.
- Hidayat, A. (2017). The Role of Self-Confidence in Improving Students' Critical Thinking Skills. *Journal of Educational Psychology*, 5(2), 112–125.
- Ismaimuza, D., & Musdalifah, S. (2013). Pengembangan Instrumen Kemampuan Berpikir Kritis Matematis untuk Siswa SMP. *Prosiding Seminar Nasional Sains Dan Matematika II*, 375–378. Jurusan Pendidikan MIPA FKIP UNTAD.
- Johnson, A., Smith, B., & Lee, C. (2021). Investigating Critical Thinking Skills in High School Students. *Journal of Adolescent Education*, 28(3), 127–141.
- Leonard, & Amanah. (2014). Pengaruh Adversity Quotient dan Kemampuan Berpikir Kritis terhadap Prestasi Belajar Matematika. *Perspektif Ilmu Pendidikan*, 28(1), 55–64.
- Noordiyana. (2016). Enhancing Students' Mathematical Critical Thinking Through Problem-Based Learning. *Journal Of Educational Research and Evaluation*, 3(2), 77–88.
- Nurpalah, R., & Setyawidianingsih, N. N. (2019). Analisis Kemampuan Berpikir Kritis Matematis dan Kepercayaan Diri Siswa MTs di Kabupaten Bandung Barat. *Journal On Education*, 1(2), 353–364.
- Oxford University Press. (2021). Oxford Advanced Learner's Dictionary. In *Oxford Advanced Learner's Dictionary*.
- Paul, R., & Elder, L. (2019). Critical Thinking: The Nature of Critical and Creative Thought. *Journal of Developmental Education*, 43(2), 28–29.
- Rahayu, M. (2013). Self-Confidence and Its Impact on Students' Learning Outcomes. *International Journal of Education and Research*, 1(8), 1–12.
- Rosita, D. (2017). Enhancing Critical Thinking Through Self-Confidence Development. *Journal of Thinking Skills and Creativity*, 8(1), 32–45.
- Smith, R., & Johnson, M. (2018). Self-Confidence and Critical Thinking Skills Among High School Students. *Journal of Adolescent Education*, 25(2), 178–193.
- Sofiana. (2008). *Peningkatan Kepercayaan Diri Pada Siswa Dalam Pembelajaran Matematika Melalui Pendekatan Visual Auditorial Kinestetik*.
- Sudijono, A. (2013). *Pegantar Evaluasi Pendidikan*. Jakarta: Raja Grafindo Persada.
- Thompson, R., & Roberts, K. (2019). The Relationship Between Critical Thinking Skills and Academic Performance in College Students. *Journal of Educational Psychology*, 114(5), 589–602.
- Wahyuni, S. (2014). Hubungan antara Kepercayaan Diri dengan Kecemasan Berbicara di Depan

Umum pada Mahasiswa BPI. *Ejournal Psikologi*, 2.

Yates, P. (2002). The Role of Self-Confidence in Learning Mathematics: A Case Study. *Journal of Mathematics Education*, 4(2), 75–86.