JURNAL ABSIS
Jurnal Pendidikan Matematika dan Matematika
Vol. 7 No. 1, August 2024

DEVELOPMENT OF CONTEXTUAL APPROACH-BASED STUDENT WORKSHEETS TO FACILITATE MATHEMATICAL PROBLEM-SOLVING SKILLS IN SYSTEMS OF LINEAR EQUATIONS IN TWO VARIABLES

Sri Wahyuni[1], *Susda Heleni[2], Atma Murni[3]
[1,2,3] Universitas Riau, Indonesia
susda.heleni@lecturer.unri.ac.id

ABSTRACT The central issue addressed in this research is the low level of students' mathematical problem-solving skills. This study aims to develop student worksheets based on a contextual approach to facilitate mathematical problem-solving skills in the material on systems of linear equations in two variables for Grade 8 students in junior high schools or madrasas. The worksheets are designed to meet the criteria of validity and practicality. The research followed the 4D development model, which includes four stages: Define, Design, Develop, and Disseminate. The study involved Grade 8 students from SMP Babussalam Pekanbaru, with 3 students participating in the one-to-one stage, 6 students in the small group trial, and 25 students in the large group trial. Data collection techniques included the use of validity and practicality instruments. The validity of the worksheets was assessed using validation sheets, while the practicality was evaluated through student response questionnaires. The results showed that the worksheets received a validity score of 3.6, categorised as "very valid." Additionally, the student response questionnaires yielded scores of 93% in the small group trial and 91% in the large group trial, both categorised as "very practical." Therefore, it can be concluded that the worksheets based on a contextual approach to facilitate mathematical problem-solving skills in systems of linear equations in two variables for Grade 8 meet the criteria of being valid and practical.

Keywords: mathematical problem-solving skills, contextual approach, student worksheet, system of linear equations in two variables.

ABSTRAK Masalah utama yang diangkat dalam penelitian ini adalah rendahnya kemampuan pemecahan masalah matematis siswa. Penelitian ini bertujuan untuk mengembangkan lembar kerja siswa berbasis pendekatan kontekstual untuk memfasilitasi kemampuan pemecahan masalah matematis pada materi sistem persamaan linear dua variabel untuk

https://doi.org/10.30606/absis.v7i1.2625

siswa kelas 8 di sekolah menengah pertama atau madrasah. Lembar kerja ini dirancang untuk memenuhi kriteria validitas dan kepraktisan. Penelitian ini menggunakan model pengembangan 4D, yang meliputi empat tahap: Pendefinisian, Perancangan, Pengembangan, dan Penyebaran. Subjek penelitian ini melibatkan siswa kelas 8 dari SMP Babussalam Pekanbaru, dengan 3 siswa berpartisipasi dalam tahap one-to-one, 6 siswa dalam uji coba kelompok kecil, dan 25 siswa dalam uji coba kelompok besar. Teknik pengumpulan data yang digunakan meliputi instrumen validitas dan kepraktisan. Validitas lembar kerja dinilai menggunakan lembar validasi, sedangkan kepraktisan dievaluasi melalui angket tanggapan siswa. Hasil penelitian menunjukkan bahwa lembar kerja memperoleh skor validitas 3,6, yang dikategorikan sebagai "sangat valid." Selain itu, angket tanggapan siswa memberikan skor 93% pada uji coba kelompok kecil dan 91% pada uji coba kelompok besar, keduanya dikategorikan sebagai "sangat praktis." Oleh karena itu, dapat disimpulkan bahwa lembar kerja berbasis pendekatan kontekstual untuk memfasilitasi kemampuan pemecahan masalah matematis pada materi sistem persamaan linear dua variabel untuk siswa kelas 8 memenuhi kriteria valid dan praktis.

Keywords: kemampuan pemecahan masalah matematis, CTL, lembar kerja pserta didik, SPLDV.

INTRODUCTION

In learning mathematics, one of the key skills that students should develop is mathematical problem-solving skills (Hendriana et al., 2017). The ability to solve problems is outlined in the general objectives of the 2013 mathematics curriculum, where students are expected to: 1) understand, explain relationships between concepts, and apply them accurately and precisely, 2) solve problems, create mathematical models, solve these models, and interpret the results, and 3) have an appreciation for the usefulness of mathematics in everyday life (Isharyadi, 2018). Mathematical problem-solving skills play a crucial role in mathematics education because, according to Mukasyaf et al. (2019), students with strong problem-solving skills are able to handle various mathematical problems. Similarly, Tanti (2010) emphasized that these skills are essential, as they allow students to explore mathematical problems more deeply, thereby fostering critical and creative thinking in developing solutions.

However, the importance of mastering mathematical problem-solving skills does not align with the current reality, where students' abilities in this area tend to be low. This is supported by research conducted by Annisa et al. (2021), which analyzed problem-solving skills at SMPN 3 Bangkinang. Their findings revealed that the majority of students struggled to develop problem-solving strategies and failed to recheck their answers. For example, the percentage of students completing the implementation stage of problem-solving was less than 50%, with only 45.83% completing it. At this stage, students were less careful and made calculation errors, leading to mistakes in their solutions. Furthermore, the percentage of students who correctly completed the stage of re-examining their results was only 19.44%. A similar study by Suraji et al. (2018) at a junior high school in Pekanbaru also indicated difficulties in problem-solving, particularly with systems of linear equations in two

variables. When given a problem related to this topic, students found it difficult to solve because it differed from the examples provided by the teacher. Many students did not understand the underlying process for deriving formulas and simply memorized them, which left them unable to apply the information they had learned to develop a plan for solving the problem. When faced with problems containing tricky data, many students assumed that all the given information must be used in their solution, leading to confusion. These studies show that students' problem-solving skills, particularly with systems of linear equations in two variables, remain low.

According to Nissa (2015), the cause of these low mathematical problem-solving skills is that learning tends to be teacher-centered and does not emphasize problem-solving or start with presenting problems. Teachers also face challenges in adjusting the problems to accommodate students' cognitive differences and require extra time to teach problem-solving processes. Jatisunda (2016) added that problem-solving skills remain low because students are not accustomed to solving real-world, problem-based tasks. Students typically work on routine problems by following formulas and procedures modeled by the teacher, which makes it difficult for them to find solutions to non-routine problems.

One of the strategies to improve students' mathematical problem-solving skills is through an approach that encourages active participation in learning, such as the contextual approach. Anggriyani (2020) noted that the contextual approach helps teachers connect real-world situations with the topics being studied, allowing students to relate their prior knowledge to practical applications in their daily lives, both within the family and the wider community. Putra (2013) suggested that using a contextual approach in learning can strengthen students' conceptual understanding and make learning more productive. By directly linking problems to real-world situations, the contextual approach is expected to make it easier for students to find solutions to mathematical problems.

In classroom teaching and learning activities, smooth facilitation of learning can be achieved through the use of teaching materials, one of which is the student worksheet. Aldila et al. (2017) explained that student worksheets are instructional materials that include guidelines for use and procedures for completing theoretical or practical tasks. According to Prastowo (in Lathifah et al., 2021), student worksheets can help students become more active in learning and reduce the role of the teacher. Well-designed worksheets can have a positive impact and enhance the development of mathematical problem-solving skills, so it is crucial to design worksheets that meet students' needs.

Several previous studies have conducted similar research. For example, Veny (2020) developed student worksheets that also aimed to facilitate problem-solving skills. However, Veny's research was based on a problem-based learning approach, while this study is based on a contextual approach. Similarly, Arlina (2021) also conducted research on the development of student worksheets using a contextual approach.

https://doi.org/10.30606/absis.v7i1.2625

The difference is that her research did not focus on specific mathematical skills, and the material used was different. This research focuses on developing student worksheets based on a contextual approach that are designed to facilitate the problem-solving skills of Grade 8 students in junior high school or madrasas, specifically for systems of linear equations in two variables, while meeting valid and practical criteria.

METHODS

This research is a type of developmental research that utilizes the 4D model. The 4D stages consist of Define, Design, Develop, and Disseminate (Thiagarajan et al., 1974). The Define stage involves investigating the material boundaries and objectives to identify and determine learning needs. Activities in this stage include initial-final analysis, student analysis, concept analysis, task analysis, and the formulation of learning objectives. The Design stage focuses on preparing and determining the initial design of the developed student worksheets. Activities carried out in this stage include the preparation of assessment criteria, format selection, media selection, and the initial design of the worksheets.

Following this, the Develop stage is the realization phase of the product. Here, formative evaluation is conducted, which includes expert validation and one-on-one evaluations with students. Additionally, a practicality analysis is carried out by testing the student worksheets with small and large groups of students. The Disseminate stage involves distributing the student worksheets that are deemed suitable for use. The research subjects included 8th-grade students from SMP Babussalam Pekanbaru. Specifically, 3 students participated in the one-to-one evaluation stage, 6 students took part in the small group trial, and 25 students were involved in the large group trial. The data collected were both quantitative and qualitative. Quantitative data consisted of validation scores and practicality scores, while qualitative data came from the comments of experts and students regarding the student worksheets. Data collection was carried out using validation and practicality assessment techniques for the student worksheets. The research instruments used included validation sheets and practicality instruments, such as student response questionnaires.

Data analysis was performed in two ways: validity analysis and practicality analysis. The validity of the student worksheets was interpreted according to criteria proposed by Arikunto (2012) as shown in Table 1. If the student worksheets are categorized as at least "valid," they are considered suitable for testing with students.

Table 1. Student Worksheet Validity Categories

Interval	Category
$3{,}25 \leq \overline{T_V} \leq 4$	Very Valid
$2{,}50 \leq \overline{T_V} < 3{,}25$	Valid

Interval	Category
$1{,}75 \leq \overline{T_V} < 2{,}50$	Less Valid
$1{,}00 \leq \overline{T_V} < 1{,}75$	Invalid

The practicality of the student worksheets is interpreted based on the criteria compiled by Akbar (2017), as shown in Table 2. If the worksheets are at least categorized as "practical," they are considered to have good practicality.

Table 2. Student Worksheet Practicality Categories

Interval	Level of Practicality
$85\% \leq \overline{V_p} < 100\%$	Very Practical
$70\% \leq \overline{V_p} < 85\%$	Practical
$50\% \leq \overline{V_p} < 70\%$	Less Practical
$25\% \leq \overline{V_p} < 50\%$	Impractical

FINDING AND DISCUSSION

This developmental research aimed to produce student worksheets based on a contextual approach to facilitate students' mathematical problem-solving skills in the topic of systems of linear equations in two variables for Grade 8 students of junior high schools or madrasas. The development process followed the 4D model, which includes the stages of Define, Design, Develop, and Disseminate. Below is an overview of the development stages in this research:

Define Stage

The Define stage was crucial in identifying the learning needs by analyzing the scope of the material and objectives. During the initial-final analysis, observations and interviews were conducted with mathematics teachers at Babussalam Pekanbaru Junior High School regarding the learning resources used in Grade 8. The results showed that while teaching, teachers relied on textbooks from publishers rather than providing student worksheets, which did not fully enhance students' learning experiences or develop their problem-solving skills in mathematics. Some challenges encountered by teachers while teaching the topic of systems of linear equations in two variables include the following:

- Students struggled to convert word problems into mathematical equations to find solutions.
- They had difficulty solving problems when the form of the problem differed from the examples provided by the teacher.
- Many students failed to follow a structured problem-solving process and were not accustomed to working on context-based problems related to daily life.

https://doi.org/10.30606/absis.v7i1.2625

As a result, students tended to become easily fatigued and were unable to gain meaningful insights from their mathematics lessons. Therefore, a solution is needed to address these challenges by providing student worksheets that align with the 2013 curriculum and stimulate students' interest, thereby actively engaging them in the problem-solving process with exercises related to real-life contexts.

In the student analysis step, a preliminary study was conducted to assess the level of students' mathematical problem-solving skills and gather feedback about the textbooks used during mathematics lessons. The focus on problem-solving skills stems from previous research indicating that problem-solving skills in Indonesia, particularly on the topic of systems of linear equations in two variables, remain low. Suraji et al. (2018) agreed that students still encounter difficulties when solving problems related to systems of linear equations in two variables due to the lack of concrete examples. Consequently, abstract mathematical ideas become difficult for students to grasp. By providing concrete examples through contextual problems, students can independently construct their own understanding to solve real-life problems. Based on interviews with students at Babussalam Pekanbaru Junior High School, it was revealed that they found it challenging to understand the teaching materials used at school, especially when working with word problems. Students also reported that the textbooks were not engaging and that the content lacked relevance to their daily lives. Hence, there is a need to develop learning materials in the form of student worksheets for systems of linear equations in two variables to enhance their mathematical problem-solving skills.

Concept Analysis

Concept analysis was conducted to identify and systematically organize the related concepts covered in the student worksheets. According to the Ministry of Education and Culture Regulation No. 37 of 2018, the basic competencies for the topic of systems of linear equations in two variables in the 2013 curriculum include the following:

1. Explaining the system of linear equations in two variables and its solutions, especially in the context of real-life problems.
2. Solving problems related to systems of linear equations in two variables.

Based on these competencies, a concept map for systems of linear equations in two variables was created to serve as a guide for the learning process.

Learning Activity Plan

Based on the concept map, a learning activity plan was designed with a clear allocation of time for each subtopic, as detailed in the table below.

Table 3. Time Allocation for Systems of Linear Equations in Two Variables

Meeting No.	Subtopics	Time Allocation
I	Introduction to Systems of Linear Equations in Two Variables (SLETV) and their solutions using the graphical method	3 JP
II	Solving SLETV using the substitution method	2 JP
III - IV	Solving SLETV using the elimination method and the combination method	3 JP, 2 JP

Description: 1 JP = 40 minutes

Task Analysis

During the task analysis, the basic competencies of systems of linear equations in two variables were further examined to serve as a reference for preparing the Competency Achievement Indicators. Additionally, the formulation of learning objectives, which include both knowledge and skill components, was completed. Below are the results of the formulated learning objectives:

Table 4. Formulated Learning Objectives

No.	Learning Objectives
1	Generate a system of linear equations in two variables from contextual problems.
2	Determine the solution to a system of linear equations using the graphing method.
3	Solve contextual problems related to systems of linear equations using the graphing method.
4	Determine the solution to a system of linear equations using the substitution method.
5	Solve contextual problems using the substitution method for systems of linear equations.
6	Determine the solution to a system of linear equations using the elimination method.
7	Solve contextual problems using the elimination method for systems of linear equations.
8	Determine the solution to a system of linear equations using the combination method.
9	Solve contextual problems using the combination method for systems of linear equations.

Design Stage

The purpose of the design stage is to create an initial prototype and develop student worksheets based on a contextual approach. The prototype is designed to facilitate

https://doi.org/10.30606/absis.v7i1.2625

students' mathematical problem-solving skills, particularly in the topic of systems of linear equations in two variables. During this stage, validation sheets were prepared to assess the validity of the worksheets by experts. Additionally, student response questionnaires were developed to measure the practicality of the worksheets. The validation sheets focused on various assessment aspects, including alignment with technical, didactic, and construction requirements; alignment between the material and learning objectives (KD); alignment between worksheet problems and the contextual approach; and alignment between worksheet activities and problem-solving skills. The student response questionnaire, on the other hand, evaluated aspects such as clarity of instructions, visual appeal, use of appropriate language, and relevance of problems to daily life.

In the media selection step, printed materials were chosen as the format for the student worksheets. The printed format, in the form of books, was deemed easier for both students and teachers to use, both during and outside of learning sessions.

During the format selection step, it was determined that each worksheet would include: (1) a cover page with meeting numbers, material titles, images, class/semester information, group member details, learning objectives, and instructions for completion; and (2) content designed based on a contextual approach, incorporating components like learning communities, questioning, constructivism, inquiry, reflection, and authentic assessment.

In the initial design step, the first prototype was created, with each worksheet divided by subtopics as follows:

- Worksheet 1: Introduction to systems of linear equations in two variables and solutions using the graphical method.
- Worksheet 2: Solving systems of linear equations using the substitution method.
- Worksheet 3: Solving systems of linear equations using the elimination method.
- Worksheet 4: Solving systems of linear equations using the combination method.

Develop Stage

In the develop stage, the first prototype was validated by three experts to determine its level of validity. The results of the validation are presented in the following table:

Table 5. Student Worksheet Validation Results

Aspects Evaluated	Average Assessment of Worksheet				Average	Category
	I	II	III	IV		
Alignment of Worksheets with Technical Requirements	3,67	3,67	3,67	3,67	3,67	Very Valid
Alignment of Worksheets with Didactic Requirements	3,67	4	3,67	4	3,84	Very Valid
Alignment of Worksheets with Construction Requirements	3	3,33	3	3,33	3,17	Valid

Aspects Evaluated	Average Assessment of Worksheet				Average	Category
	I	II	III	IV		
Alignment of Material with Learning Objectives (KD)	3,67	3,67	3,67	3,67	3,67	Very Valid
Alignment of Worksheet Problems with the Contextual Approach	3,58	3,83	3,75	3,92	3,77	Very Valid
Alignment of Worksheet Activities with Learning Outcomes	3,42	3,42	3,5	3,42	3,44	Very Valid
Total Validation Average	3,50	3,66	3,54	3,67	3,60	Very Valid

From Table 5, the average validity score of the worksheets is 3.60, which is categorized as "Very Valid." This score indicates that the worksheets meet the required technical, didactic, and construction criteria. The problems presented in the worksheets align with the contextual approach, and the activities address key problem-solving skills. Therefore, the worksheets are suitable for further testing.

The student worksheets were tested during the one-on-one evaluation stage with three students from Class VIII of SMP Babussalam Pekanbaru. This stage aimed to assess the readability of the worksheets and identify any challenges students faced while using them. The feedback from students was generally positive. One student mentioned that the worksheets were interesting and well-designed. Another student commented that the worksheets were very good, easy to understand, and clearly written. The third student expressed that the material was easy to follow and comprehend. These comments were considered in making revisions to improve the worksheets before proceeding to the small-group trial phase.

After making revisions based on the students' feedback, the worksheets were tested with a small group of six students from Class VIII.4 at Babussalam Pekanbaru Junior High School. The students completed the worksheets and filled out a response questionnaire to evaluate the practicality of the product. The results of the small group practicality test are shown in the following table:

Table 6. Small Group Practicality Results

Statement	Average Assessment to Worksheet (%)				Average (%)	Category
	I	II	III	IV		
The worksheet display uses clear colors and images.	100	92	92	96	95	Very Practical
The instructions for use in the worksheet are clear, making it easier for students.	92	92	88	96	92	Very Practical
The writing can be read clearly.	96	100	100	100	99	Very Practical
A series of questions on the topic of systems of linear equations in	92	92	88	88	90	Very Practical

https://doi.org/10.30606/absis.v7i1.2625

Statement	Average Assessment to Worksheet (%)				Average (%)	Category
	I	II	III	IV		
two variables presented here can be found in everyday life.						
T he language used in this worksheet is easy to understand.	88	96	88	92	91	Very Practical
Total Average	93	94	91	94	93	Very Practical

Based on the small group practicality test results in Table 6, the worksheets were classified as "Very Practical," with an average score of 93%. Consequently, the worksheets were deemed ready for the next stage of testing.

In the large group trial, 23 students from Class VIII.3 at Babussalam Pekanbaru Junior High School worked on the worksheets and filled out a response questionnaire to measure practicality. The results are summarized in the table below:

Table 7. Large Group Practicality Results

Statement	Average Assessment to Worksheet (%)				Average (%)	Category
	I	II	III	IV		
The worksheet display uses clear colors and images.	88	90	92	92	91	Very Practical
The instructions for use in the worksheet are clear, making it easier for students.	88	91	93	89	90	Very Practical
The writing can be read clearly.	96	95	96	96	96	Very Practical
A series of questions on the topic of systems of linear equations in two variables presented here can be found in everyday life.	84	86	87	85	86	Very Practical
T he language used in this worksheet is easy to understand.	87	92	92	90	90	Very Practical
Total Average	89	91	92	90	91	Very Practical

Table 7 shows that the large group trial achieved an average score of 91%, classifying the worksheets as "Very Practical." The results are consistent with Akbar's (2017) criteria, indicating that a score above 70% is sufficient for a product to be considered practical. The feedback from students in the large group trial indicated that the worksheet design was visually appealing, easy to follow, and helped them engage with the material.

Dissemination Stage

The dissemination stage consisted of two activities: product packaging and distribution to schools. The finalized worksheets were delivered to Babussalam Pekanbaru Junior High School, allowing them to be implemented in the learning

process. Additionally, online publication of the product was initiated to ensure its broader adoption by other educational institutions.

Figure 1. The Worksheet Cover

CONCLUSIONS AND RECOMMENDATIONS

This development research produced teaching modules based on problem-based The final product developed in this research is a student worksheet designed using a contextual approach, specifically aimed at facilitating the mathematical problem-solving skills of eighth-grade students studying systems of linear equations in two variables. The product development process was guided by the 4D model, which includes the stages of Define, Design, Develop, and Disseminate. Through careful validation and trials, the worksheet was found to meet both validity and practicality criteria. The results demonstrated that the worksheet is not only in alignment with curriculum standards but also provides students with meaningful, real-world contexts that enhance their problem-solving abilities in mathematics.

This research highlights the importance of using a contextual approach in teaching, as it effectively helps students to connect abstract mathematical concepts with everyday life, ultimately leading to a deeper understanding and better retention of knowledge. The worksheet's design also encourages active student participation, offering opportunities for critical thinking, reflection, and independent learning.

Future researchers are encouraged to build on this work by developing similar student worksheets for other mathematical topics or exploring the application of different instructional models and approaches, such as inquiry-based learning or

https://doi.org/10.30606/absis.v7i1.2625

project-based learning. There is a need for further research to extend beyond the large-group trial phase to assess the long-term impact and effectiveness of the developed worksheets. Specifically, future studies could focus on measuring whether the use of these worksheets significantly improves students' mathematical problem-solving skills over a more extended period and whether these improvements persist across different topics and learning contexts.

Additionally, future studies might explore how the worksheets can be adapted for diverse classroom environments, including those with varying levels of student ability. This could provide valuable insights into how such teaching tools can be scaled or modified to maximize their impact on a broader range of learners. Ultimately, with further testing and refinement, these contextual-based worksheets could play a crucial role in improving mathematics education by fostering a more active, engaging, and student-centered learning experience.

REFERENCES

Akbar, S. (2017). *Instrumen perangkat pembelajaran*. PT Remaja Rosdakarya Offset.

Aldila, C., Abdurrahman, & Sesunan, F. (2017). Pengembangan LKPD berbasis STEM untuk menumbuhkan keterampilan berpikir kreatif peserta didik. *Jurnal Pembelajaran Fisika Universitas Lampung, 5*(4).

Anggriyani, F. C. W. (2020). Pendekatan kontekstual dalam kegiatan belajar mengajar. *Jurnal Al-Rabwah, 14*(1), 19–38.

Annisa, R., Roza, Y., & Maimunah, M. (2021). Analisis kemampuan pemecahan masalah matematis peserta didik 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

Arikunto, S. (2012). *Prosedur penelitian: Suatu pendekatan praktik*. Rineka Cipta.

Arlina, M. (2021). Pengembangan lembar kerja peserta didik (LKPD) dengan pendekatan kontekstual pada materi peluang di SMP. Universitas Muhammadiyah Sumatera Utara.

Hendriana, H., Rohaeti, E. E., & Sumarmo, U. (2017). *Hard skills dan soft skills matematik peserta didik*. Refika Aditama.

Isharyadi, R. (2018). Pengaruh penerapan pendekatan kontekstual terhadap peningkatan kemampuan pemecahan masalah matematis peserta didik. *Aksioma: Jurnal Pendidikan Matematika FKIP Univ. Muhammadiyah Metro, 7*(1), 48–55.

Jatisunda, M. G. (2016). Peningkatan kemampuan pemecahan masalah matematis peserta didik SMP melalui pembelajaran dengan pendekatan kontekstual. *Jurnal THEOREMS, 1*(1), 35–44.

Lathifah, M. F., Hidayati, B. N., & Zulandri. (2021). Efektifitas LKPD elektronik sebagai

media pembelajaran pada masa pandemi Covid-19 untuk guru di YPI Bidayatul Hidayah Ampenan. *Jurnal Pengabdian Magister Pendidikan IPA, 4*(1), 25–30. https://doi.org/10.29303/jpmpi.v3i2.668

Mukasyaf, F., Kms. M. A. F., & Mukhtar. (2019). Building learning trajectory mathematical problem-solving ability in circle tangent topic by applying metacognition approach. *International Education Studies, 12*(2), 109.

Nissa, I. C. (2015). *Pemecahan masalah matematika (teori dan contoh praktek)*. Duta Pustaka Ilmu.

Putra, S. R. (2013). *Desain belajar mengajar kreatif berbasis sains*. Diva Press.

Suraji, Maimunah, & Saragih, S. (2018). Analisis kemampuan pemahaman konsep matematis dan kemampuan pemecahan masalah matematis peserta didik SMP pada materi sistem persamaan linear dua variabel (SPLDV). *Suska Journal of Mathematics Education, 4*(1), 9–19.

Tanti, R. (2010). Kompetensi berpikir kritis dan kreatif dalam pemecahan masalah matematika di SMPN 2 Malang. *Jurnal Scientific, 1*(1), 72–86.

Thiagarajan, S., Semmel, D. S., & Semmel, M. I. (1974). *Instructional development for training teachers of exceptional children*. ERIC.

Veny, R. (2020). Pengembangan lembar kerja peserta didik (LKPD) berbasis problem-based learning untuk meningkatkan kemampuan pemecahan masalah matematis peserta didik SMP. *Undergraduate Thesis*. Universitas Muhammadiyah Sumatera Utara.

https://doi.org/10.30606/absis.v7i1.2625