THE URGENCY OF MASTERING PROBLEM SOLVING IN ISLAMIC EDUCATION: A STUDY OF CONCEPTS AND EDUCATOR FUNCTIONS

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Abstract

Problem-solving involves seeking information, analyzing situations, and identifying problems to generate alternatives so can make teacher decisions to achieve goals. This article aims to unravel the urgency of educators in mastering problem-solving in classroom learning. Using a conceptual approach, this qualitative descriptive research concludes that one of the functions of educators is to master one of the problem-solving models. One of the competencies of mastering problem solving is the ability to think critically as a tool in constructing knowledge during the learning process. With problem-solving, educators are able to produce school graduates who are proportional and thrive in the future fairly and equitably.

Keywords: Problem Solving, Islamic Education, Educator's Function, Critical Thinking

Abstrak

Problem solving merupakan suatu keterampilan yang meliputi kemampuan untuk mencari informasi, menganalisa situasi dan mengidentifikasi masalah dengan tujuan untuk menghasilkan alternatif sehingga dapat mengambil suatu tindakan keputusan untuk mencapai sasaran. Artikel ini bertujuan untuk mengurai urgensi pendidik dalam menguasai problem solving dalam pembelajaran di kelas. Dengan menggunakan pendekatan konsep, penelitian deskriptif kualitatif ini memberikan kesimpulan bahwa salah satu fungsi pendidik adalah harus mampu menguasai salah satu model problem solving. Salah satu kompetensi dari penguasaan problem solving adalah kemampuan berpikir kritis sebagai alat dalam mengkonstruksikan pengetahuan selama proses pembelajaran. Dengan problem solving maka para pendidik mampu mencetak lulusan sekolah yang proporsinal dan sukses di masa depan secara adil dan merata.

Kata kunci: Problem Solving, Pendidikan Islam, Fungsi Pendidik, Berpikik Kritis

INTRODUCTION

The problem-solving method is a method that has very urgent potential to train students to be able to think creatively and intelligently in dealing with the problems they face. Both concerning individual and group issues so that they can find solutions precisely and accurately. Students are directly involved independently to identify the causes of the problem and find alternative solutions (Anshori, 2021).

Educators here only provide cases or problems to students so that teachers can solve them critically, scientifically, and analytically. Of the phenomenon happening in society, many school graduates need clarification about finding a job market, unemployment is rampant, and corruption is growing among officials and

the people (Nasrullah, Johar, & Munzir, 2019). Juvenile delinquency is increasingly rampant, and drugs and promiscuity have become part of his life. Shortcuts are often the choice for the sake of material alone. The knowledge that has been obtained does not provide the right solution in life, so it fails to become a successful person in achieving happiness in the world and the hereafter. This is where the function of the educator must be internalized into the lives of students in real terms so that they can answer the problems of life that are increasingly complex and crucial (Sopian, 2016).

In the learning process, the teacher functions as a facilitator so that learning is not centered on the teacher but on students. To create a pleasant learning atmosphere, teachers must be able to choose suitable teaching methods so that they can make students more creative and active. The Creative Problem Solving (CPS) method can be used by teachers. This method has procedures and learning steps for solving problems by creating solutions. Students are required to be active and creative, following good learning objectives (Carmeli, Levi, & Peccei, 2021).

Problem-solving learning is designed by the teacher to challenge students through assignments or questions. The function of the teacher in this activity is to motivate students to accept challenges and guide them in solving them. The problem must be a problem whose solution is within the student's abilities. Problems beyond the reach of students' abilities can reduce their motivation. Problem-solving, in this case, the problem is defined as a problem that is not routine. The way to solve it has yet to be discovered. Precisely problem solving is looking for or finding ways to solve (finding patterns, rules, or algorithms) (Chen & Chen, 2010).

Needs and challenges in the educational process are constantly changing along with changing conditions and the current situation. For the educational process to respond the challenges of the times, an educator must change, both in terms of the way of thinking, approaches in the teaching process, and the new skills needed in the learning process (Alam, 2019). In this aspect, the Problem-Solving model is looking for or finding ways of solving. The syntax is as follows: present problems that meet the criteria above. Students in groups or individually identify the regulations or ways presented. Students determine, explore, investigate, suspect, and finally find a solution. The problem-solving model aims to think critically, analyze, and be adept at dealing with every problem (Prasad, 2021).

METHOD

This research is qualitative research with a descriptive approach. It uses literary sources that have anything to do with research problems, which are sourced from primary and secondary data. Primary data is taken from books related to problem-solving and the function of educators. This secondary source is used as additional reference material to enrich the article's contents further and as complementary material such as unpublished documents such as school archives, Indonesian national education laws, etc.

RESULTS AND DISCUSSION
Problem-Solving Education According to Experts

The problem-solving method is a way of teaching by training students to deal with various problems to be solved alone or together (Jumaeva, Inomov, & Mardonova, 2018). Problem-solving is a process of using specific strategies, methods, or techniques to deal with new situations so that teachers can overcome these conditions according to the wishes set. Another perspective, problem-solving is teaching that begins with questions that lead to concepts, principles, and laws, then proceed with problem-solving activities referred to as teaching that applies problem-solving methods (Nuryana, Nurcahyati, Rahman, Setiawan, & Fadillah, 2020).

In line, problem-solving is the process of accepting challenges and efforts to solve them until they get a solution. While teaching, problem-solving is the teacher's action in encouraging students to buy challenges from challenging questions and directing students to be able to solve these questions (Khalid et al., 2020).

Problem-solving learning is designed by the teacher to challenge students through assignments or math questions. John Dewey said that the problem-solving method presents lessons by encouraging students to look for and solve a problem to achieve teaching goals (Kulsum & Kristayulita, 2019). In the process of solving problems systematically, he identified three series of assessments involved in solving the issue of the status of controversy adequately, namely:
1. Recognize the controversy
2. Weigh alternative claims
3. Form an assessment

Problem-Solving method is carried out by directly facing the problem, knowing as clearly as possible, and finding the difficulties so that teacher can solve them. The teacher in the teaching and learning process describes that the Problem-Solving method or problem-solving method is the same as the Inquiry and Discovery method. These are two methods that are related to one another. Inquiry means investigation, while discovery is discovery. Through analysis, students can finally make a discovery (Wartono, Batlolona, & Mahfi, 2019). From the various opinions experts have conveyed, problem-solving is a learning method that activates and trains students to deal with multiple problems and find solutions. Educators doing these method by using specific strategies, procedures, or techniques to deal with new situations so that these conditions can be passed according to the wishes set. From the several definitions above regarding problem-solving methods, no contradictory information is obtained between one opinion and another. From that, it can see that the elements contained in this problem-solving method include:
1. Students in the teaching and learning process.
2. There are problems encountered that must be solved, analyzed, and concluded,
3. The students solve the problem without help from others (as much as possible).
4. Its nature is to train the ability to think for, find it, and formulate it by their selves.

Basic Principles of Problem-Solving Education

To accelerate understanding to apply practical problem-solving methods, it must attract attention as a feedback loop. However, symptoms do not fully

reveal that a problem is the cause of a problem, or the cause of an opportunity. The problem is the distance that stretches between the current situation and the goal to be achieved or a condition that has the potential to cause extraordinary losses or extraordinary profits (Simon, 1980). Problems can be classified into:

1. Structured problems consist of elements and relationships between elements that are all understood by the solver.
2. Unstructured problems contain elements or relationships between elements that are not understood by the problem solver.
3. Semi-structured problems are problems that contain some of the elements or relationships that are understood by the problem solver.

In an organization, only some problems are completely structured or unstructured. Most are semi-structured problems. Each problem contains three characteristics:

1. The initial state describes where the problem started.
2. The goal state is achieved when student solve the problem.
3. The challenge describes the restrictions that make it difficult to proceed from the initial state to the destination.

The challenge is the problem hypothesis that should follow. A fundamental principle in this method is the need for activity in learning something. The emergence of student activity if the teacher explains the benefits of learning materials for students and the community. In his book "school and society," John Dewey argues that students' activeness in schools must be meaningful, meaning activeness that is adjusted to the work that is usually done in society. The reason for using the problem-solving method for researchers is that by using it, students can work and think for themselves; thus, students will be able to remember the lesson rather than listen (Dewey, 2008).

To solve a problem, John Dewey suggests the following:

1. Raise a problem. The teacher confronts the problem to be solved by students.
2. Clarify the problem. The teacher and the students formulate the problem.
3. Seeing the possible answers of students together with the teacher looking for possibilities they will implement in solving the problem.
4. Try the possibilities that are considered profitable. The teacher determines the method of solving the problem that is considered the most appropriate.
5. Assessment of the way taken is assessed, whether it can bring the expected results.

Forms of Problem-Solving Education

One form of problem-solving education is Rational problem-solving as a form of constructive problem-solving learning defined as rational, deliberating, and systematic application in problem-solving skills (Dane, Baer, Pratt, & Oldham, 2011). This model consists of four stages, namely:

1. Identify the problem
   Problem solvers try to classify and understand the problems they face by gathering a lot of specifications and concrete facts about possible issues, identifying requests, obstacles, and realistic goals in solving problems.
2. Looking for alternative solutions

Focus on the goal of solving the problem and try to identify as many possible solutions as possible, including conventional ones.

3. Make decisions
   The problem solver anticipates the decision in different solutions, considers, compares, and then chooses the best or the most potentially effective solution.
4. Implementing solutions and proving one must be careful in accepting and evaluating.
   The solutions that are the choices after trying to implement these solutions into real- life problems.

Problem-Solving Learning Methods and Objectives

Problem-solving is a skill that includes the ability to seek information, analyze situations and identify problems to generate alternatives so that teachers can make decisions to achieve goals. Related to the notion of problem-solving earlier, if it is associated with learning, it has an understanding as a process of learning approach that requires students to solve problems, where the educators themselves can make up the problems that teacher must solve, and there are times when the real facts that exist in the environment are then solved in-class learning., in various ways and techniques (Maulyda, Hidayati, Rosyidah, & Nurmawanti, 2019).

Several tools are needed to implement problem-solving learning, such as software, which links teaching methods. Each teacher's education cannot be separated from the role of the method. However, not all methods that teachers use can produce sound output. And guiding children towards problem-solving, not all methods can be used as a problem- solving process. At least these methods have value. This method will increase student activity. Student activity in learning provides opportunities for students to explore their knowledge to solve problems and build the concepts they will learn. This entire learning experience will provide students with skills in learning, which can become a provision for lifelong learners. And solve problems in the learning process (Lutfauziah, Al- Muhdhar, Suhadi, & Rohman, 2020). In addition, another aspect is creativity. With the creativity of a student, both individually and in groups, required to produce discoveries as a manifestation of problem- solving, there are still few creative people. Student creativity can deliver critical thinking in solving problems, and of course, each method must be supported by certain facilities that can lead to achieving goals. Second, hardware related to learning techniques. Learning techniques are paths, tools, or media teachers use to educate their students to achieve learning goals. The application or application of educational technology in an effort to solve academic and learning problems requires at least the availability of the following:

1. Technological or infrastructure support
2. Mastery of knowledge and skills in developing content
3. Readiness of students or users

Meanwhile, solving learning problems can be done in various ways with strategies and procedures. Application of educational technology in an effort to solve educational and learning problems by: 1) combining various approaches from the fields of economics, management, psychology, engineering, and others in

a systematic manner, 2) solving learning problems in humans as a whole and simultaneously, by paying attention to and studying all conditions and the interrelationships between them, 3) using technology as a process and product to help solve learning problems, and finally 4) the emergence of folding power or synergy effects, where the combination of approaches and or elements has more value than just summation (Hendarwati, Nurlaela, Bachri, & Sa'ida, 2021). Likewise, solving as a whole and simultaneously will have more value than solving the problem separately.

The teacher can apply the application of educational technology in Computer Assisted Learning (CAL) learning (Wali & Ahmad, 2021). This technique is used for structured learning activities, where the computer is programmed for problems (expert systems). Students are asked to solve the problem or look for answers by using a laptop, and immediately, student answers are processed electronically. In a few seconds, students have received responses or feedback on these answers. CAL gives students to progress at their own pace. The teacher can use this method at any level of knowledge, from the simple to the most complex.

The benefits of using problem-solving methods in teaching and learning are to develop more exciting knowledge. Problem-solving techniques provide several benefits, among others.
a. Developing students' skill attitudes in solving problems, as well as in making decisions objectively and independently.
b. Develop students' thinking skills, the assumption that thinking skills will be born if knowledge increases.
c. Through inquiry or problem-solving, the ability to think is processed in situations or circumstances that are truly internalized, of interest to students, and in various alternatives.
d. Fostering the development of an attitude of feeling (want to know more) and an objective way of thinking - independently, crisis - analysis both individually and in groups.

The purpose of the problem-solving learning model is that students are expected to be able to think critically, analyze, and be adept at dealing with every issue. In addition, students become skilled at selecting relevant information, studying it, and finally re- examining the results. And more importantly, students learn how to make discoveries by going through the process of making discoveries.

In this model the teacher acts as an information provider, the child as an appreciator, able to participate in the information provided by the teacher. The problem- solving model is used to work on materials or learning materials that are approaches to social interaction. This model is very appropriate for learning to write argumentative paragraphs.

Problem-Solving Learning Model

A form of constructive problem-solving learning is the rational, deliberative, and systematic application of problem-solving abilities (Kandiri & Puadi, 2021; Khalifaturohma & Mufida, 2020). This model consists of five stages, namely:
a. Identification of problems

Problem solvers try to classify and understand the problems they face by gathering a lot of specifications and concrete facts about possible issues, identifying requests, obstacles, and realistic goals in solving problems.
b. Looking for Alternative Solutions.
c. Focus on the goal of solving the problem and identify as many possible solutions as possible, including conventional ones.
d. Make decisions.
The problem solver anticipates the decision in different solutions, considers, compares, and then chooses the best or the most potentially effective solution.
e. Implementing solutions and proving one must be careful in accepting and evaluating the solutions that are the choice after trying to implement these solutions into real-life problems.

Procedure Using Model Problem Solving
a. Pre-instructional activities.
    Pre-instructional activities are intended to condition learning readiness and motivate student learning.
b. Instructional Activities
        In instructional activities, take the following steps:
        1. The teacher prepares materials for students to identify the problem.
        2. Students join in one group, one group consisting of 5-6 people.
        3. Each group then discusses problem-solving based on the answers that each student has prepared.
        4. Each group must present or read the results of their discussion in front of the class to be responded to by other groups or students.
        5. After all students have finished reading or presenting the results of their discussions, students conclude the answers to the problem-solving.
        6. Evaluation.

    At this stage it is considered suitable to be applied with the aim of further increasing the ethos and enthusiasm of students in the learning process, namely by providing an explanation from the educator regarding deficiencies in the teaching- learning process, as well as providing suggestions on how to improve or complete deficiencies. Furthermore, the teacher checks the results of student work and provides an assessment (Anderson & Fincham, 2014).

Strengths and Weaknesses of Problem-Solving Learning
    One of the learning objectives is to create student products that have cognitive and affective skills and are also required to be proficient in developing psychomotor skills. This goal is not from the process of solving problems; solving these problems must present methods. And the proper method is the problem-solving method, which emphasizes critical and creative thinking to achieve goals. Still, the technique is not free from advantages and disadvantages (Ghufron & Ermawati, 2018).

Advantages of Problem-Solving Learning

    a. Train students to design an invention.
    b. Think and act creatively.
    c. Solve the problems encountered realistically. Identify and conduct investigations.
    d. Interpret and evaluate the results of observations.
    e. Stimulate the development of students' thinking progress to solve the problems they face appropriately.
    f. Can make school education more relevant to life, especially the world of work.

Weaknesses in learning problem-solving
a. Some subjects require more work to apply this Learning. For example, limited laboratory equipment makes it difficult for students to see and observe and finally be able to conclude the event or concept.
b. Requires a more extended time allocation compared to other learning methods
c. Program development requires high costs and a long time.
d. Procurement and maintenance of equipment are expensive.

Correlation between educator function and problem-solving
Problem-solving is a skill that includes the ability to seek information, analyze situations and identify problems to generate alternatives so that they can make decisions to achieve goals. Related to the notion of problem-solving earlier, if it is associated with learning, it has an understanding as a process of learning approach that requires students to solve problems, where the educators themselves can make the problems that the teacher must solve, and there are times when the actual facts that exist in the environment are then solved in-class learning, with various methods and techniques (Mahmud, Sugiyono & Fitriyana, 2020).

Needs and challenges in the educational process are constantly changing along with changing conditions and the current situation. For the educational process to be able to respond to the challenges of the times, it is acknowledged or not that teachers must change, both in terms of ways of thinking, approaches in the teaching process, and new skills needed in the learning process. The Problem-Solving Model aims to be able to think critically, analyze, and be adept at dealing with every problem. Problem-solving learning is designed by the teacher to challenge students through assignments or questions. The function of the teacher in this activity is to motivate students to accept challenges and guide them in solving them. The problem must be a problem whose solution is within the student's abilities. Issues beyond the reach of students' abilities can reduce their motivation (Azizi Abarghoui, Ketabi, & Shahrokhi, 2021).

Problem-solving here can be defined as a problem that is not routine. The way to solve it has yet to be discovered. Precisely problem solving is looking for or finding ways to solve (finding patterns, rules, or algorithms). The problem-solving learning method has procedures and learning steps for solving problems by creating solutions. Students are required to be active and creative, following the learning objectives set by each school. Problem-solving learning is designed by the teacher to challenge students through assignments or questions. The function of the teacher in this activity is to motivate students to accept

challenges and guide them in solving them. The problem must be a problem whose solution is within the student's abilities. Issues beyond the reach of students' abilities can reduce their motivation (Nasrullah et al., 2019).

The Urgency of Problem-Solving Education

Law No. 20/2003 concerning the National Education System clearly outlines. "National education functions to develop capabilities and form dignified national character and civilization in the framework of educating the nation's life."

But it must be admitted that there is still a gap between the high expectations of the government and society for the world of education from the reality on the ground, including not being able to produce human resources who have the skills to think critically (critical thinking) and the ability to solve problems (problem-solving). It must be admitted that several aspects of education in this country are progressing rapidly. Critical thinking is needed to deal with this modern world where all information is presented instantly (Kholid, Sa'Dijah, Hidayanto, & Permadi, 2022).

Critical thinking is increasingly seen as necessary in line with the rapid development of science and technology. Every time teachers are required to think critically, not take things for granted, and must look for reasons and evidence that support their teaching process (Seibert, 2021). The student should also include critical thinking in the school curriculum. Students from primary education should be taught critical thinking. With critical thinking, students will be more brilliant because of the ongoing interaction process. They discuss and debate what they believe is true.

Critical thinking has become one of the competencies of educational goals, and as a tool in constructing knowledge while studying, critical thinking can help students improve their understanding of the material being studied by critically evaluating arguments in textbooks, journals, and discussion partners, including teacher arguments in learning. Technological and economic changes are the two leading causes of rapid changes in social life. There are two things that underlie the importance of critical thinking processes for students to master, namely, 1) in line with the development of science and technology, the information that students receive will be more varied, both the source and the essence of the data. This has the consequence that students are required to have the ability to "choose and sort" good and correct information so that it can be accepted to enrich the treasures of their thoughts, 2) students are one of the forces that have high power (people power), therefore for that power to be directed in the right direction, they need to be equipped with adequate thinking skills (deductive, inductive, reflective, critical and creative) so that one day they can take part in developing their field of knowledge (Sari, Sumarmi, Astina, Utomo, & Ridhwan, 2021).

A pile of government expectations for teachers so that students have the skills to think critically (critical thinking), of course, to begin practicing in the learning process in the form of:

a. Debates and arguments among students are getting more exciting.
b. Students try hard to master the problems, information, and knowledge that arises.
c. Students are increasingly varied in expressing opinions.

d. Participation in talks is getting more active.
e. In issuing opinions, invite other opinions.
f. There is a process of controlling questions that are relevant and in a logical sequence.
g. Always ask questions for elaboration so that information has a clear direction.
h. There is an attempt to connect what is being discussed with the reality of existing life.
i. Students listen to questions or opinions more seriously.
j. Students express opinions freely and responsibly.
k. Discussion processes that are specific to be discussed towards matters of a general nature.
l. There are questions for clarification so that something is more clearly understood together.

Regarding the above, the government hopes to prepare quality human resources through a program to equip students with critical thinking skills and problem-solving abilities to be realized because these are all essential components in efforts to improve the national education system improve the nation's intelligence. Critical thinking skills can be developed through learning activities, including several things, including making decisions and solving problems wisely. Apply knowledge, experience, and thinking skills more practically inside and outside of school. Produce creative and innovative ideas or creations. Overcoming rushed blurry and narrow ways of thinking. Improve cognitive and affective aspects and be open in receiving and giving opinions. Make judgments based on reasons and evidence and dare to provide views and criticism.

The knowledge, technology, and information that students receive will be more varied, both the source and the essence of the information. Students are citizens of society who now and in the future will live an increasingly complex life, and every time the teacher is faced with making a decision, whether he wants it or not, intentionally or not, sought or not, will require the ability to think critically. These are some fundamental reasons why concepts, abilities, and skills for critical thinking need to be developed in students.

Implementation of Problem-Solving Education

To realize the ideals of the independence of the Indonesian nation as mandated in the preamble to the 1945 Constitution of the Republic of Indonesia, namely, to educate the nation's life, improving the quality of education is a top priority in national development. To improve the quality of education in Indonesia, the government always revises the existing curriculum in line with the times, as well as the learning model that is applied which always experiences changes. The strategy in learning is one of the renewal efforts in the field of education to achieve the expected educational goals. Relevant learning strategies it is expected to bring students to achieve their desired educational goals through learning. This will require the teacher to be able to convey learning material precisely and adequately (Satriani & Wahyuddin, 2019).

Teachers must create a conducive and pleasant learning atmosphere or climate in the learning process, motivating students to study well and with enthusiasm. As is known that the teaching method is an interaction suggestion

that teachers toward students in the process of teaching and learning activities use. Therefore, the teacher must pay attention to the teaching methods they will use in learning and must follow the objectives, types, and nature of learning materials with the teacher's ability to understand and implement these methods. Education is an integral part of the development and progress of a nation. The declaration of nine-year compulsory education is one of the government's efforts to advance the Indonesian nation, which is far behind other countries. Law no. 20 of 2003 concerning the National Education System reads:

> "*Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, society, nation and country.*"

The government is currently promoting efforts to improve the quality of Human Resources (HR). The most crucial step is done, namely with education (Zaini, 2021). This is because education is one of the goals of development programs in Indonesia that all levels of society must pursue. The 1945 Constitution emphasizes that "every citizen has the right to education". The teaching and learning process, in general, rarely uses learning media. Such a teaching and learning process will make students bored. Delivering material conventionally, for example, lectures will make students bored, resulting in decreased learning motivation and achievement. In this case, the role of learning media is very important, because learning media as a source of learning that can convey messages can help overcome this. The use of learning media can enhance the process and results of teaching is related to the level of students' thinking.

Mathematics is taught at every level of schooling in Indonesia, from Elementary School (SD) to High School (SMA) and even at the University level. Because education is essential to determine a nation's progress, producing human resources as subjects in good development, capital is needed from the results of education itself. Especially for mathematics, besides having an abstract nature, a good understanding of concepts is fundamental because understanding new concepts requires understanding previous concepts. In classroom learning, there is a close relationship between teachers, students, curriculum, facilities, and infrastructure. In mathematics, for instance, teachers and students are increasingly required to have high and creative thinking skills and honest and independent personalities, so it is essential and carries out mathematics learning that can improve student learning achievement and can educate students so that they can grow into human beings who think creatively and independently (Barham, 2020).

One of the learning media is visual aids. Visual aids in teaching and learning are used to help teachers make the student learning process more effective and efficient. Each learning process is characterized by several elements, including objectives, materials, methods, tools, and evaluation. Elements of methods and tools are elements that they cannot separate from other elements that function as ways or techniques to deliver learning material to reach the goal. Students' thinking process allows them to deal with very diverse problems more effectively, but they still need to function more efficiently in the abstract field. In this case, the

role of teaching aids or props is significant because, with these props, the material can be easily understood by students (Haryoko, 2010).

CONCLUSION

One of the competencies of mastering problem solving is the ability to think critically as a tool in constructing knowledge during the learning process. Problem- solving in learning plays a significant role. Because by knowing how to solve the problem, knowledge will be much more profound and not easy to forget. The impact is almost the same as contextual learning because, in the end, problems are everyday things that students will encounter. Problem-solving is an important skill needed in the 21st century. The problem-solving model requires students to play an active role and be able to think. Students must also be able to analyze material, from searching for data to concluding. The problem-solving learning model is a model that focuses learning on problem-solving so that students can strengthen their reasoning power by developing new ways, strategies, or techniques to solve a problem.

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