



# Improving Critical Thinking Skills in Thematic Learning with the Help of Problem Learning Models

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**Abstract:** The low thinking ability of primary school students today is explained by the fact that teachers tend to use teaching models that are monotonous, boring and teacher-centered. Therefore, it is necessary to apply a model that will promote proper learning and stimulate the active role of students' critical thinking related to thematic learning. One of the correct models of learning is problem-based learning. Referring to this statement, the researcher is interested. Conduct a literature review to increase efforts. Critical thinking skills use a problem-based learning model. Thematic training. The results of this study indicate that the problem-based learning model can be effectively used in thematic educational activities. This model of problem-based learning can improve the process. By studying the nuances of life in the classroom, students will be activated and able to think critically and analytically improve students' thinking skills in thematic learning.

**Keywords:** Critical thinking skills; Problem-based learning; Subject matter

## Introduction

In essence, learning is an active process, where there is interaction between education, students, and learning resources. The statement shows that there is a directed communication process to get to the goal or target predetermined learning (Pane & Dasopang, 2017). Learning takes place as a process that influences each other between teachers and students in learning activities teach. Learning can be said to be able to improve critical skills if students are actively involved, both physically and mentally and socially in the learning process. The axis of all science is thinking. Students can understand the content of all subjects and apply it in everyday life if the student use good thinking skills. Soemanto argues that Thinking is connecting parts of knowledge in the form of ideas, concepts, and definition that has been owned by humans. Palto added that thinking is an activity ideational and neither motor nor sensory activity, although it can have both (Widyaningrum, 2012; Damayanti, 2018; Amir et al., 2020).

Critical thinking is basically an active process, which one is asking questions, thinking deeply about things, discovering relevant information and not passively waiting for information to arrive (Fisher, 2009). Critical thinking is a process where all skills and knowledge are used in solving problems that arise, analyzing all assumptions that arise exist, make decisions, and conduct research or investigations based on information and data that has been obtained so as to produce conclusions or information that is needed (Izzaty, 2006; Lismaya, 2019). Based on this, the teacher's efforts to improve Students' critical thinking skills are very important, because students' critical thinking skills become a determinant for student's success of the learning carried out (Nasrullah et al., 2018; Suyanta, 2020).

As the data that has been obtained from previous researchers that there is some of the school institutions have low critical skills, especially in thematic learning. The low critical thinking skills of these students are due teachers who have not used the learning model as well as the implementation plan design learning that is adapted to the characteristics of the material or the

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situation and conditions of students so that it can enable students to be active, creative and think critically, but, conversely, the tendency of teachers to use teaching models that are monotonous, boring, and teacher-centered. Thus, it is necessary to apply the model of appropriate learning to strengthen and stimulate the active role of students for the purpose of critical thinking for thematic learning (Monica et al., 2018; Febriani & Rahmatina, 2020; Dari & Taufik, 2020; Yosepina, 2020).

Based on the reality that happened in the school, it is necessary to apply appropriate learning models to strengthen and stimulate the active role of students so that they can think critically about thematic learning. A teacher, as a teacher or facilitator, should be able to make students active, think critically, and have fun in order to improve students' ability to think actively and achieve learning goals. One of the learning models that is appropriate to apply based on these problems is the application of the problem-based learning model.

## Method

This study is a literature review that examines several journal articles and books related to problem-based learning. The results of these various literature reviews will: be used to identify efforts to improve students' critical thinking skills through a problem-based learning model in thematic subjects. The research method used is the literature review method, or literature review. A literature review is a description or description of the literature that is relevant to a particular field or topic (Ridwan et al., 2021).

The technique for collecting data in this article review is collecting research data indirectly in the form of secondary data from existing research (Emzir, 2019). The method of data analysis used in this literature review is by analyzing the collected theoretical content. This analysis was carried out by 1) looking for similarities and dissimilarities, 2) giving opinions, 3) comparing, and 4) giving a summary. The steps taken in the literature review are: 1) determining the topic and formulating the problem, 2) searching for literature material, 3) analyzing the results of the literature obtained, and 4) writing a literature review of the material that has been obtained (Novelni & Sukma, 2021).

## Result and Discussion

Some definitions of critical thinking according to experts, as follows: Kurfiss et al. (1988) Critical thinking is an assessment with the aim of examining a situation, phenomenon, question, or problem to obtain a hypothesis or conclusion that integrates all available

information so that it can be justified with confidence. Thinking is an activity of the human person that results in discovery directed towards a goal. Humans think to find the understanding or understanding they want. Critical thinking is the activity of analyzing ideas or ideas in a more specific direction, distinguishing them sharply, selecting, identifying, studying and developing them in a more perfect direction. Critical thinking means mental processes that are effective and reliable, used in pursuing relevant and correct knowledge about the world. Critical thinking is active, persistent and careful consideration of a belief or any form of knowledge that is received in view of the various reasons that support and conclude.

The definition of critical thinking is a person's ability to analyze problems and ideas or ideas, in a more specific direction to find solutions according to reason and knowledge possessed.

### *Definition of Problem Based Learning Model*

Problem Based Learning can be interpreted as a series of learning activities which emphasizes the state of the process of solving problems encountered scientifically. Problem Based Learning model is learning that focuses on students as learning students as learning as well as to the authentic or relevant problem to be solved with using all the knowledge he has or from other sources (Saleh, 2013; Hotimah, 2020). There are 3 main characteristics of the learning model: First, Problem Based Learning is sequence of learning activities, meaning that in its implementation there are a number of activities what students have to do. The hope is that students do not just listen, take notes, and memorizing lessons, but students can think critically, communicate, seek, and manage data and draw conclusions. Second, learning activities are directed to solve the problem. In the Problem Based Learning model, problem placed as keywords of the learning process. Third, problem solving carried out using a scientific approach to thinking. Think with Using the scientific method is a process of deductive and inductive thinking. This thinking process is done systematically and empirically. In implementing Problem Based Learning, teachers need to choose learning materials that have the same problems can be solved. These problems can be taken from textbooks or from other sources. Other sources such as from events. Viewed from the context of improving the quality of education, then Problem Based Learning is an appropriate learning model used to repair systems that occur in the surrounding environment, from events in family or social events.

The characteristics of Problem Based Learning: learning are implementing learning contextual, the problems presented can motivate students to learn, integrity learning is motivated learning with no

problems limited, students are actively involved in learning, collaborative work, participants students have various skills, experiences, and various concepts. Learning problem-based developed primarily to help students develop thinking skills, problem solving, and intellectual skills, learning about various adult roles by engaging in real experiences or simulation, and become autonomous and independent learning. Problem Based Learning often conducted in a team learning environment with an emphasis on activities build knowledge and skills related to decision making consensus decisions, dialogue and discussion, teamwork, conflict management, as well team leadership. Problem Based Learning is a learning approach that uses real-world problems as a context for students to learn about critical thinking and problem solving skills, as well as to acquire essential knowledge and concepts of learning materials.

#### *Application of Problem Based Learning Models in Thematic Learning*

One effort to improve the quality of learning is by applying the Problem Based Learning model is a learning model which motivates students to think and learn actively (Pamungkas et al., 2018). The application of this model is by the principle of implementation of learning that emphasizes the ability to think critically. By emphasizing students' thinking abilities, in the learning process, students are required solve the problems discussed in Thematic learning by digging information as much as possible, then analyzed and sought solutions. Solution doesn't have to be one answer, it means students are also required to learn creatively and independently especially in exploring and solving a problem. Students are expected to be individuals who have broad insight and are able to see the relationship between learning and aspects existing in the environment. According to barrows Problem Based Learning is a model learning based on the principle that problems can be used as a starting point to acquire or integrate new knowledge. Develop students' critical thinking skills will increase along with the model learning that is used, therefore learning must empower abilities critical thinking. Learning by applying the Problem Based Learning model trains students to discuss, formulate problems, develop hypotheses, conducting investigations, presenting results, and concluding the issues raised given or learned. Work activities in peer groups will be a vehicle for students to actualize their potential in improving thinking skills critical students.

The application of the Problem Based Learning model is suitable for application in learning process in the classroom to improve students' critical thinking skills and can streamline learning time. This learning

model uses problems real dunia as a context for students to learn about critical and skilled ways of thinking in solving problems, as well as to gain essential conceptual knowledge from learning material. In Thematic learning this is defined as learning that connects various concepts, ideas, attitudes, and values. Learning This thematic emphasizes choosing a specific theme according to the material lesson, to teach one or several concepts by integrating various information, with a lot of material in one theme that becomes one of the obstacles for teachers in conveying because of time constraints. To complete these problems so that students can streamline their learning time to teachers able to convey all the scope of subject matter. Learning objectives can achieved properly, it is necessary to use the right learning model, one of which is using the Problem Based Learning model. Benefits of learning models very profitable in delivering messages to students. The advantages owned by the Problem Based Learning model can overcome limitations space and time, limitations of human senses, differences in learning styles, and characteristics student. Especially in thematic learning materials which are very integrated between materials other subjects in one theme.

Learning Problem Based Learning is applied by giving topics authentic problems by the teacher so that it is clear that students are required to be active in order to be able to solve a problem, the problem will become a material discussion in the learning process. Students must be able to formulate and complete these problems through various sources of reference not only from teachers just. The teacher only acts as a facilitator who guides the discussion so that it focuses on the heart of a problem. This kind of learning model will require students to think critical. Critical thinking is reasoned and reflective thinking with an emphasis on making decisions about what to believe or do. Ability Thinking is determined by several factors, especially the structure of one's thinking. This critical thinking ability is really needed by students because of every opportunity they have will solve and get a problem, both related to the field scientific and social fields.

#### *Stages of Application of the Problem Based Learning Model*

There are five main steps in applying the Problem Based learning model Learning begins by introducing students to problem situations and ends with the presentation and analysis of student work. The first step is Orientation to the problem, that is the teacher explains the learning objectives, explains the logistics needed, motivating students to be seen in problem-solving activities that are chosen. Second step is organizing students for learning. In this step, teacher helps students define and organize learning tasks related to the problem.

Third step is guiding individual and group investigations, that are the teacher encourages students to gather appropriate information, carry out experiments to obtain explanation and problem solving. The fourth step is developing and presenting work, which is the teacher, helps students plan and prepare appropriate work, for example reports, videos, and models help with various tasks with his friends. The fifth step is analyze and evaluate the problem-solving process, which the teacher helps students reflect on or evaluate the investigations and the processes they carry out use it by asking the group to present their work.

In short, Problem Based Learning activities begin with student activity to solve real problems that are

determined or agreed upon. Process solving these problems has implications for the formation of students' skills in solve problems and think critically and at the same time form new knowledge. The stages of the Problem Based Learning model are carried out sequentially systematic potential can develop students' ability to complete problems, developing students' critical thinking skills and mastering them knowledge in accordance with certain basic competencies.

Implementation of the Problem Based Learning Model based on Permendiknas No. 41 of 2007 concerning Process Standards.

**Table 1.** Syntax Problem Based Learning

PBL syntax	Steps in Process Standards	Teacher Activities
Student orientation on the problem	Introduction	Delivering apperceptions, conducting class orientation by conveying learning objectives and learning activities to be carried out, conditioning students in the class into several groups, motivating students by providing video shows which serve as problems to be studied.
Organizing students to study	Exploration	Guiding students in groups to design learning activities to solve problems that have been oriented at an early stage.
Assist group investigations	Elaboration	Accompany students in gathering appropriate information to find explanations and solutions to problems that must be resolved.
Develop and present the work	Elaboration	Accompanying students in making reports on the results of discussions with groups, visiting reports on the results of other groups' discussions, observing and asking questions that were not yet known and responded to by the group concerned.
Analyze and evaluate the problem solving process	Confirmation	Accompanying students through question and answer discussing problem solving, making conclusions.

*Implementation of Problem Based Learning (PBL) in Learning*

The application of this model begins with a problem that must be solved. These problems can be obtained, from teachers and from students. The teacher will direct students to these problems, in other words, students will learn theory and problem solving methods which will be the center of their attention (Sofyan & Komariah, 2016; Stefani & Abidin, 2019).

Problem solving in Problem Based Learning must be in accordance with the steps in the scientific method so that students can learn to solve problems in a systematic and planned manner. Then Problem Based Learning can provide learning experiences to carry out scientific frameworks and students can solve real problems that exist in the student environment (Siswanto, 2018).

Problem-Based Learning model is designed by displaying problems that require students to explore their knowledge in order to gain new knowledge from their own findings so that students become accustomed and proficient in solving a problem that often occurs in everyday life (Saputra, 2020). So in learning, special media is needed so that students can think critically and

analytically so that active learning conditions will be created. One of them is by using video so students don't get bored in learning. The teacher gives problems to students by showing videos and students are guided to find solutions to problems to gain new knowledge from their own findings (Wirata, 2019).

*Previous Research Data*

The research was conducted by Ardyanto et al. (2018) showed that formulation of the problem how to improve critical thinking skills and student learning outcomes in thematic learning is by applying the Problem Based Learning. This study uses a class action research method, with data collection techniques according to the results of observations and student learning outcomes. The results of this study indicate that the application of the problem based model learning can improve critical thinking skills and student learning outcomes. Level critical thinking skills in the sufficient category with an average in cycle I was 2.71, increased in cycle II to 2.98. Skills mastery of student learning outcomes in pre-cycle was 19%, cycle I increased to 50%, and experienced again increase in cycle II to 78%.

Other research was conducted by Annisa (2022) which said the formulation of the problem is the application of the learning model Problem Based Learning has an effect on students' critical thinking skills in thematic learning in class IV students of Al-Ulum Private Elementary School Medan. This research in taking samples in this study using simple random sampling, with research instruments using test sheets. The results of this study indicate that the application of the learning model is a problem based learning has an effect on students' critical thinking abilities, because of the results t test analysis (independent t-test) obtained a significance value (sig.2-tailed)  $0.0 < 0.05$  then  $H_0$  is accepted and  $H_0$  is rejected. That is, there is influence on the application of the model learning Problem based learning in class IV private elementary school thematic learning Medan alumni.

Another research was conducted by Endrawati (2016) UNPAS student with title "Application of Problem Based Learning Models to Improve Critical Thinking Ability and Learning Outcomes of Grade IV Public Elementary School Students Tilil Bandung on the Sub Theme of My Nation's Cultural Diversity. Formulation of the problem how to improve critical thinking skills so that students are active reluctantly apply the Problem Based Learning model to the diversity sub-theme the culture of my nation, fourth grade students at SDN Tilil Bandung. This research uses classroom action research method. The results of this study indicate that by applying the learning model Problem Based Learning to improve critical thinking skills and student learning outcomes in subtheme learning of the cultural diversity of my nation increases, this is evidenced by the increase in the overall percentage value of critical thinking skills and student learning outcomes in each cycle. In cycle I the overall percentage was 48%, cycle II was 68%, and cycle III was 80% with the category of critical thinking. Whereas in the category of student learning outcomes in cycle I product cognitive cycle by 36%, cognitive process 60%, affective 47%, and psychomotor 53.58%, product cognitive cycle II by 72%, cognitive process 88%, affective by 68, 33%, psychomotor 72.6% and in cycle III product cognitive 92% and cognitive process 100% affective 90%, psychomotor (discussion skills) 89.91% and discussion skills 76%.

## Conclusion

Based on the explanation and previous research that has been described by the author, it can be concluded that the problem-based learning model can be effective to be applied in thematic learning. It aims to improve students' critical thinking skills. Learning with

learning models Problem Based Learning is implemented in a fun and interesting way so that students can actively think in the learning process. In addition, the learning model this is able to provide opportunities for students to be able to think and be able solve problems that exist in thematic learning. Students are trained to think critical in solving problems. The training is expected that students can improve critical thinking skills and develop self-confidence. On the other hand teachers can minimize time in the delivery of learning as a whole. With this Problem Based Learning model, you can awaken an active and lively nuance in the classroom. Students are able to think critically in problem solving so as to improve critical thinking skills students in thematic learning. Thus, the learning model Problem Based Learning is also expected to continue to be able to build and improve patterns of thinking students' critical thinking in Thematic learning so as to create deep scientists Solve problems by thinking critically

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### Author Contributions

In articles about problem based learning (PBL), the author has an important role in presenting information, analysis, and in-depth understanding of this learning method. Contribution from Reka Yulianti, Concept Explanation and selection of case studies to provide a clear definition and explanation of problem-based learning. Explains the basic concept of PBL, the principles that underlie it, as well as its goals and benefits in the educational context. Authors can play a role in selecting and developing relevant and interesting case studies. These case studies must consider real-world contexts that enable students to apply their knowledge and skills in solving complex problems. Contributions from Evi Damayanti, PBL Process Analysis and as role teachers can explain how students are introduced to problems, how they work in groups to analyze and formulate solutions, and how they present their work. Can discuss how teachers function as facilitators and mentors, assist students in developing problem-solving skills, and provide constructive feedback. Contribution from Mar'atun Najiah as Evaluation and Assessment then seeks literature review, can explain how assessment is carried out based on student work processes and products, and how this assessment can encourage reflection and self-development can analyze the benefits and challenges of PBL in the learning context. They can discuss the advantages of this method, such as developing collaboration skills, problem solving, and critical thinking skills. In addition, writers must also be aware of and overcome challenges that may arise, such as time management, subjective judgment, and the need for adequate resources. Can provide a comprehensive literature review on PBL. Lukman Nulhakim as a Lecturer who recommends practical advice for teachers and educational institutions who wish to implement PBL.

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This research received no external funding.

### Conflicts of Interest

We, as the authors of this article, would like to express that we are team members who are actively involved in the development of the PBL method in our school. We have an important role to play in designing and implementing the PBL approach in our learning environment. In addition, we are also a faculty member at this educational institution, which has implemented PBL as one of our widely applied learning approaches. Our involvement in PBL learning at this institution may influence my perspective and interpretation of the method. We want to emphasize that even though we have direct involvement in this PBL project, we are committed to presenting information with a balanced objectivity and criticism. We recognize that PBL has both benefits and challenges that need careful attention, and I will endeavor to convey information with transparency and integrity. In addition, this PBL project has financial support from our only group who are dedicated to advancing innovative learning methods. Although this financial support exists, we ensure that it will not affect the independence and objectivity in writing this article. I disclose this conflict of interest in the hope that it preserves the integrity of the article and helps readers to read with a better understanding of the context and my involvement in PBL learning. We are committed to providing

accurate and balanced information, and we stand ready to answer questions or provide further clarification if needed.

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