

Application of the Self Organized Learning Environments Model to Improve Critical Thinking Skills of Grade VI Elementary School Students

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Abstract. This study was motivated by the low level of students' critical thinking skills in the learning process. This is based on the findings when researchers made observations, where during learning activities students were unable to provide a simple explanation of the material being studied, unable to conclude, unable to provide an explanation of the material being studied, and unable to identify assumptions. This is because applying a learning model is less able to develop students' critical thinking skills. This study aims to determine and get an overview of the improvement of critical thinking skills of grade VI elementary school students by applying the SOLE (self-organized learning environments) learning model. The method used in this research is Classroom Action Research (PTK) model Kemmis and Mc. Taggart model. This research was conducted in grade VI elementary school, as many as two cycles. Each cycle consists of one lesson and four stages, namely, planning, implementation, observation, and reflection. The instruments used in this research are observation sheets, field notes, test question sheets, and documentation. The results of this study showed an increase in the percentage of students' critical thinking skills in cycle I by 63% with a good category, in cycle II to 82% with a very good category. From these results it can be seen that there was an increase from cycle I to cycle II by 19%. This proves that the SOLE (Self Organized Learning Environments) learning model can improve the critical thinking skills of grade VI students in one of the elementary schools.

Keywords: Critical thinking skills, elementary school, self-organized learning environments.

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INTRODUCTION

In the current era of globalization, the development of science and technology is very fast. The development of science and technology affects all aspects of human life. This era is often referred to as the 21st century. Septikasari and Frasandy (2018) revealed that every citizen is required to have the ability to answer the demands of the times in order to play a meaningful role in the era of globalization in the 21st century. According to Agustin and Pratama (2021), the 21st century is a century characterized by the rapid development of information. These rapid changes require all countries to prepare human resources to continue to exist in the 21st century. In addition, this also has an impact on the establishment of an increasingly competitive life order, so that it is necessary to develop the quality of human resources as a whole, both their abilities or skills, in order to increase strong and superior competitiveness to compete in a borderless world (Nuryani, Abidin, & Herlambang, 2019).

In this regard, efforts to improve human resources can be made in the education sector as an effort to build a new civilization in the dynamics of an increasingly advanced life. The 21st century has a wide impact on various aspects of life, including the demands in the organization of education. Education is very important and cannot be separated from human life. The 21st century is also characterized by the amount of information that is available anywhere and can be accessed at any time, computing that is getting faster, automation that replaces routine jobs, communication that can be done from anywhere and everywhere (Mardhiyah, et al, 2013). Agustin and Pratama (2021) revealed that 21st century education can be interpreted as education that explicitly and implicitly accommodates all 21st century competencies with the aim of helping people to be able to live and live in the 21st century. According to Hasibun and Prastowo (2019), the 21st century thinking pattern emphasizes students to think more critically, be able to

integrate all knowledge with real life, understand technology and information and be proficient in communicating and collaborating. In 21st century education, learning must also be oriented towards learning that can accommodate 21st century skills. 21st century skills include critical thinking and problem solving, creativity thinking and innovating, communication, and collaboration.

One of the 21st century skills that must be taught to students is critical thinking skills. Critical thinking skills are skills that must be developed for students to be able to compete in the 21st century. According to Ennis (1996) critical thinking is reflective thinking with an emphasis on making decisions about what to believe or do. Critical thinking skills are also defined as an intellectual process in conceptualizing, applying, analyzing, synthesizing, and or evaluating various information obtained from observation, experience, reflection, where the results of this process are used as a basis when taking action (Walker, 2005). According to Faiz (2012), critical thinking is an activity that involves a person's mental domain with the aim of assessing the validity of a statement which leads to a determination to acknowledge, oppose or doubt the authenticity of the statement. A person can be said to be able to think critically if they are able to carry out these aspects in an effort to solve a problem and can be said to think critically if they reason every newly acquired information or knowledge into several stages of activity in a sequential and structured manner.

Critical thinking skills are very important to be taught to elementary school students. This is a positive effort in developing the quality of human resources as a whole, to increase strong and superior competitiveness to compete in the 21st century. Nugraha, Suyitno, and Susilaningsih (2017), revealed that the importance of critical thinking skills to solve problems and is a key competency needed for individuals to live successfully, be responsible and able to face the challenges of the present and future. According to Sapriya (2015), the purpose of critical thinking is to test an opinion or idea. Meanwhile, Syafitri, Armanto, and Rahmadani (2021) reveal that the importance of critical thinking skills in order to be able to build the quality of thinking so as to produce good learning. Marzano (in Agustin and Pratama, 2021, p. 71) explains that the importance of critical thinking is taught, namely:

- a. Critical thinking allows a person to utilize their potential in seeing problems, solving problems, creating a solution idea, and being self-aware.
- b. Critical thinking is a universal skill and is required across professions. The ability to think clearly and rationally is required in any job. When studying various fields of knowledge and also to solve any problem, critical thinking skills can be the answer. So critical thinking skills are a valuable asset to one's career.
- c. Critical thinking is essential in the age of information and technology. One must respond quickly and effectively to changes in this technological era, thus requiring flexible intellectual skills, skills to analyze information, and integrate various sources of knowledge to solve problems. These skills are found in critical thinking skills.
- d. Critical thinking improves verbal and analytical skills. Thinking clearly and systematically can improve the way ideas are expressed. These skills are useful in learning how to logically analyze text structures and improve the ability to understand a problem.
- e. Critical thinking enhances creativity. To come up with a creative solution to a problem requires not only new ideas, but they must be useful and relevant to the task to be accomplished. Critical thinking is useful for evaluating new ideas, selecting the best ones, and modifying when necessary.
- f. Critical thinking is important for self-reflection. To give life structure so that life becomes more meaningful (meaningful life), it is necessary to have the ability to seek the truth and reflect on one's own values and decisions. Critical thinking is a metathinking skill, a skill to reflect and self-evaluate the values and decisions taken, then in the context of making life more meaningful, namely making a conscious effort to internalize the results of that reflection into everyday life.

Based on the results of observations and analysis by researchers in class VI of one of the elementary schools, it shows that the low level of critical thinking skills of students in the learning process. This is because students are unable to provide a simple explanation of the material they

are learning, students have not been able to provide explanations in their own sentences, are unable to conclude the material they have learned, are unable to provide an explanation of the material they are learning, are unable to identify assumptions, and students have not been able to provide the right arguments in answering questions posed by the teacher. Noting some of the problems that arise, it appears that there are no indicators of critical thinking skills in students in the learning process. The cause of these problems is because the learning that is applied is teacher centered. The teacher only uses the lecture method and assignments, so the learning process is monotonous. In addition, the learning process does not utilize learning media that are already available at school in helping to convey learning materials. This resulted in students not being able to express their opinions either orally or in writing. It can be seen when students work on problems, they only do what they want according to the knowledge that students get. In addition to the above, another problem that arises in the class is that learning activities are more characterized by memorization, in other words, students are only told to memorize the contents of the subject matter rather than being invited to think critically to develop students' thinking power.

Seeing this, the researcher believes that to foster students' critical thinking skills by using a more innovative learning model. Teachers are required to be able to apply learning models that can develop students' thinking skills. In line with this, the solution is to apply the SOLE (Self Organized Learning Environments) learning model. According to Mitra (2013), the SOLE learning model is a learning model that can encourage curiosity in students with student-driven learning. In addition, Matovani, Istiningsih, and Khair (2022) revealed that the SOLE learning model is a learning model that is implemented by utilizing learning resources in the form of technology that is carried out independently. The SOLE learning model consists of three stages of activities that must be carried out by each learner. SOLE has stages of application in the form of question, investigation, and review. Sukmayasa, Widiastuti, and Wati (2021) revealed that the SOLE learning model has the aim of shaping the competencies (expertise) possessed by students, in this learning model, students are given extensive opportunities to develop their ideas in solving problems given by the teacher.

The SOLE (Self Organized Learning Environments) learning model is considered to be able to improve students' critical thinking skills because this learning model has advantages as revealed by Dolan, Leat, Mazzoli Smith, Mitra, & Todd (2013), that the advantages of applying the SOLE learning model for teachers are, can increase expertise in asking inquiry questions, can better understand student interest, foster curiosity in student independent learning, can expand understanding of how much students can learn on their own, and share in the discovery process of students through strengthening the learning environment. While the advantages of SOLE learning model for students are, can improve reading comprehension, attitudes, language, creativity, and problem-solving skills, develop the ability to use technology, improve skills in presentation, improve lifelong learning habits, and increase student motivation. Therefore, the researcher conducted a class action research with the title "Application of the Self Organized Learning Environments Model to Improve Critical Thinking Skills of Grade VI Elementary School Students".

METHOD

The method used in this research is Classroom Action Research (PTK) model Kemmis and Mc. Taggart model. According to Kemmis and Taggart (in Muslich, 2009), classroom action research is a study conducted to improve oneself, one's own work experience, which is carried out systematically, planned, and with an introspective attitude. Meanwhile, Arikunto, Suhardjono, and Supardi (2015) revealed that classroom action research is research that describes the cause-and-effect of treatment, as well as describes what happens when treatment is given, and describes the entire process from the beginning of the treatment to the impact of the treatment.

This research was conducted in two cycles. This research used the spiral model of Kemmis and Taggart. According to Undang (2009), the spiral model of Kemmis and Taggart is a development of the basic concept introduced by Kurt Lewin which consists of four stages, namely plan, act, observe, reflect. The subjects of this study were grade VI SDN Kabandungan Kota

Sukabumi with a total of 23 students, consisting of 9 male students and 14 female students. The instruments used in this study were observation sheets made to obtain findings during the learning process, field notes used to obtain data in the form of writings during the learning process, test question sheets made by paying attention to aspects and indicators of students' critical thinking skills used to measure students' critical thinking skills, and documentation is data collection in the form of photos during the learning process.

RESULTS

In the planning stage, researchers prepare learning tools in the form of lesson plans, student worksheets, research instruments, test question sheets, and field notes. The lesson plan was made by adjusting the steps of the SOLE (Self Organized Learning Environments) learning model. The implementation of learning in cycle I is on Theme 4 (Globalization), Sub Theme 2 (Globalization and its Benefits), lesson 1.

The results of cycle I showed the results of critical thinking skills in the aspects of giving simple explanations reached 70.65%, building basic skills 66.30%, concluding reached 63.04%, providing further explanations reached 55.43%, and regulating strategies and techniques reached 59.78%. The data can be seen in the following table:

Table 1. Cycle 1 Results

No	Aspects	Results
1	Elementary Clarification	70.65%
2	Basic Support	66.30%
3	Inference	63.04%
4	Advance Clarification	55.43%
5	Model and Tactics	59.78%

After reflecting on cycle I, it is necessary to make improvements in the next cycle. In cycle II, several improvements were made such as the teacher must be able to manage the class well from the initial learning activities to the closing activities. In cycle II begins with the planning stage by preparing lesson plans, student worksheets, research instruments, test question sheets, and field notes. The lesson plan was made by adjusting the steps of the SOLE (Self Organized Learning Environments) learning model. The implementation of learning in cycle II is on Theme 4 (Globalization), Sub Theme 3 (Globalization and Love for the Country), lesson 6.

Table 2. Cycle II Results

No	Aspects	Results
1	Elementary Clarification	88.04%
2	Basic Support	84.78%
3	Inference	80.43%
4	Advance Clarification	79.35%
5	Model and Tactics	78.26%

Table 2 shows that the results of cycle II have increased from the previous cycle. The percentage of the results of critical thinking skills in the aspect of giving simple explanations increased to 88.04% with very good criteria, building basic skills reached a percentage of 84.78% with very good criteria, concluding reached an increase to 80.43% with very good criteria, providing further explanation reached 79.35% with good criteria, and regulating strategies and techniques increased to 78.26% with good criteria.

DISCUSSION

The application of the SOLE (Self Organized Learning Environments) learning model is a solution to improve students' thinking skills. By using the SOLE model in learning, it has an

influence in improving the thinking skills of grade VI elementary school students. This is known from the implementation of classroom action research conducted in two cycles.

The findings in cycle I, that in the implementation of learning there were still students who looked passive during the question and answer process and during group discussion activities and during presentation activities. In addition, there are still some students who are less able to focus and analyze questions both asked by the teacher directly and in answering questions. So that students' answers are not in accordance with the questions given. This is because the teacher does not motivate students in the learning process. Then during discussion activities to find information from the internet, there are still some students who are just silent and some students who chat and only rely on their group friends to find information assigned by the teacher. This causes students to understand less about the material they are learning, so that the results of students' answers to the questions given by the teacher are still there are students who cannot focus and analyze the questions so that the answers given are not appropriate, from the results of the answers there are still many students who cannot conclude and provide further explanation of the reading questions, and students have not been able to provide the right arguments in answering the questions in the questions. This is because the teacher is still not optimal in improving students' thinking skills, besides that the teacher is not optimal in managing the class, and still pays less attention to the time allocation so that learning activities are not in accordance with the lesson plan.

In cycle II the implementation of learning was better than the previous cycle. Teachers are able to make improvements to the learning process. Teachers are able to motivate students well, so that students can be more focused in participating in learning. This causes students to be more able to focus and analyze questions both asked by the teacher directly and in answering questions. Teachers are able to manage the class better than before, so that students are more disciplined during the learning process, because of the rules given by the teacher. Time management is much more organized and in accordance with the lesson plan. Students can be much more focused and enthusiastic when learning takes place, because the teacher can manage the class and motivate students well. Teachers are able to improve students' critical thinking skills, so that the results of students' answers to the questions given by the teacher are much better. Students are better able to focus and analyze questions well, so that many answers written by students are in accordance with the questions and readings. Students are able to provide a simple explanation of the material they are learning Students can conclude and provide further explanation of the reading questions. In addition, students are able to provide explanations about the material studied in their own sentences.

Through the application of the SOLE (Self Organized Learning Environments) learning model, students' critical thinking skills have increased in each cycle. The improvement of students' thinking skills in each cycle is shown in the following diagram.

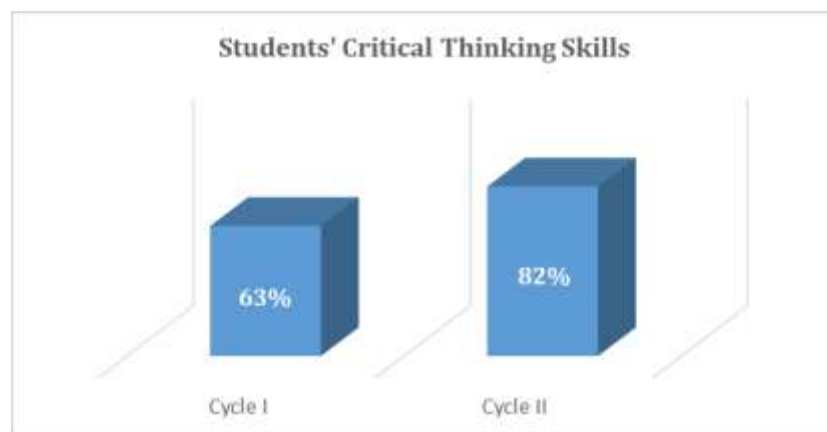


Figure 1. Student Thinking Skills in cycle I and cycle II

Based on the diagram, it can be seen that the percentage of thinking skills of grade VI students in one of the elementary schools increased from cycle I to cycle II. The results of this increase prove that the SOLE (Self Organized Learning Environments) learning model can improve the critical thinking skills of grade VI elementary school students. This is in accordance with the function of the SOLE learning model revealed by Rosidah (2020) that the SOLE learning model has the aim of forming students to have the ability to think critically, think creatively, solve problems, and communicate skills. In addition, Marlina (2021), revealed that the SOLE (Self Organized Learning Environments) learning model is student-centered learning designed to help teachers encourage curiosity in students.

CONCLUSION

Based on the results of this study, it can be concluded that the SOLE (Self Organized Learning Environments) learning model can improve the thinking skills of grade VI students in one of the elementary schools. It is evident from the increase in the percentage of students' thinking skills from cycle I to cycle II in each aspect of critical thinking skills. The elementary clarification aspect in cycle I showed 70.65% while in cycle II it became 80.04%, this shows an increase of 9.39%. The basic support aspect in cycle I showed 66.30% while in cycle II it became 84.78%, this shows an increase of 18.48%. The inference aspect in cycle I showed 63.04% while in cycle II it became 80.43%, this shows an increase of 17.39%. The aspect of advance clarification in cycle I showed 55.43% while in cycle II it became 79.35%, this shows an increase of 23.92%. The aspect of models and tactics in cycle I showed 59.78% while in cycle II it became 78.26%, this shows an increase of 18.48%.

So that the percentage of improvement in students' critical thinking skills in cycle I was 63% with a good category, in cycle II it became 82% with a very good category. From these results it can be seen that there was an increase from cycle I to cycle II of 19%. This proves that the SOLE (Self Organized Learning Environments) learning model can improve adab 21 skills, especially critical thinking skills of grade VI students in one of the elementary schools.

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