International Journal of Academic Pedagogical Research (IJAPR)
ISSN: 2643-9123
Vol. 8 Issue 12 December - 2024, Pages: 13-17

Improving Students' Critical ThinkingSkills Through Learning Strategies Kognitive

Reski Suci Utami[1] , Nurul Umamah[2]

Master of Education in Social Studies, Jember University, Jember, Indonesia

reskisuciu@gmail.com[1], nurul70@unej.ac.id[2]

Abstract: *This study aims to describe the results of research on improving students' critical thinking skills through cognitive learning strategies. The method used in this research is study literature or literature study. The results of this study are on cognitive learning strategies proven effective in improving students' critical thinking skills, the following is an explanation of the relationship between cognitive learning and students' critical thinking skills, namely: (1) In cognitive learning, students not only receive information, but also actively process, analyse, and connect the information with existing knowledge. This process developscritical thinking skills, where students are invited not to accept information raw, but to analyse it, question it, and evaluate its validity. (2) Cognitive learning encourages students to reflect on their thinking and evaluate their conclusions. This reflectionhelps students to identify the strengths and weaknesses of their thinking, which improves their critical thinking skills. By evaluatingtheir way of thinking and decision-making process, students can be wiser in facing challenges. (3) Cognitive approaches often involve active learning methods such as group discussions, case studies, and projects that involve in-depth analysis. Theseactivities can encourage students to think more critically, as they are given the opportunity to express opinions, consider multiple perspectives, and develop arguments based on evidence.*

Keywords: Critical Thinking, Cognitive Learning, Students.

1. INTRODUCTION

Jackson (2011) defines education as a process involving interaction between individuals and the environment, where knowledge, skills, values and attitudes are transferred from generation to generation. Jackson emphasises that education is not just about information transfer, but also about character building and individual development within a social and cultural context.

Education is the most important aspect in the progress ofa country, the better an education is, the more advanced a country will be. In this day and age, competition and demands in the field of education are getting higher and higher. But in reality, education in Indonesia is still far from good, this is due to the lack of critical thinking skills in students. Whereas in this era the ability to think critically is very necessary.

Browne (2007) defined critical thinking as an active and reflective process involving analysis, evaluation, and judgement of information and arguments. In addition, Browne also emphasises that critical thinking is not just about finding errors in arguments, but also about understanding and appreciating the complexity of an issue. By thinking critically, students can more easily understand the material in the teaching and learning process.

However, the facts in the field are very different, where students' critical thinking skills can be said to be still very low. The low critical thinking of students is because the teaching and learning process is still dominated by teachers or teachers who are more active than students. To find out the low critical thinking of students is by the learning outcomes obtained by students. To solve this problem, the teacher plays an active role by using several existing strategies, such as cognitive learning.

Slavin (2018), cognitive learning is defined as the process by which individuals acquire, organise, and integrate new knowledge with existing knowledge. The main focus of cognitive learning is how students understand, remember, and use information. Cognitive learning also involves mental processes such as thinking, memory, and problem solving, where students endeavour to build a deeper understanding of the material learnt.

In this cognitive learning, teachers can direct students to learn collaboratively or in groups, this is done so that students can improve their critical thinking skills.

2. RESEARCH METHOD

The method used in this research is literature study. Literature study is defined as a systematic process of collecting, analysing, and synthesising relevant information from various existing literature sources (Creswell, 2009). In this literature study, the author collects and analyses various sources that discuss the concept of critical thinking and effective learning strategies.

Meanwhile, the approach used by researchers is a qualitative approach. According to Creswell (2009), a qualitative approach is a research method that focuses on an in-depth understanding of social phenomena or human experience. In addition, Creswell also emphasises that qualitative research is very useful for understanding the complexity and depth of social phenomena, and provides insights that cannot be achieved through a more structured quantitative approach.

3. RESULT

3.1 Critical Thinking

According to Bowell & Kemp (2009), critical thinking is described as the ability to analyse, evaluate and assess arguments in a logical and systematic way. Critical thinking is not simply taking information for granted, but rather involves an active process of examining the reasons, evidence, and conclusions presented, as well as the ability to identify biases or errors in thinking.

Hughes & Lavery (2015), critical thinking is defined as the ability to assess claims or arguments rationally and systematically. Critical thinking includes the process of assessing and evaluating the reasons, evidence, and assumptions underlying an argument, with the aim of making a logical and informed decision. According to Hughes and Lavery, critical thinking involves not only assessing whether a claim is true or false, but also considering possibilities, exploring alternatives, and assessing the accuracy and strength of evidence. This includes the ability to understand relationships between ideas, detect logical fallacies, and evaluate the consequences of an argument or decision.

Critical thinking skills are very important in education because it not only helps students in solving problems, but also forms individuals who are able to make decisions based on in-depth analysis. Critical thinking involves several aspects such as the ability to assess evidence, make informed conclusions, and make informed judgements. logical, as well as evaluating various alternative solutions to problems. Therefore, the development of these skills among students is very important, especially in the era of information and technology that is full of challenges and rapid changes.

Kahneman (2013), critical thinking can be understood in the context of two systems of thought, namely, the *first system* is automatic, fast, and intuitive thinking. This is a way of thinking that does not require much conscious effort or attention. Thinking with this system is often quick and based on instinct or previous experience. The *second system* is slower, more deliberative and more analytical thinking. The second system involves more in-depth and controlled processing of information. It works in a more logical and rational way, often involving consideration of evidence, more complex problem solving, and double-checking of assumptions and arguments. Kahneman explains that critical thinking is the ability to activate and rely on the second system to carefully evaluate information, identify biases, and make more rational and informed decisions. This is different from the quick thinking done by the first system, which often does not pay attention to details or errors in reasoning.

Based on the understanding of critical thinking from several figures above, it can be concluded that critical thinking is a high-level thinking ability. Where in this ability one must analyse, interpret, evaluate, and draw rational conclusions on the information obtained. To improve critical thinking skills in students, what needs to be done is to do alot of critical thinking exercises in a structured manner. According to Bowell & Kemp (2009), critical thinking has several characteristics, namely:

1. Ability to Analyse Arguments

   So critical thinking involves the ability to analyse arguments in detail. This includes the ability to identify the premises (underlying claims) and conclusion in an argument, as well as to evaluate whether the conclusion is well supported by the premises. People who think critically can see whether an argument is valid and coherent.

2. Ability to Identify Logic and Falasi Errors

   One of the key features of critical thinking is the ability to identify logical errors or fallacies in arguments. Fallacies are thinking errors that undermine arguments and lead to incorrect conclusions. This book

identify different types of fallacies, such as ad hominem, straw man, and false dichotomy, and teach how to recognise and avoid them.

3. Ability to Evaluate Evidence and its Sources

   Critical thinking demands the ability to assess the quality and relevance of evidence used in arguments. This includes the ability to assess the reliability of sources of evidence, understand whether the evidence is relevant and sufficient to support the conclusions being proposed, be aware of biases in the presentation of evidence and how such biases may affect conclusions.

4. Desire to Avoid Bias

   Another characteristic of critical thinking is the willingness to avoid personal bias in the thinking process. People who think critically do not rely solely on personal opinions or prejudices, but they endeavour to evaluate arguments objectively. Thisincludes the ability to be open to different viewpoints and avoid confirmation bias (looking for evidence that only supports an existing view).

5. Critical Questioning Ability

   Critical thinking involves the ability to ask deep questions. People who think critically do not just accept information at face value, but they continueto ask questions about the validity and veracity of the information. This includes questions about the reasoning, evidence, and conclusions being put forward.

6. Ability to Make Rational Decisions

   Critical thinking also includes the ability to make rational decisions based on careful analysis of evidence and arguments. People who think critically can assess the options and consequences of their decisions, and choose the most logical option that supports long-term goals.

7. Ability to Construct Coherent and ValidArguments

   One aspect of critical thinking is the ability to construct coherent and valid arguments. This means that someone who thinks critically can construct arguments that are supported by solid evidence, as well as valid arguments.

   organise their ideas in a clear and structured manner. This is important both in academic discussions and in the context of everyday life.

8. Willingness to Change Outlook

   Critical thinking also includes a willingness to change views based on stronger evidence or arguments. A critical thinker is not stuck in a personal stance or dogma, but is willing to adjust his or her opinion when presented with better reasons or stronger evidence.

9. Self-Reflection

   Critical thinking requires one to self-reflect and realise the limitations or errors in their own way of thinking. Critical thinkers must be able to objectively evaluate their own thinking and see if they are being trapped in unproductive or biased mindsets.

10. Openness to Other Perspectives

    Another important characteristic is openness to multiple perspectives. People who think critically are willing to listen to and evaluate different points of view, even if those views conflict with their personal opinions. This includes the ability to look at a problem from multiple sides and consider the implications of various viewpoints.

However, although critical thinking is a very important ability, many students still find it difficult to develop this ability. One way that can be used to improve students' critical thinking skills is by implementing cognitive learning strategies. Cognitive learning strategies aim to involve deeper mental processes in learning activities, with the hope that students will not only memorise information, but also be able to analyse, evaluate and synthesise the information.

3.2 Cognitive Learning

According to Slavin (2018), cognitive learning is an approach that focuses on the mental processes that occur when individuals acquire new knowledge and skills. Slavin explains that cognitive learning emphasises how information is processed in the brain,

including how individuals organise, store and recall thatinformation.

According to Vygotsky (1978), cognitive learning occurs through social interaction and cultural context. Higher psychological developmental processes (such as logical thinking, memory, and problem solving) are learnt through interactions with others be it adults, peers, or society in general who are more skilled. Cognitive learning occurs within social and cultural contexts that provide structure and meaning for individuals in processing information and constructing knowledge.

According to Piaget in Slavin's book (2018), explains that cognitive learning is an active process in which individuals construct their knowledge through interaction with the environment and the experiences they have. Piaget considers that children are not passive recipients of information, but they actively develop their understanding of the world.

Based on the definition of cognitive learning from several figures, it can be concluded that cognitive learning focuses on how individuals process information, memory, and knowledge formation. Cognitive learning strategies aim to strengthen students' mental skills in understanding and applying knowledge more effectively.

Some cognitive learning strategies that can be applied to improve critical thinking skills include (Slavin, 2018):

1. Problem-based learning

   One of the most effective ways to develop critical thinking skills is through problem-based learning. PBL challenges students to work in groups or individually to solve real problems that do not have obvious or definite solutions. In this process, students can analyse the problem in depth, gather relevant information, develop a range of potential solutions and evaluate the pros and cons of each solution. Problem-based learning encourages students to think critically, think logically, and make decisions that are based on evidence and not just assumptions.

2. Use of the socratic questioning technique

   Socratic questioning technique is a method used toask questions that encourage students to think more deeply and critically about the topic being discussed in class. This method focuses on A question and answer process that guides students to be able to identify the assumptions underlying their thinking, question the accuracy ofinformation received, analyse the consequences and implications of certain thoughts or decisions. With this technique, students are invited to be more open to various views and consider multiple perspectives, which is very important to improve critical thinking.

3. Cooperative learning

   Co-operative learning is an approach where students work together in small groups to achieve shared learning goals. Each group member is responsible not only for their own learning but also for helping other group members. This helps to reinforce social learning and shared problem solving.

4. Active learning

   Active learning is an approach where students are directly involved in the learning process, not just passively receiving information. There are several techniques in active learning that can improve students' critical thinking, namely, *debate*, students are given the opportunity to argue openly about certain issues or topics, which requires themto analyse and defend their opinions with valid evidence. *Simulation and role playing*, studentsare placed in situations that require them to make decisions or solve problems that require critical thinking.

5. Reflection and self-assessment

   Teachers are required to encourage students to regularly reflect on and their own thinking processes (students) and evaluate or assess whether the approaches they use can effectively improve critical thinking. There are several ways that can be done in reflecting and self-assessment including giving students the opportunity to assessand criticise their own work or the work of classmates, encouraging students to think about the decisions they have made and what they can learn from the experience. This kind of reflection can help students to be more aware of their own way of thinking.

3.3 Relationship Learning Cognitive Learning with students' critical thinking skills

Critical thinking ability is one aspect that is closely related to cognitive learning, because both involve higher-order thinking processes that support each other. So that cognitive learning strategies are proven effective in improving students' critical thinking skills. The following is an explanation of the relationship between cognitive learning and students' critical thinking skills, namely: (1) In cognitive learning, students not only receive information, but also actively process, analyse, and connect the information with existing knowledge. This process develops critical thinking skills, where students are invited not to accept information raw, but to analyse it, question it, and evaluate its validity. (2) Cognitive learning encourages students to reflect on their thinking and evaluate their conclusions. This reflection helps students to identify the strengths and weaknesses of their thinking, which improvestheir critical thinking skills. By evaluating their way of thinking and decision-making process, students can be wiser in facing challenges. (3) Cognitive approaches often involve active learning methods such as group discussions, case studies, and projects that involve in-depth analysis. These activities can encourage students to think more critically, as they are given the opportunity to express opinions, consider multiple perspectives, and develop arguments based on evidence.

So it can be concluded that cognitive learning and critical thinking skills have a close relationship and support each other in the educational process. Cognitive learning is an approach that focuses on how students process information, understand material, and how they use that knowledge in everyday life. Meanwhile, critical thinking involves the ability to analyse, evaluate and draw conclusions objectively and logically, and to make informed decisions based on evidence.

4. CONCLUSIONS

The application of cognitive learning strategies has been proven effective in improving students' critical thinking skills. This learning strategy emphasises the development of students' cognitive aspects, namely the ability to analyse, evaluate and solve problems logically. By using an approach that involves problem solving, socratic questioning techniques, cooperative learning, active learning and reflection or self-assessment that stimulates deep thinking, students can be invited to think more critically in understanding the subject matter.

The relationship between cognitive learning and students' critical thinking skills is very clear, because cognitive learning focuses on developing concept understanding,information processing, and problem solving, which can stimulate students to think more analytically, evaluatively, andreflectively. By using learning strategies that involve deep thinking, such as discussion, question and answer, and problem solving, students are given the opportunity to hone their critical thinking skills. In addition, cognitive learning can strengthen students' critical thinking skills through activities that challenge their ability to organise information, analyse situations and make rational decisions.

5. REFERENCES

[1] Jakcson, Philip W. 2011. *What Is Education?* London: The University of Chicago Press.

[2] Browne, M Neil. 2007. *Asking the Right Questions A Guide to Critical Thinking*. America: Pearson Prentice Hall.

[3] Slavin, Robert E. 2018. *Educational Psychology Theory and Practice*. America: Cenveo.

[4] Creswell, John W. 2009. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. California: SAGE Publications.

[5] Bowell, Tracy & Gary K. 2009. Critical Thinking A Concise Guide. Canada: Routledge.

[6] Hughes, William & Jonathan L. 2008. Critical Thinking An Introduction to the Basic Skill. Canada: Broadview Press.

[7] Kahneman, Daniel. 2013. Thinking, Fast and Slow. New York: Farrar, Straus and Giroux.

[8] Vygotsky, Lev S. 1978. Mind in Society The Development of Higher Psychological Processes. Harvard University Press.