



The Effect of Kolb's Learning Cycle on Students' Critical Thinking Skills

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Abstract

The Kolb's Learning Cycle involves acquiring abstract concepts that can be applied flexibly in a variety of situations. Basically involves four stages, namely: concrete learning, reflective observation, abstract conceptualization, and active experimentation. The purpose of this study is to determine the effect of Kolb's learning cycle on students' critical thinking skills. This research uses a literacy study approach. When conducting experiments is very important in the development of critical knowledge construction. Furthermore, the findings show that there are differences in the critical abilities of students who apply the Kolb's learning cycle learning style and those who do not. Therefore, there is an effect of Kolb's learning cycle learning style on students' critical thinking skill. Further research is recommended, to understand why students with Kolb's Learning Cycle learning styles and do not have different levels of critical thinking skills.

Keywords:

Critical Thinking Skill, Kolb's Learning Cycle

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1. Introduction

Humans who are always growing and developing have a sense of curiosity throughout their lives. To fulfill this curiosity, humans try to learn about things they feel they should know. Learning is carried out by both young people and the elderly, both formally and informally, in academic and non-academic fields. Learning is an effort to increase knowledge which is characterized by changes in behavior through various ways and methods. The way humans get knowledge can be through observing, listening, reading, observing and so on. An approach that describes the way in which each individual concentrates on the process, mastering difficult and new information through different perceptions is called a learning style (Ghufron, 2012).

The learning style of each individual must be different considering that every human being has different characteristics. Every human being takes his own path in an effort to gain new knowledge. In schools, the learning styles of students should be the focus for teachers in preparing for learning. (Hafizha, et al. 2022) mentions one that can affect learning success is learning style. Teachers as much as possible design learning in the classroom according to student learning styles. In addition, students also need to adjust their learning style to the competencies and skills to be achieved.

Competencies and skills that must be mastered by students today are increasingly diverse. This is in accordance with the demands of the existing developments. In the era of industry 4.0, students must be able to compete not only with the domestic community, but the existing competition is focused on the global community. Therefore, it is important for students to be able to prepare themselves by mastering various 21st century competencies and skills, including critical thinking skills, creative thinking skills, communication skills, and collaboration skills. These competencies are known as 4C competencies (Zubaidah, 2018). Critical thinking skills are thinking skills to solve problems or make decisions on the problems at hand. These skills are needed by all humans to be able to solve problems and make decisions about the problems they face in their lives. These skills include the ability to distinguish truth or lies, fact or opinion, or fiction and non-fiction (Arnyana, 2019).

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To achieve these competencies, of course, students need to make various efforts, one of which is adjusting learning styles that are in accordance with the competencies and skills to be achieved. Because not all learning styles will give maximum results on a competency or skill to be achieved. Based on the description above, the writer intends to find out whether there is an influence of Kolb's Learning Cycle learning style on students' critical thinking skills.

2. Discussion

2.1 Kolb's Learning Cycle

Kolb's learning style model (Kolb, 1984) combines perception, i.e. vertical lines, with processing, horizontal lines, and by setting axes in circles. Thus, four different modes of learning were created, namely: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Concrete Experience focuses on engaging in experience and dealing with direct human situations personally, paying attention to the uniqueness and complexity of current reality over theory and generalizations. Reflective Observation focuses on understanding the meaning of ideas and situations by carefully observing and describing them, paying attention to what is true or how something happens rather than what will work out. Abstract Conceptualization focuses on the use of logic, ideas, and concepts, concerned with building general theories rather than intuitively understanding unique and specific areas. Active Experiments focuses on actively influencing people and changing situations, paying attention to what works rather than what is absolute truth; emphasis on doing, more than observing.

Axis also creates four quadrants of learners with different types of learning styles: diverger, assimilator, convergent, and accommodator. Divergers learn by reflecting on concrete experiences to create a learning style that can see concrete situations from a different perspective. Assimilators learn by contemplating abstract concepts and placing information in a logical form. Convergent takes abstract ideas and active experimentation to find practical uses of information by finding solutions to problems. Accommodators take concrete experiences mixed with active experimentation in hands-on experiences.



Picture 1. four quadrants of learners

2.2 Critical Thinking Skill

Thinking ability has become one of the methods that people must possess, particularly in the sphere of education. Specifically, there is this critical thinking capacity that has been discussed in the education industry for evaluating students' learning achievements. The five critical thinking skills are: interpreting, analyzing, evaluating, making conclusions, and explaining the results of thought. Critical thinking is a deliberate, reasoned, and goal-oriented way of thinking that is employed in decision making (Yaldiz and Bailey, 2019). Based on the experience of the students in learning with critical thinking, there is a lot of process in considering many decisions from many ideas to be applied. This gives the effect of higher thinking skill. Critical thinking is classified as a higher category of thinking activity that necessitates a set of cognitive abilities (Burden and Byrd, 1994). This ability allows people with an idea that can be reviewed to make preliminary decisions to solve difficulties (Ruggiero, 2012). This remark illustrates the critical thinking skill, which is categorized as a higher order thinking activity because when people strive

to solve a problem, they are prone to think critically about it. This ability focuses on self-improvement, which is essential for the rectification of a use evaluation standard mental process (Paul, 1990). As a result, critical thinking has several signs to assess the level of evaluation in learning.



Picture 2. Critical thinking and its relationship to other cognitive skills

In the cognitive approach, critical thinking can be defined as the mental processes, methods, and representations that people use to solve issues, make decisions, and learn new concepts (Sternberg, 1986). Critical thinking is a mental process in which people actively and skillfully conceptualize, apply, analyze, synthesize, and evaluate information in order to achieve a decision or solution (Costa and Kalick, 2014). Students will gain a new concept for their own material as a result of gaining new understanding in material. According to the research literature, this thinking talent consists of judgment, analysis, evaluation, inference, and attitude (Facione, 1990). Thus, critical thinking assists students in learning new concepts since it encourages them to assimilate knowledge and answer problems critically. One aspect of critical thinking includes logical reasoning, analytical thinking, and conclusion, which each learner approaches differently. Learning style is the same as thinking style (Abdi, 2012). Some research supports the influence or effect of thinking style or critical thinking learning. As a result, it is necessary to establish a learning style that is compatible with critical thinking in order for students to learn.

2.3 The Effect of Kolb's Learning Cycle on Critical Thinking Skills

Critical thinking is a thought process that requires the ability to understand every decision taken. Learners will always evaluate the stages of the activities that have been taken, in this case, the learners are required to focus on something. Therefore, learning styles more influential on the success of critical thinking is a learning style that gives the learners the opportunity to focus on all the decisions that have been made. The convergence learning style gives the effect of thinking higher than divergent.

Convergence learning learners through problem-solving, decision making and application of ideas, focus on logical and analytical thinking, perform activities directly, they are interested in solving the problem, through actual or abstract based testing. Individuals with convergent learning styles are best at finding practical uses for ideas and theories. He is able to solve problems and make decisions effectively. Convergent is often defined as critical thinking (choosing the best ideas), with the characteristics of good memory, logical thinking, factual knowledge, and accuracy.

Judging from the four quadrants of students with various types of learning styles by Kolb, namely diverger, assimilator, convergent, and accommodator, it can be seen that in Kolb's Learning Cycle there are two dominant learning styles, namely divergent and convergent. Learners with convergent learning styles have a higher influence on critical thinking skills. Convergent learning style is a combination of abstract conceptualization (AO) learning style with active experimentation (AE). People who have this learning style tend to take practical values from various ideas and theories.

Learners with a convergent learning style have the ability to solve problems and make decisions based on problems. You prefer to deal with technical problems than social problems and enjoy interpersonal experimentation. In formal learning, you prefer to experiment with new ideas, simulations, laboratory

assignments, and practical applications. In other words, Kolb's Learning Cycle has an effect on the critical thinking of students, from the way of solving problems that are different from other learning styles.

3. Conclusion

Kolb's learning style model (Kolb, D. A., 1984) combines perception, i.e. vertical lines, with processing, horizontal lines, and by setting axes in circles. Thus, four different modes of learning were created, namely: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Axis also creates four quadrants of learners with different types of learning styles: diverger, assimilator, convergent, and accommodator. Critical thinking is a mental process where individuals need to actively and skillfully conceptualize, apply, analyze, synthesize, and evaluate information to reach an answer or conclusion (Costa and Kalick, 2014). In order to reach a conclusion, students must consider several decisions they must make. In the end, it can assist students learn new concepts because it requires students to assimilate knowledge and answer problems critically.

Student learning styles according to the Kolbs learning model affect the way students analyze knowledge and draw decisions from the knowledge that they get. In this case the learning style that is more influential on the success of critical thinking is a learning style that provides opportunities for students to focus on all decisions that have been made. Convergent is often defined as critical thinking (choosing the best idea), with the characteristics of good memory, logical thinking, factual knowledge, and accuracy. Learners with convergent learning styles have the ability to solve problems and make decisions based on problems. Therefore, it can be concluded that students' learning styles based on the Kolbs learning style model have an influence on students' critical thinking skills, namely students with convergent learning styles who are more dominant in their critical thinking abilities.

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