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Implementation of Constructivism Theory in Improving the Quality of Learning

Ayla Rosydiana[1], Anis Julia Amanda[2], Anabil Restu[3], Umu Salamah[4]
[1,2,3,4] Universitas Islam Negeri Raden Mas Said Surakarta, Indonesia
Correspondence Email: summu1279@gmail.com

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Abstract

In the era of globalization and the industrial revolution, the challenges faced by the world of education are increasingly complex, especially in creating students who are able to think critically, creatively, and adaptively to change. This research aims to analyze the application of constructivist theory in improving the quality of learning, identifying problems that arise, and formulating relevant solutions. The method used is qualitative research with a descriptive-analytical literature review approach, with data sources in the form of scientific journals, books, and literature related to constructivism. The results of the study show that constructivistic learning is able to increase students' active involvement, critical thinking skills, concept understanding, and social skills through a student-centered learning process. Implementation is carried out through the planning, implementation, and evaluation stages that emphasize exploration, discussion, and reflection activities. However, its implementation still faces several obstacles, such as limited facilities, differences in student characteristics, and teacher competence that is not optimal. Therefore, careful planning, teacher competency improvement, and adequate learning environment support are needed so that constructivistic learning can run effectively and sustainably.

Keywords Active Learning, Constructivism, Critical Thinking, Quality of Learning, Student-Centered Learning

INTRODUCTION

Education is an important element in the development of a country. The quality of education has a great influence on the quality of human resources produced (Nurkholis, 2013). In the era of globalization and the industrial revolution, the challenges faced by the world of education are increasingly complex, especially in creating students who are able to think critically, creatively, and adaptively to change. A learning approach is needed that is not only oriented to the transfer of knowledge, but also to the process of forming meaningful understanding. In this context, constructivism theory is one of the relevant approaches to answer these demands (Suryana, Aprina, & Harto, 2022).

Conceptually, constructivism views that knowledge cannot be transferred directly from teacher to student, but must be built by students themselves through active learning experiences (Masgumelar & Mustafa, 2021). Leading figures in this theory, such as Jean Piaget, explain that the learning process occurs through mechanisms of assimilation and accommodation in the cognitive structure of the

individual. Meanwhile, Lev Vygotsky emphasized the importance of social and environmental interaction in the formation of knowledge, especially through the concept of zone of proximal development (ZPD) (Amahorseya & Mardliyah, 2023). This emphasizes that constructivistic learning requires students' active involvement in exploring, discussing, and reflecting on their learning experiences.

However, in practice, learning in many educational institutions is still dominated by traditional teacher-centered learning methods. Students are often just passive recipients of information without the opportunity to construct understanding independently. This condition has an impact on students' low critical thinking skills, creativity, and problem-solving skills (Arafah, Sukriadi, & Samsuddin, 2023). In addition, various obstacles such as limited facilities and infrastructure, lack of teacher competence in implementing innovative approaches, and a conventional learning culture are also obstacles to the implementation of constructivistic learning.

A number of previous studies have shown that the application of a constructivist approach is able to increase students' active participation, deeper understanding of concepts, and more optimal learning outcomes (Mulyadi, 2022). However, most of the research still focuses on the effectiveness of the method without comprehensively examining the implementation challenges in the field. Therefore, this research has state-of-the-art novelty by presenting a more in-depth analysis not only on the theoretical aspects of constructivism, but also on the real obstacles faced in practice and contextual solutions in accordance with current educational conditions.

METHODS

This study applies a qualitative method with a type of literature review that aims to explore in depth the concepts, principles, and application of constructivism theory in the learning process (Azzahra, Ali, & Bakar, 2025). The design of this research is descriptive and analytical, which explains and analyzes various theories based on appropriate scientific sources. The data sources used in this study include primary data from scientific journals that discuss constructivism and secondary data such as books, proceedings, and other supporting literature. The selection of sources is carried out by considering relevance, reliability, and up-to-date information so that the data used remains valid and can be accounted for academically.

FINDINGS AND DISCUSSION

Constructivist learning theory views that learning is not just an activity carried out by humans, but an active process in building and compiling knowledge based on the experiences of each individual (Masgumelar & Mustafa, 2021). In this perspective, knowledge is not acquired instantly, but is constructed through the interaction between new experiences and pre-existing knowledge. Tran Vui argues that constructivism is a theory of learning that is based on personal experience. Meanwhile, constructivism theory is a theory that allows each individual to improve their abilities and knowledge in the sense that constructivist learning places students as the main focus in the educational process (student-centered learning) and encourages them to be actively involved in the effort to discover, process, and interpret knowledge (Suryana, Aprina, & Harto, 2022).

Constructivist learning is an approach that encourages students to be actively involved in the learning process in the classroom (Azzahra, Ali, & Bakar, 2025). In this approach, students not only passively receive information from educators as is often the case in behaviorism-based learning, but participate directly in building understanding. Constructivism views learning as an active process, in

which learners independently construct their knowledge through experience and involvement in learning activities.

In accordance with the view of constructivism, learning is not just a memory activity, but an active process in building knowledge based on experience (Masgumelar & Mustafa, 2021). Knowledge is seen as the result of a construction carried out by each individual, not something that is transferred directly from others. Therefore, from the perspective of constructivism, the learning process does not focus on conveying information from teachers to students, but rather on efforts to facilitate students to be able to develop their own knowledge through interaction with various phenomena and objects studied.

Principles of Constructivism Theory

According to Wheatley in constructivist learning theory, there are two main principles that influence the learning process (Masgumelar & Mustafa, 2021). First, students gain knowledge through cognitive activities, both passively and actively, based on their cognitive structure. Second, the cognitive process plays a role in organizing the learning experience obtained directly by students.

Twomey Fosnot argues that constructivism is based on four main principles (Suryana, Aprina, & Harto, 2022). Learning is influenced by the initial knowledge that the individual has, which is then adapted to new ideas. The learning process also involves the activity of finding ideas, reviewing previous understandings, and forming new conclusions that may be different or contrary to existing knowledge. This shows that learning is a dynamic process that continues to develop.

According to Wray and Lewis, there are four constructivist principles in learning (Arafah, Sukriadi, & Samsuddin, 2023). (1) Students need to have adequate basic knowledge as a basis for understanding new concepts, and be assisted in associating old knowledge with new knowledge. (2) Social interaction and group discussions have an important role in the learning process, while still considering the role of the teacher as a facilitator. (3) The learning context must be relevant, but it is necessary to realize that relevance according to the teacher is not necessarily the same as what is felt by the student. (4) Students need to develop metacognitive awareness, which is the ability to understand and reflect on their own thought processes.

In comparison, Twomey Fosnot's theory and Wray and Lewis have something in common in emphasizing that new knowledge is strongly influenced by the experience and initial knowledge that learners have. Meanwhile, Wheatley focuses more on the aspect of individual cognition, with the view that knowledge cannot be transferred directly from one individual to another, but must be constructed and interpreted by himself (Masgumelar & Mustafa, 2021). This process involves various mental activities such as thinking, understanding, remembering, assessing, and solving problems, resulting in a more meaningful understanding for the individual.

Implementation of Constructivism Theory in Learning

The implementation of constructivist learning is carried out through several systematic stages (Suryana, Aprina, & Harto, 2022). The first stage is the preparation stage, where the teacher carefully designs all components related to the learning process. At this stage, the teacher sets learning goals, explains the steps to achieve them, organizes the material, and searches for and utilizes various relevant learning resources. In addition, teachers also associate new knowledge with the initial knowledge that students already have so that learning becomes more meaningful. Teachers play a role in guiding students to reflect and review the information or learning experiences that have been obtained. Careful planning is an important factor because it greatly determines the success of the learning process in the

next stage.

The second stage is the implementation of constructivistic learning. At this stage, teachers implement a learning strategy that has been designed with an emphasis on the active involvement of students (Masgumelar & Mustafa, 2021). Learning is directed so that students are able to build their own knowledge through various activities such as discussion, exploration, and problem-solving. Teachers are no longer the center of information, but rather act as facilitators who create a conducive and challenging learning atmosphere. Students are encouraged to think independently, express opinions, and develop curiosity about the material studied.

The final stage is the closing or evaluation of learning. At this stage, the teacher assesses the student's understanding and ability after participating in the learning process. Evaluation does not only focus on the final result, but also on the learning process that students have gone through. Joint reflection activities are also an important part of knowing the extent to which students are able to construct their knowledge (Azzahra, Ali, & Bakar, 2025).

In the perspective of constructivism, as stated by Yuberti (2014), learning is a process of knowledge construction carried out by students actively. Therefore, the application of this theory requires a learning strategy that is able to develop students' independence of thinking. Some of the steps that can be taken include encouraging students to learn independently, developing inquiry activities in each learning topic, and building curiosity through problem-based questions. In addition, learning can also be done through group work to increase social interaction and collaboration between students (Mulyadi, 2022).

The application of constructivism theory has also been adapted in various learning methods, one of which is the Al-Barqy method developed by Muhadjir Sulthon in learning to read the Qur'an. This method utilizes constructivist principles such as assimilation and accommodation, as well as the Analytical-Synthetic Structural (SAS) approach, which emphasizes the process of analysis, repetition, and gradual comprehension preparation. With this approach, learning to read the Qur'an becomes more effective, efficient, and easy for students to understand.

More concretely, the application of constructivist learning in the classroom can be carried out through several stages (Suryana, Aprina, & Harto, 2022); 1) Develop an understanding that learning will be more meaningful if students are actively involved in discovering and building their own knowledge and skills. 2) Apply systematic inquiry activities in various learning materials so that students are accustomed to thinking critically and analytically. 3) Foster students' curiosity through providing challenging problems or questions so as to encourage further exploration. 4) Encourage cooperation through group discussions so that social interaction can enrich students' understanding.

The data on the percentage of indicators of constructivist learning success was obtained through observation of several aspects of students' abilities after the implementation of constructivism-based learning. The measurement was carried out by looking at the level of student achievement in the aspects of critical thinking, communication, cooperation, innovation, and problem-solving skills during the learning process. The results of the data processing are then presented in the form of diagrams to provide a clearer and measurable picture of the effectiveness of constructivistic learning.

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provide a clearer and measurable picture of the effectiveness of constructivistic learning.

Constructivist theory has a number of advantages in the learning process, including (Masgumelar & Mustafa, 2021): a) Thinking Aspect: Constructivism encourages students to be active in building new knowledge. This process trains critical thinking skills, such as solving problems, generating ideas, and making decisions independently; b) Comprehension Aspect: The direct involvement of students in the learning process makes it easier for them to understand the material. The knowledge gained is not only theoretical, but can also be applied in a variety of real-life situations; c) Memory Aspect: Learning that involves hands-on activities and real experience allows students to remember concepts for longer. This is because they build their own understanding, so that they are more attached to the memory; d) Social Skills Aspect: Through interaction with peers and teachers, students can develop social skills such as cooperation, communication, and argumentative skills in building common knowledge; e) Motivation and Learning Enjoyment Aspects: Active involvement of students in learning creates a more enjoyable learning atmosphere. Students become more confident, enthusiastic, and motivated in following the learning process.

In addition to having advantages, constructivistic theory also has several limitations, including (Arafah, Sukriadi, & Samsuddin, 2023): 1) Potential for Misconception: Because students build their own knowledge, there is a possibility that the understanding formed is not in accordance with the correct scientific concept, so it can lead to misconceptions. 2) Takes Longer Time: The constructivist learning process takes a relatively longer time because students have to go through stages of exploration, discussion, and reflection to build understanding. 3) Differences in Student Characteristics: Each student has different learning abilities and paces, so it requires a diverse approach to learning, which can sometimes be difficult to accommodate optimally. 4) Limited Facilities and Infrastructure: Not all schools have adequate facilities to support active and creative learning, so the implementation of constructivism can be hampered. 5) Teacher Competency Demands: Even though teachers play the role of facilitators, high competence is still needed in designing and managing learning. Teachers must also have a wise attitude and be able to be an example so that the learning process continues to run effectively and humanely.

CONCLUSION

Based on the research objectives, it can be concluded that the application of constructivist theory in learning has an important role in improving the quality of the learning process. This approach places learners as active subjects who build their own knowledge through experience, social interaction, and reflection processes. The results of the discussion showed that constructivistic learning was able to improve critical thinking skills, deeper understanding of concepts, and student motivation and involvement in learning activities.

However, its implementation in the field still faces various obstacles, such as potential misconceptions, limited learning time, differences in student characteristics, and lack of supporting facilities and infrastructure. In addition, the success of implementing this approach is also greatly influenced by teachers' competence in designing and managing student-centered learning.

Efforts to improve teacher competence are needed through continuous training, more mature learning planning, and adequate facility support from educational institutions. With the synergy between teachers, students, and the educational environment, constructivistic learning is expected to be applied optimally to produce students who are critical, creative, and adaptive to the development of the times.

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