

The Influence of Vygotsky's Learning Theory on the Critical Thinking Ability of Students of Elementary School Madrasah

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ABSTRACT

Critical thinking skills are essential cognitive skills that need to be developed early on, especially at the elementary education level such as Islamic elementary schools (MI). This study aims to examine the influence of Vygotsky's learning theory on the development of critical thinking skills in MI students through the Systematic Literature Review (SLR) approach. Vygotsky's theory, which focuses on social interaction, scaffolding, and the Zone of Proximal Development (ZPD), has been shown to support the creation of collaborative learning that stimulates students' reasoning skills. The results of studies from various literatures in 2020–2024 show that learning approaches based on Vygotsky's theory, such as Problem Based Learning (PBL), guided inquiry, and learning communities, can significantly improve students' critical thinking skills. However, challenges such as limited teacher competence, high student-teacher ratios, and minimal contextual learning resources are obstacles to its implementation. Therefore, strengthening strategies that include teacher training, development of learning tools, and institutional support are crucial so that this theory can be applied effectively in the MI environment.

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INTRODUCTION

Critical thinking skills are cognitive skills that are very important to develop early on, especially at the elementary education level such as madrasah ibtidaiyah. In the era of globalization and rapid development of information, students are required not only to receive information passively, but also to be able to analyze, evaluate, and conclude the information independently and logically. Elementary education plays an important role in forming the foundation of this thinking, because this period is the initial stage in the formation of systematic and reflective thinking (Sagala, 2017). In the context of education, learning theory is one of the main approaches to understanding and developing appropriate learning strategies. One of the most influential learning theories is Lev Vygotsky's Socio-Cultural Theory. Vygotsky emphasized the importance of social interaction and cultural environment in children's cognitive development. The main concept in this theory is the Zone of Proximal Development (ZPD), which is the distance between the actual abilities that students have independently and the potential abilities that can be achieved through the help of adults or more capable peers

(Sanjaya, 2021). Through meaningful social interactions, students can build a deeper understanding, including in terms of critical thinking.

Harahap & Harahap's (2024) research shows that the implementation of thematic learning based on Vygotsky's theory significantly improves the critical thinking skills of elementary school students through strengthening scaffolding and collaboration. Likewise, Hidayat et al. (2023) confirmed that the inquiry approach and differentiated learning based on social-constructivism are able to facilitate high-level thinking processes, including critical thinking. This learning strategy is in line with the characteristics of madrasah education which emphasizes collaboration, Islamic values, and contextual learning. Furthermore, Nur Hidayat (2022) emphasized that the inquiry learning model as an application of Vygotsky's principles has a positive impact on improving critical thinking skills and learning outcomes of MI students. Research by Aziza (2020) and Sihab (2022) also showed similar results, that a learning approach involving active social interaction and open questions was able to significantly improve the critical thinking skills of elementary madrasah students.

However, although many Vygotsky-based learning approaches have been used, studies that specifically and systematically review the effectiveness of their application in the context of learning in elementary madrasahs are still limited. Therefore, a systematic literature review is needed to examine the extent to which Vygotsky's learning theory has been applied in MI learning and how it affects the development of students' critical thinking skills. This study is important not only to enrich Islamic education literature, but also as a basis for teachers and policy makers in designing effective, applicable, and contextual learning strategies at the elementary madrasah level.

METHOD

This study uses a systematic literature review (SLR) approach. This method was chosen to obtain a comprehensive understanding of the application of Vygotsky's learning theory in elementary madrasah learning and its influence on students' critical thinking skills.

1. Type and Approach of Research

This type of research is descriptive qualitative with a systematic literature review approach. This approach is carried out by identifying, evaluating, and synthesizing relevant scientific literature to answer predetermined research questions (Creswell & Poth, 2018).

2. Data Sources

The data sources in this study consist of accredited national journals, theses, and scientific books relevant to the topic. The literature inclusion criteria include:

- a. Published in the period 2020–2024;
- b. Discussing Vygotsky's theory, critical thinking skills, and/or learning in madrasah ibtidaiyah or elementary schools;
- c. Written in Indonesian;
- d. Has open access and is available online.

Meanwhile, literature that is not directly relevant, does not have a clear methodology, or does not meet academic standards is excluded from the study (exclusion criteria).

3. Data Collection Techniques

Data were collected through searches in various online databases such as Garuda Kemdikbud, Google Scholar, and Portal Moraref. Search keywords include: "Vygotsky", "critical thinking", "madrasah ibtidaiyah", "scaffolding", and "ZPD". The data obtained were selected based on the abstract, year of publication, and relevance of the content to the research objectives.

4. Data Analysis Techniques

Data analysis was carried out in the following stages:

- a. Identification: Filtering relevant articles from search results.
- b. Thematic Synthesis: Grouping study results based on major themes such as the application of scaffolding, social collaboration, and the impact on critical thinking.
- c. Drawing Conclusions: Compiling findings descriptively to formulate a general picture of the influence of Vygotsky's learning theory on the critical thinking skills of MI students (Miles, Huberman, & Saldaña, 2020).

RESULTS AND DISCUSSION

1. Application of Vygotsky's Theory in Elementary Madrasah Learning

Vygotsky's learning theory places social interaction as the main foundation in children's cognitive development. In the context of learning in Elementary Madrasah (MI), this approach is very relevant because it involves students in a collaborative learning process. Two main concepts in Vygotsky's theory, namely the Zone of Proximal Development (ZPD) and scaffolding, provide a framework for designing learning that is adaptive to individual abilities.

Research by Salsabila and Muqowim (2024) shows that the application of the Problem Based Learning (PBL) model based on Vygotsky's theory can improve students' critical thinking skills. This happens because PBL requires students to work in small groups to solve real problems, where the process of discussion, argumentation, and reflection is the main key.

Similarly, Mardiyah et al. (2023) stated that the Learning Community approach, which facilitates interaction between students in study groups, creates a social learning environment that encourages active involvement. Students not only absorb information from teachers, but also build knowledge through dialogue and collaboration. It is in this context that the scaffolding role of teacher or peer support becomes very significant in helping students reach their maximum potential.

2. Influence on Students' Critical Thinking Skills

Critical thinking skills are an important competency in 21st century learning. In learning based on Vygotsky's theory, this ability is developed through social interaction and reflective activities. Hidayat et al. (2023) revealed that guided inquiry-based learning and differentiation strengthen critical thinking skills because students are encouraged to formulate questions, explore data, and construct knowledge independently.

In addition, Mulyanti et al. (2023) showed that the inquiry learning model not only improves learning outcomes but also the quality of students' questions and arguments. The critical thinking process is fostered through activities such as designing experiments, making hypotheses, and drawing conclusions based on the data obtained. This is in line with the ZPD framework, where students are continuously guided to move from a zone that they can do themselves to a zone that requires help from others.

Sihab (2022) in his research emphasized that scaffolding provided by teachers in the form of trigger questions, additional explanations, or feedback is very helpful in deepening students' thinking. Through this process, students not only understand the material superficially, but are able to analyze, evaluate, and synthesize the information obtained.

3. Challenges in Implementing Vygotsky's Theory in Elementary Madrasahs

Although the application of Vygotsky's learning theory provides many benefits for the development of students' critical thinking skills, there are several challenges faced in its implementation in elementary madrasah environments. These challenges need to be identified so that the learning strategies applied can be adjusted to real conditions in the field.

First, the limited competence of teachers in understanding and applying social constructivism-based learning approaches is still a major obstacle. A study by Zainuddin and Maulida (2023) showed that some MI teachers did not fully understand the concept of ZPD and scaffolding in depth, so that the implementation of learning was still conventional and teacher-centered. This condition causes students' maximum potential in critical thinking to not be optimally developed.

Second, the high ratio of students to teachers in several MIs is also an obstacle to implementing a collaborative approach. According to research by Anisa et al. (2022), small group-based learning that requires intensive social interaction is difficult to implement effectively when there are too many students in one class. Teachers have difficulty providing targeted scaffolding to each student according to their individual needs.

Third, the availability of learning resources that support critical thinking activities is still limited. In several madrasahs, textbooks and learning media do not yet support exploration activities, open discussions, and logical reasoning which are the main characteristics of Vygotsky's approach. This was stated by Pratiwi and Suryana (2021), who emphasized the importance of developing contextual teaching materials that can facilitate social interaction and high-level cognition in MI classes.

Fourth, the learning culture of MI students who are accustomed to lecture and memorization approaches is a challenge in adopting active learning strategies. As stated by Fauziah (2022), the transition to learning that emphasizes the process of thinking and collaboration requires time and a paradigm shift, both from students and teachers.

By recognizing these challenges, madrasahs and related parties are expected to be able to formulate appropriate policies and mentoring programs. Teacher training, development of contextual learning resources, and adaptive classroom management are important steps so that the Vygotsky-based approach can be applied effectively and sustainably in the context of elementary madrasah education.

4. Strengthening Strategy for the Implementation of Vygotsky's Theory in Elementary Madrasahs

To optimize the influence of Vygotsky's learning theory on students' critical thinking skills, a strengthening strategy is needed that is practical and contextual in accordance with the conditions of elementary madrasahs. This strategy must include pedagogical, institutional, and cultural aspects so that the implementation of the socio-cultural approach can run effectively.

First, increasing teacher capacity through ongoing training is an important step. Teachers need to be equipped with a deep understanding of the concept of the Zone of Proximal Development (ZPD), scaffolding techniques, and how to design learning based on social interaction. The results of Rahmawati and Lestari's (2023) research show that teacher training based on lesson study and peer teaching is effective in improving teachers' abilities in implementing constructivist learning strategies at the MI level.

Second, the development of learning tools that support collaborative activities needs to be a priority. Problem-based learning modules, exploratory worksheets, and high-order thinking questions can facilitate students' critical thinking processes in a social context. A study by Hamid and Fauzan (2022) showed that the use of interactive media designed with a Vygotsky approach increased student participation and argumentation during learning.

Third, there needs to be parental and community involvement in the learning process. Students' social environments outside of school can also be utilized to build meaningful interactions and expand learning contexts. This is in line with Vygotsky's principle that cognitive development occurs through diverse social experiences. In the context of MI, parental involvement in group learning activities or home-based projects can naturally strengthen critical thinking processes.

Fourth, madrasahs as educational institutions must provide systemic support in the form of policies, flexible schedules for collaborative learning, and the provision of space and facilities for discussion and group work. In addition, a school culture that values dialogue, tolerance, and reflection needs to be built consistently so that Vygotsky's approach can take root in everyday learning practices.

By implementing these strategies, elementary madrasahs are expected to be able to make Vygotsky's learning theory not only a conceptual framework, but also a real practice in developing students' critical thinking skills in a sustainable and contextual manner.

5. Implications and Recommendations

The results of this study indicate that the application of Vygotsky's learning theory is very effective in improving the critical thinking skills of MI students. Social-based learning approaches such as scaffolding, PBL, guided inquiry, and Learning Community have been proven to be able to create a learning environment that stimulates students' reasoning, analytical skills, and courage in expressing opinions.

The practical implication of this finding is the importance of teacher training in implementing learning strategies based on social constructivism theory. Teachers do not only act as conveyors of information, but as facilitators and thinking partners who accompany students in exploring various ideas. Meanwhile, in terms of policy, madrasahs need to encourage the use of innovative learning models that not only emphasize academic achievement, but also the development of critical thinking skills as part of character education.

CONCLUSION

The application of Vygotsky's learning theory, especially through approaches such as scaffolding, Zone of Proximal Development (ZPD), Problem Based Learning, guided inquiry, and learning community, has proven effective in improving the critical thinking skills of elementary school students. Through social interaction, collaboration, and targeted guidance, students can develop deeper analytical, evaluation, and reflection skills.

However, the implementation of this theory faces various challenges, such as limited teacher understanding, high student-teacher ratio, limited learning resources, and traditional learning culture. Therefore, a strengthening strategy is needed that includes teacher training, development of contextual learning tools, community involvement, and systemic support from the school.

Overall, Vygotsky's theory is not only conceptually relevant, but also applicable in shaping the critical thinking skills of MI students if supported by appropriate and sustainable strategies.

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