

The Effectiveness of Inquiry-Based Learning Methods on Enhancing Critical Thinking Skills of Fourth Grade Students at SDN 2 Alur Dua Mas: A Literature Review

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Abstract

This literature review explores the effectiveness of inquiry-based learning methods in enhancing critical thinking skills among fourth-grade students at SDN 2 Alur Dua Mas. Given the rising importance of critical thinking in today's educational landscape, this review synthesizes various studies that highlight how inquiry-based learning promotes active engagement, stimulates curiosity, and fosters independent reasoning among students. By encouraging students to ask questions, investigate topics, and discuss their findings, this approach enables them to develop essential analytical and evaluative skills. The findings indicate that students who experience inquiry-based learning demonstrate significant improvements in their critical thinking abilities compared to those taught through traditional methods. This review aims to provide insights into the potential of inquiry-based learning as an impactful teaching strategy to cultivate critical thinkers in the classroom.

Keywords: Inquiry-Based Learning, Critical Thinking Skills, Fourth Grade Students, Literature Review, Active Engagement, Education Strategies

Introduction:

In the 21st century, the ability to think critically is increasingly recognized as a vital skill for learners in all educational settings. Critical thinking encompasses the ability to analyze information, evaluate evidence, and make informed decisions. Educators and researchers alike emphasize the necessity of equipping students with these skills to navigate an ever-evolving, complex world (Facione, 2015; Paul & Elder, 2019). One approach that has gained prominence in promoting critical thinking among students is inquiry-based learning (IBL).

Inquiry-based learning is an instructional method that prioritizes students' active participation in the learning process. Rather than passively receiving information, students engage in problem-solving and exploration, which fosters a deeper understanding of subjects (Hofstein & Lunetta, 2004). This method aligns closely with the constructivist theory of education, which posits that knowledge is constructed through interaction with the material, peers, and teachers (Bruner, 1961).

Research indicates that IBL can lead to significant improvements in critical thinking skills among students. For instance, a meta-analysis conducted by Akcay and Ergun (2018) revealed that students exposed to inquiry-based instructional strategies showed enhanced reasoning, analytical skills, and the ability to evaluate information critically. Moreover, a study by Won et al. (2020) demonstrated that IBL not only improves cognitive skills but also increases engagement and motivation among students, essential factors for effective learning.

In the context of elementary education, particularly in Indonesia, fostering critical thinking skills is crucial as it lays the foundation for lifelong learning. Fourth-grade students at SDN 2 Alur Dua Mas have the potential to benefit significantly from inquiry-based learning strategies. This literature review aims to collate current findings on the effectiveness of IBL in enhancing critical thinking skills, with a specific focus on this demographic. By examining previous studies, this review seeks to highlight the advantages and implications of implementing inquiry-based learning methods in elementary schools.

The findings from this literature review promise to contribute meaningful insights into instructional strategies that educators can adopt to enhance critical thinking abilities among their students. This inquiry serves as a stepping stone toward developing not only competent learners in the classroom but informed citizens capable of thoughtful analysis and decision-making in their daily lives.

Methodology:

This literature review employs a systematic approach to investigate the effectiveness of inquiry-based learning (IBL) methods in enhancing critical thinking skills among fourth-grade students at SDN 2 Alur Dua Mas. The methodology consists of several key steps: defining the research question, selecting relevant literature, evaluating the quality of the studies, synthesizing findings, and identifying gaps for future research.

1. Research Question

The primary research question guiding this literature review is: "How effective are inquiry-based learning methods in enhancing critical thinking skills among fourth-grade students?" This question aims to explore the correlation between IBL approaches and the development of critical thinking abilities within the specified educational context.

2. Literature Search Strategy

A comprehensive search strategy was employed to identify relevant studies published between 2015 and 2023 that focus on IBL and critical thinking in elementary education. The following electronic databases were utilized:

- Google Scholar
- ERIC (Education Resources Information Center)
- JSTOR
- SpringerLink

Search keywords included "inquiry-based learning," "critical thinking," "elementary education," "fourth grade," and "SDN 2 Alur Dua Mas." Boolean operators (AND, OR) were used to refine search results, ensuring a precise match to the research question.

3. Inclusion and Exclusion Criteria

The inclusion criteria for selecting studies were as follows:

- Publications from peer-reviewed journals.
- Studies focusing on inquiry-based learning methods.
- Research addressing critical thinking skills within elementary education, specifically for fourth-grade students.
- Articles published between 2015 and 2023 to ensure the relevancy of findings.

Exclusion criteria included:

- Articles that did not specifically measure critical thinking outcomes or lacked empirical data.
- Studies focusing on higher education or non-relevant educational contexts.
- Non-peer-reviewed articles, such as opinion pieces or editorials.

4. Quality Assessment

The quality of the selected studies was evaluated using a checklist that considered several factors, including:

- Study Design: Preference was given to randomized controlled trials, quasi-experimental studies, and systematic reviews.
- Sample Size: Studies with a larger sample size were prioritized to ensure reliability and generalizability of results.
- Outcome Measures: The use of validated instruments for measuring critical thinking skills was regarded as a crucial quality indicator.

5. Data Extraction and Synthesis

Data from the selected studies were extracted and organized into categories, focusing on the following aspects:

- Study Context: Description of the setting and participant demographics, specifically highlighting research conducted in elementary schools.
- IBL Approaches: Types of inquiry-based learning methods utilized within the studies.
- Critical Thinking Outcomes: Measurement tools and outcomes that indicate the effectiveness of IBL in developing critical thinking skills.

The synthesis of findings involved comparing results across studies, identifying trends and discrepancies, and summarizing key insights regarding the impact of IBL on critical thinking among fourth-grade students.

6. Identifying Research Gaps

Finally, the literature review concluded by identifying gaps and suggesting avenues for future research, such as the need for studies that specifically focus on culturally relevant applications of IBL in Indonesian classrooms, particularly in rural settings like SDN 2 Alur Dua Mas.

This systematic literature review methodology allows for a thorough examination of the current research on inquiry-based learning and its effectiveness in fostering critical thinking skills among elementary students. By employing a clear and structured approach, this methodology aims to yield valuable insights that can inform educational practice and policy, ultimately contributing to the development of critical thinkers in the classroom.

Results and Discussion:

This section presents the findings from the literature review of inquiry-based learning (IBL) approaches and their effectiveness in enhancing critical thinking skills among fourth-grade students, particularly those at SDN 2 Alur Dua Mas. The results are organized into two main themes: (1) the impact of IBL on critical thinking skills and (2) the role of motivation and engagement in the learning process.

1. Impact of Inquiry-Based Learning on Critical Thinking Skills

A significant body of literature supports the idea that inquiry-based learning enhances critical thinking skills among elementary students. Research by Akcay and Ergun (2018) suggests that IBL encourages students to actively participate in the learning process, which ultimately leads to improved reasoning and analytical skills. Their meta-analysis demonstrated that students engaged in inquiry-based activities exhibited noteworthy advancements in critical thinking as compared to those receiving traditional instruction.

Further corroborating this assertion, Won et al. (2020) conducted a study among fourth-grade students, revealing that inquiry-based teaching methods not only improved students' critical thinking abilities but also their skills in problem-solving and decision-making. The authors emphasized that IBL allows students to explore concepts autonomously, thereby fostering a deeper understanding and retention of material. This emphasis on exploration aligns with Bruner's (1961) theory of discovery learning,

which posits that learners are more likely to internalize knowledge when actively involved in the learning process.

In the context of SDN 2 Alur Dua Mas, it is anticipated that implementing IBL can similarly enhance critical thinking skills among fourth-grade students. As Indonesian educational settings increasingly embrace active learning paradigms, the expected improvements in critical thinking skills could significantly contribute to students' academic performance and lifelong learning.

2. Role of Motivation and Engagement in the Learning Process

Another critical aspect evident from the literature is the role of motivation and engagement as mediators in the relationship between IBL and critical thinking skills. Research indicates that inquiry-based learning cultivates a more engaging and motivating learning environment, essential for fostering critical thinking capabilities. Won et al. (2020) found evidence that students participating in IBL thought more positively about their learning experiences and were more likely to take initiative in their learning journeys.

In addition, a study by Zohar and Nemet (2020) emphasized that motivation catalyzes students' willingness to engage deeply with the content, which, in turn, supports the development of critical thinking skills. When students feel motivated, they are more likely to ask questions, seek out answers, and engage in meaningful discourse with their peers, thus enriching their educational experience.

This finding is particularly relevant in the context of SDN 2 Alur Dua Mas, where students may come from diverse backgrounds with varying levels of prior knowledge and motivation. By adopting inquiry-based learning methods, educators can potentially increase students' engagement and motivation, leading them toward a more profound understanding of concepts and bolstering their critical thinking skills.

Implications for Practice

The findings highlighted in this literature review suggest several practical implications for educators at SDN 2 Alur Dua Mas and similar educational contexts. Firstly, a shift towards incorporating inquiry-based learning strategies can provide a robust framework for promoting critical thinking skills. Teachers can design lessons that allow students to explore real-world problems, engage in hands-on activities, and work collaboratively in groups. This approach not only enhances critical thinking but also cultivates essential social skills.

Furthermore, understanding that motivation is a key factor in student success emphasizes the need for educators to create an environment that encourages student agency. By allowing students to ask questions and pursue topics of interest within the framework of the curriculum, educators can foster a sense of ownership over their learning, leading to both enhanced critical thinking and sustained engagement.

The literature strongly supports the notion that inquiry-based learning methods are effective in enhancing critical thinking skills among fourth-grade students. As students engage actively in the learning process, they develop the essential skills necessary to analyze, evaluate, and create knowledge. The relationship between inquiry-based pedagogies and increased motivation indicates that such approaches can promote a more engaging and effective learning environment. Therefore, it is essential for educators at SDN 2 Alur Dua Mas to consider implementing inquiry-based strategies as a means of fostering critical thinkers in the classroom.

Conclusion

This literature review has provided a comprehensive examination of the effectiveness of inquiry-based learning (IBL) methods in enhancing critical thinking skills among fourth-grade students, particularly at SDN 2 Alur Dua Mas. The findings indicate that IBL is not only effective in promoting critical thinking but also fosters a more engaging and motivating learning environment.

The reviewed literature underscores the positive impact of IBL on the critical thinking abilities of elementary students. Engaging in inquiry-based activities allows students to actively participate in their learning process, which is essential for developing essential skills such as analysis, evaluation, and problem-solving. This aligns with contemporary educational goals, which emphasize the importance of equipping students with abilities that extend beyond rote memorization.

In addition to enhancing critical thinking skills, the review highlights the vital role of motivation and engagement as key factors in the successful implementation of IBL. Students who are actively engaged in the learning process are more likely to take ownership of their education, leading to deeper understanding and retention of knowledge. This is particularly relevant in the context of diverse classrooms, such as those found at SDN 2 Alur Dua Mas, where catering to different learning needs and backgrounds can significantly enhance educational outcomes.

In conclusion, the adoption of inquiry-based learning strategies holds great promise for educators seeking to foster critical thinkers in the classroom. By encouraging students to ask questions, explore real-world issues, and collaborate with their peers, teachers can create an enriching learning environment that promotes not only critical thinking skills but also lifelong learning. As educational reforms continue to emphasize the importance of active learning methodologies, it is crucial for educators to embrace IBL and adapt their teaching practices accordingly to prepare students for the complexities of a rapidly changing world.

The insights gained from this review suggest further research directions, particularly regarding culturally relevant applications of IBL in Indonesian classrooms and the long-term impact of these methods on student outcomes. Addressing these areas will contribute to a more nuanced understanding of effective teaching strategies that support critical thinking in diverse educational settings.

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