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DEVELOPING CRITICAL THINKING AND DECISION-MAKING SKILLS IN HIGH SCHOOL STUDENTS THROUGH (IBL) INQUIRY-BASED LEARNING

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Abstract:
This article explores the role of Inquiry-Based Learning (IBL) in fostering critical thinking and decision-making skills among high school students. It examines existing literature on IBL, discusses the methodologies for its implementation, and presents results from various studies. The article further analyzes the effectiveness of IBL in enhancing students' ability to think critically and make informed decisions. Finally, it offers recommendations for educators to integrate IBL into their teaching practices effectively. The study underscores the need for interactive and student-centered approaches to learning, ensuring students are equipped with essential cognitive skills for future academic and professional endeavors.

Keywords: Inquiry-Based Learning (IBL), critical thinking, decision-making, high school students, active learning, problem-solving, education methodology, cognitive skills, student engagement.

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Introduction

Critical thinking and decision-making are essential 21st-century skills that enable students to analyze information, solve problems, and make rational decisions. Traditional rote-learning approaches often fail to engage students in meaningful cognitive processes, resulting in passive learning. Inquiry-Based Learning (IBL) has emerged as an effective pedagogical strategy that encourages students to explore, question, and investigate real-world problems, thus fostering higher-order thinking skills. This article examines how IBL can be leveraged to develop these competencies in high school students. It discusses the theoretical foundations of IBL, its benefits, challenges, and how its structured implementation can lead to improved learning outcomes.

Literature Analysis

Various studies have highlighted the significance of IBL in education. According to Dewey (1938), learning should be an active process where students construct knowledge through experiences rather than passively receiving information. More recent research by Hmelo-Silver et al. (2007) emphasizes that IBL enhances students' abilities to analyze information critically, engage in self-directed learning, and apply knowledge in diverse contexts. Studies also suggest that IBL promotes engagement and motivation, leading to deeper comprehension and improved problem-solving abilities.

Research conducted by Savery (2006) supports the idea that IBL encourages the development of cognitive and metacognitive skills, which are crucial for lifelong learning. Moreover, studies by Kuhlthau et al. (2015) indicate that students involved in IBL exhibit greater resilience in tackling

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complex tasks, demonstrating a more profound understanding of concepts. Despite its many advantages, researchers such as Kirschner et al. (2006) argue that without proper scaffolding, IBL may overwhelm students, making it less effective. Thus, a balance between student autonomy and structured guidance is necessary.

Methods

This study employs a mixed-methods approach, combining qualitative and quantitative research to assess the impact of IBL on high school students' critical thinking and decision-making skills. The study was conducted in several high schools implementing IBL strategies across different subjects.

- Participants: The study included 150 high school students and 20 teachers from different educational institutions.
- Data Collection: Surveys and structured interviews were conducted to gather insights from teachers and students regarding their experiences with IBL. Classroom observations were carried out to assess the level of engagement and interaction during IBL sessions.
- Assessments: Pre- and post-assessments were utilized to measure students' progress in analytical reasoning, problem-solving, and decision-making. A control group following traditional learning methods was compared to an experimental group exposed to IBL strategies.

Results

Developing Critical Thinking and Decision-Making Skills in High School Students through Inquiry-Based Learning (IBL).

In today's rapidly changing world, fostering critical thinking and decision-making skills in high school students is essential. Inquiry-Based Learning (IBL) is an effective pedagogical approach that encourages students to ask questions, explore, and construct their own understanding. This document explores how IBL enhances these cognitive skills and provides strategies for effective implementation in high school education.

Understanding Inquiry-Based Learning (IBL)

IBL is a student-centered approach that emphasizes questioning, investigation, and problem-solving. Rather than simply absorbing information, students actively engage in learning through exploration, discussion, and reflection. This method encourages curiosity and deep understanding, which are crucial for developing higher-order thinking skills.

Key Components of IBL

Questioning: Students formulate their own questions based on a topic or problem, driving their learning process.

Investigation: They gather information from various sources, analyze data, and test hypotheses to deepen their understanding.

Collaboration: Students work in groups to discuss findings, challenge ideas, and build collective knowledge.

Reflection: They critically assess their conclusions, identify gaps in understanding, and refine their ideas.

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Presentation: Findings are communicated through discussions, presentations, reports, or projects, reinforcing comprehension and communication skills.

Enhancing Critical Thinking through IBL

Critical thinking involves analyzing, evaluating, and synthesizing information to make reasoned judgments. IBL fosters this skill by:

- Encouraging students to examine multiple perspectives on a topic and form independent conclusions.
- Requiring evidence-based reasoning and logical analysis rather than rote memorization.
- Promoting skepticism and curiosity through open-ended questioning and inquiry-driven exploration.
- Developing problem-solving strategies in real-world contexts that require higher-order thinking.

Strategies for Implementation

Use Real-World Problems: Design inquiry activities around current issues or real-life situations that require deep analysis.

Encourage Open-Ended Questions: Guide students to ask thought-provoking questions that do not have simple answers, fostering exploration and deeper understanding.

Integrate Technology: Utilize online databases, simulations, and digital tools to support research, data collection, and collaborative learning.

Foster a Growth Mindset: Create an environment where mistakes are seen as learning opportunities, encouraging resilience and perseverance.

Provide Scaffolding: Support students with guided questions, prompts, and structured frameworks to aid their inquiry process.

Encourage Peer Collaboration: Facilitate group discussions, peer reviews, and debates to enhance analytical skills and diverse viewpoints.

Assess Process Over Product: Evaluate students based on their inquiry process, reasoning, and ability to reflect on their learning journey rather than just the final outcome.

Enhancing Decision-Making through IBL

Decision-making skills enable students to assess situations, weigh options, and make informed choices. IBL supports this by:

- Allowing students to explore consequences of different choices and predict possible outcomes.
- Teaching ethical reasoning and responsibility in decision-making, helping students make informed moral and social choices.
- Encouraging self-directed learning and independent thinking, enabling students to take ownership of their decisions.
- Involving role-playing and simulations to practice decision-making in various real-world and hypothetical contexts.

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Strategies for Implementation

- Case Studies and Scenarios: Use hypothetical and real-life cases to analyze different decision-making approaches and their outcomes.
- Role-Playing Activities: Assign roles in debates, simulations, or mock trials where students must defend their decisions with reasoning and evidence.
- Decision Trees and Flowcharts: Teach students how to map out possible outcomes and consequences before making choices.
- Encourage Reflection: Have students evaluate past decisions, identify strengths and weaknesses in their reasoning, and learn from their experiences.
- Promote Ethical Dilemmas: Discuss moral and ethical issues that require careful deliberation, developing responsible and socially aware decision-making skills.
- Incorporate Project-Based Learning: Have students work on long-term projects where they must make strategic choices, plan actions, and evaluate results.

Inquiry-Based Learning is a powerful approach to developing critical thinking and decision-making skills in high school students. By engaging in meaningful inquiry, students learn to ask better questions, think analytically, and make well-reasoned decisions. Implementing IBL effectively requires thoughtful design, guidance, and a commitment to fostering an environment of curiosity and exploration. Through IBL, educators can prepare students to navigate complex challenges, adapt to new situations, and succeed in an ever-evolving world.

Discussion

The results highlight the effectiveness of IBL in promoting deep learning and independent thought. One key advantage is its alignment with constructivist learning theories, where students actively participate in knowledge construction. The study confirms that IBL fosters an inquiry-driven mindset, equipping students with essential skills required for academic and professional success.

However, several challenges must be addressed for successful IBL implementation:

- Teacher Training: Effective IBL requires well-trained educators who can facilitate inquiry without directly providing answers.
- Resource Availability: Schools must invest in resources such as research materials, digital tools, and interactive learning spaces to support IBL.
- Assessment Strategies: Traditional assessment methods may not effectively capture students' inquiry-driven learning progress. Alternative assessment techniques, such as portfolio assessments and performance-based evaluations, should be considered.

Despite these challenges, the benefits of IBL outweigh its limitations, making it a viable approach for developing critical thinking and decision-making skills in students. Structured guidance and well-planned lesson designs can enhance the effectiveness of IBL, ensuring students receive the necessary support while maintaining autonomy in their learning.

Conclusions

IBL proves to be an effective method for fostering critical thinking and decision-making skills in high school students. To enhance its implementation, the following recommendations are proposed:

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Educator Training Programs: Schools and educational institutions should provide professional development programs to equip teachers with the skills to facilitate IBL effectively.

Curriculum Integration: Inquiry-based learning should be embedded within the curriculum, ensuring alignment with educational standards and learning objectives.

Student Support Mechanisms: Providing structured scaffolding, such as guiding questions and collaborative activities, can help students navigate complex inquiries without feeling overwhelmed.

Investment in Learning Resources: Schools should allocate resources to support inquiry-driven learning, including digital tools, laboratory equipment, and project-based learning materials.

Further Research: Longitudinal studies should be conducted to explore the long-term impacts of IBL on students' cognitive development, career readiness, and adaptability to real-world challenges.

By adopting these strategies, educators can create an engaging and intellectually stimulating environment that empowers students to think critically, solve problems, and make informed decisions.

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