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The Relevance of Pragmatism-Based Teaching Methods in Optimizing Information Processing in Primary School Students

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ABSTRACT

Education is no longer seen merely as a transmission of knowledge from teachers to students, but as an interactive and dynamic process in which students are positioned as active learners. Progressive teaching methods rooted in the philosophy of pragmatism emphasize experiential learning, contextual engagement, and democratic classroom practices. These principles are strongly aligned with Indonesia's "Merdeka Curriculum", which promotes learner autonomy and interest-based education. Furthermore, understanding how students process information through attention, encoding, storage, and retrieval is central to developing effective instructional strategies. This article discusses the theoretical foundations of pragmatism in teaching, practical applications in primary education, challenges in implementation, and how information processing theory informs and optimizes these methods to enhance students' critical thinking and creativity.

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1. INTRODUCTION

Modern education is founded on the idea that students are not passive recipients of knowledge but active participants in constructing their own understanding. John Dewey, a prominent pragmatist philosopher, emphasized that education must be rooted in real-life experiences and guided by democratic values (Dewey, 1938). The relevance of Dewey's ideas remains evident in today's classrooms, particularly with the implementation of Indonesia's Merdeka Curriculum, which allows students to explore content based on their individual needs and interests (Ministry of Education, 2022).

In parallel, the information processing theory provides a cognitive framework to understand how learners absorb, store, and retrieve information. Atkinson and Shiffrin's (1968) model highlights the importance of attention, encoding, and memory systems in the learning process. By integrating pragmatism-based teaching with cognitive learning theories, educators can foster meaningful and engaging learning environments.

1.1 Pragmatist Teaching in Modern Education

Pragmatism emphasizes learning by doing, reflection, and problem-solving. It focuses on the learner's active involvement and encourages real-world relevance in curriculum delivery (Kolb, 1984). This approach can be manifested in three main instructional strategies:

1.1.1 Problem-Based Learning (PBL)

Problem-Based Learning involves presenting students with real-life problems and guiding them to discover solutions collaboratively. Barrows (1984) asserts that PBL promotes critical thinking, self-directed learning, and teamwork. In primary school settings, PBL activities help students contextualize abstract concepts, making learning more meaningful and memorable.

1.1.2 Project-Based Learning (PjBL)

Project-Based Learning requires students to engage in extended inquiry and produce tangible outcomes. According to Bell (2010), PjBL enables deep learning by integrating knowledge across disciplines and promoting autonomy and creativity. Projects such as community-based environmental studies or school-wide campaigns allow students to apply academic knowledge in authentic contexts.

1.2 Contextual Learning

Contextual learning connects classroom content with real-life experiences, making learning more relevant and easier to internalize. Johnson (2002) argues that when learning is placed in context, students are more motivated and better able to recall and apply knowledge.

1.3 Challenges in Implementation

Despite its advantages, pragmatism-based teaching faces several challenges:

1. **Teacher Readiness**: Many educators are still unfamiliar with progressive pedagogy and may require continuous professional development.
2. **Resource Limitations**: Implementing hands-on and project-based activities often requires materials, infrastructure, and time that are not available in all schools.
3. **Assessment Systems**: Traditional assessments may not adequately capture the diverse learning outcomes of experiential and collaborative learning models (Darling-Hammond et al., 2020).

1.4 Information Processing Theory in Education

The information processing model, introduced by Atkinson and Shiffrin (1968), explains how learners process input through sequential cognitive stages:

1.4.1 Attention

Selective attention is the first and crucial step. Learners must focus on relevant stimuli while ignoring distractions. In classrooms, engaging materials and interactive strategies can enhance attention span (Willingham, 2009).

1.4.2 Encoding

Encoding refers to the transformation of sensory input into a format that can be stored in memory. Effective teaching involves using visual aids, meaningful repetition, and linking new information to prior knowledge (Craik & Lockhart, 1972).

1.4.3 Storage

Information is temporarily held in short-term memory and, through rehearsal or meaningful learning, transferred to long-term memory. The working memory's limited capacity (Miller, 1956) necessitates chunking and scaffolding strategies in teaching.

1.4.4 Retrieval

Retrieval is the process of accessing stored information when needed. Retrieval cues, practice, and contextual similarities can improve this process (Baddeley, 1997). Active recall practices such as quizzes and peer teaching enhance long-term retention.

1.4.5 Integration of Pragmatism and Cognitive Theory

Combining pragmatist pedagogy with cognitive insights allows educators to design instruction that is both engaging and brain-compatible. For example, PBL and PjBL encourage attention and meaningful encoding by making tasks relevant. Reflection activities strengthen memory storage, and authentic assessments simulate retrieval in real-life situations.

2. CONCLUSIONS

Pragmatism-based teaching methods, when informed by cognitive theories of information processing, offer a powerful framework for enhancing student learning in primary schools. These approaches not only foster critical and creative thinking but also align with contemporary educational demands. Moving forward, teacher training, curriculum flexibility, and adaptive assessment tools will be key to maximizing the potential of this integrative approach.

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