



The Effectiveness of CFL Learning Model to Improve Junior High School Students' Problem-Solving Skills

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ABSTRACT

Objective: Problem-solving skills are essential for students because they help develop logical, critical, and systematic thinking necessary for addressing challenges in both academic and real-life situations. These abilities involve several cognitive processes, including identifying problems, analyzing situations, exploring possible solutions, making informed decisions, and evaluating outcomes. Enhancing these skills is essential to prepare students to face complex situations independently and confidently. **This study aims to describe the effectiveness of the CFL (Collaborative Flipped Learning) learning model in improving students' problem-solving skills. Method:** This research employed a quantitative experimental approach using a one-group pretest-posttest design. Students were assessed before and after the implementation of the CFL model to measure the improvement in their problem-solving skills. **Result:** The findings from the experiments indicated that the CFL learning model significantly enhanced students' problem-solving skills. The results show that students marked an improvement in recognizing and resolving problems more efficiently after participating in learning activities based on the CFL model. **Novelty:** The novelty of this research lies in the application of the CFL learning model specifically to the topic of temperature and heat at the junior high school level to enhance problem-solving skills. This focus has not been widely explored and offers new insights into effective science education strategies to enhance students' problem-solving skills.

INTRODUCTION

The standard learning paradigm is generally centered on competition to achieve high grades, leading educators often unconsciously to teach and train students to compete rather than to collaborate. A competitive mindset can only enhance students' cognitive abilities, which in turn may prevent them from engaging in collaboration. This contradicts the requirements of the 21st century, where people live in a tech-saturated environment with easy access to information and emerging methods of communication and collaboration. Therefore, to support success in the digital era, it is essential to develop a skill set based on digital-era competencies, including cooperation, communication, problem-solving, and critical thinking (Prahani et al., 2024; Saphira et al., 2022). The ability to solve problems is one of the most important learning objectives that must be highlighted.

Skills for the 21st century are crucial in education, enabling students to address future challenges through innovative thinking and idea generation from diverse sources, thereby staying current with technological advancements. Education 4.0 has emerged as a result of the Industrial Revolution 4.0, which has also heightened the demand for innovative teaching models and techniques that utilize information and communication

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