



Application of the STEAM Approach in Physics Education in Indonesia: as an Initiative in Realizing the Sustainable Development Goals

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ABSTRACT

Objective: The research aims to study the implementation of the STEAM approach in learning physics in Indonesia. **Method:** The method applied is a library study or literature review. This involves analyzing articles related to the STEAM approach in physics education in Indonesia, specifically those published between 2019 and 2023.

Results: Findings reveal that the application of the STEAM approach in learning physics in Indonesia is relatively low during this period. Teachers encounter considerable challenges in effectively applying this approach. However, there are instances of successful research that demonstrate the effective use of the STEAM method to achieve desirable educational outcomes. **Novelty:** The research offers valuable new insights into the application of the STEAM approach in physics learning in Indonesia and connects these insights to the larger initiative of achieving the Sustainable Development Goals (SDGs). Future studies could investigate the relationship between the implementation of the STEAM approach in physics education and the progress towards achieving SDG goals through various educational initiatives. This exploration could help identify effective strategies for integrating STEAM principles into physics education and further contribute to sustainable development in the region.

INTRODUCTION

Education is an essential aspect of a nation's progress. If humans receive education, they can develop themselves ultimately regarding their scientific potential. Through education, a nation can improve the standard of living of all citizens and build the dignity of the state and nation. Therefore, the government seeks to provide serious attention in an effort to overcome various problems in the field of education, starting from elementary, secondary, and higher education levels (Pristiwanti et al., 2022).

Current education has placed holistic and multidisciplinary learning as the primary focus (Wahyuni et al., 2023). This is through the development of the independent curriculum, which aims to produce graduates who have skills and competencies, which is one of the courses that plays an important role in developing students' abilities and understanding of the world around them (Satriawan, 2017). Education also has its role in responding to advances in science and technology and the increasingly rapid and complex flow of globalization in the 21st century (Maulidiansy et al., 2023).

The 21st century presents complex challenges that can be addressed through education. By providing effective education, we can prepare the younger generation to become graduates capable of competing with technology in today's world (Asrizal et al., 2018). Consequently, learning in the 21st century requires educators to possess creativity and innovation in their teaching methods (Khasanah et al., 2024). Through education, the next generation can develop new patterns of thinking, skills, values, and attitudes that will enable them to create positive change and work towards a sustainable world

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