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Applied Research of Integrating Science History into Elementary School Science and Teaching

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Abstract

The history of science holds significant value in primary school science education, facilitating the formation of students' core scientific literacy. Integrating it into big ideas teaching promotes the development of students' diverse perspectives, thinking, and methodologies. Current research primarily focuses on junior high school, with relatively few studies on primary school science teaching cases. Therefore, this study analyzes the integration of the history of science in primary school science education, employing methods such as literature review, case analysis, and classroom observation. Taking the teaching of "Energy" as an example, with the aid of an evaluation form and Flanders' Interaction Analysis System, six high-quality cases were observed and recorded. The study found that the cases were designed to be diverse and enriched, implemented rigorously and engagingly, and evaluated with high degrees of implementation. Based on these findings, principles, strategies, and evaluation methods for integration are summarized, emphasizing principles such as value prioritization and gradual progress, paying attention to the application of the HPS teaching method, and analyzing teacher-student interaction effects according to teaching objectives to provide assistance for subsequent research and frontline teachers.

Keywords: Integration of History of Science, Primary School Science Education, Big Ideas Teaching, Teaching Case Analysis, Educational Value