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Analysis of Elementary School Students' Scientific Literacy Skills on the Topic of Animal Life Cycles

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ABSTRACT
The mastery of scientific literacy is a critical competency in 21st-century education, enabling students to apply scientific knowledge in solving real-world problems. However, evidence shows that elementary school students in Indonesia generally achieve low levels of scientific literacy, particularly in conceptual reasoning and the application of scientific evidence. This study aimed to analyze the scientific literacy skills of Grade IV students at UPTD SD Negeri 2 Peusangan Siblah Krueng, focusing on three key indicators: identifying scientific evidence, explaining scientific phenomena, and applying scientific evidence in daily life. Employing a descriptive qualitative approach with an intrinsic case study design, data were collected from 25 students through a 15-item test developed based on the Programme for International Student Assessment framework. The responses were analyzed using content analysis to categorize ability levels. The results indicated that 44% of students were in the low category, 40% in the high category, and 16% in the moderate category. Students performed best in identifying scientific evidence, followed by applying evidence in real-life contexts, while the lowest achievement was in explaining phenomena, reflecting limited conceptual understanding and reasoning ability. These findings highlight the need for transforming science instruction from content delivery to experiential, inquiry-based, and problem-based learning integrated with real-life contexts and technology. Such pedagogical reforms are expected to foster deeper conceptual mastery, critical thinking, and practical application of scientific knowledge, thereby contributing to both the theoretical development of science education and practical efforts to enhance 21st-century competencies at the primary school level.

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