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Science Literacy Profile of Junior High School Students on Context, Competencies, and Knowledge

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ABSTRACT

Objective: This study's preliminary goal is to describe junior high school students' proficiency in scientific literacy. It is based on exams that use questions that measure a student's proficiency in scientific literacy, adhering to the guidelines established by the Programme for International Student Assessment (PISA). **Method:** The research was a quantitative descriptive analysis. It used a list of 20 questions created to evaluate students' proficiency with scientific literacy using a set of predetermined indicators. Purposive sampling was used to gather the data, and 102 students were chosen as a sample from Junior High School 2 Sukorejo. **Results:** Based on research findings, 19 of the 102 students meet the criteria for scientific literacy skill level 4, the highest level. Additionally, 38 students meet the criteria for level 3 of scientific literacy, which needs to be improved. Furthermore, 45 students continue to meet the low criteria for level 2 scientific literacy skills. According to the findings of this study, future research efforts and increased attention from relevant teachers are required to concentrate more on improving students' scientific literacy skills. **Novelty:** The novelty of this research explores students' scientific literacy levels using a science literacy test focusing on context, competencies, and knowledge. It provides a comprehensive understanding of students' scientific literacy skills, moving beyond quantitative percentages. The detailed explanation will be valuable for future research and provide deeper insights into the subject matter.

INTRODUCTION

The ability to use language for reasoning is the current definition of literacy. One of the most critical educational concerns in the twenty-first century is literacy, as technology advances at a breakneck pace. High scientific literacy populations enable nations to make science, technology, and social policy decisions that are appropriate. PISA specifically addresses several dimensions or areas of measurement related to scientific literacy. Wahab (2023) stated that scientific literacy is considered an ability that students must have in the 21st era. Scientific literacy is essential in solving scientific problems (Pakpahan, 2022). This is because scientific literacy can help students understand and analyze problems, allowing them to find solutions using the scientific knowledge they have (Mellyzar, 2022). To solve problems in daily life, students need to be able to think critically, work with others, communicate their ideas clearly, and solve problems creatively. If students are scientifically literate, they can learn these skills (Hudha et al., 2023). Scientific literacy is critical to preparing the provision of skills that must be possessed by students from elementary school to university levels, which include critical thinking, creative, collaborative, and communication skills (Kurniasari et al., 2023). In addition, scientific literacy has the potential to form people who can compete competitively, can reason creatively. They can solve problems and master technology, which helps them adapt well to rapid changes and developments in the modern world (Nofiana & Julianto, 2018).

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