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Identify Student's Scientific Reasoning Skill in Straight Motion Material

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ABSTRACT

Objective: This study aims to identify the level of scientific reasoning skills of students. **Method:** The type of research used is descriptive quantitative. The subjects of this study were 10th-grade students at 1st State SHS Menganti. The test given is five questions, each of which includes four indicators of scientific reasoning skills: theoretical reasoning, correlational reasoning, proportional reasoning, and probabilistic reasoning. The research method used is a preliminary study through reviews, determining research objectives, developing research instruments, validating instruments, collecting data, and analyzing and interpreting data. **Results:** The results of the research conducted show that the level of students' scientific reasoning skills in the theoretical reasoning pattern is quite good because they can interpret the existing theory with the data on the problem. Students' scientific reasoning skills in the correlational reasoning pattern still need to improve because only one student can answer questions at level 5. Students' scientific reasoning skills in the proportional reasoning pattern still need to improve because only one student's answer reaches the level 4 Ratio (R). The students' scientific reasoning skills in the probabilistic reasoning pattern still need to improve because only three are at level 3. **Novelty:** With this research, it is hoped to provide information about the importance of training students' scientific reasoning skills. Scientific reasoning skills are essential and related to science education (not only in scientific contexts but also in everyday life).

INTRODUCTION

Based on the 2022 public education report for the public high school level in the province of East Java states that the results achieved by students show that the literacy skills of most of the participants have reached the minimum competency limit for reading but need to encourage more students to become proficient. Meanwhile, the ability to count shows that less than 50% of students have reached the minimum competency limit for arithmetic. This is undoubtedly related to the quality of the participant's learning process, where the teacher's reflection index is still classified as passive, namely efforts to improve the quality of learning sporadically only to complete assignments (Alexandra et al., 2019). The teacher uses an iterative method to carry out learning, and there is no visible reflective process. Based on the Program for International Student Assessment (PISA) is a three-year survey of 15-year-old students that assesses how much they have acquired the critical knowledge and skills essential for full participation in society. The assessment focuses on proficiency in reading, mathematics, science, and the innovative domain (in 2018, the innovative domain is global competence) and the well-being of students. Indonesian students score lower than the OECD average in reading, math, and science (Ding, 2014). About 40% of students in Indonesia achieve Level 2 or higher in science (OECD average: 78%). Learners can identify correct explanations for familiar scientific phenomena and can use that knowledge to identify, in simple cases, whether a conclusion is valid based on the data.

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