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Analysis of Student Scientific Argumentation Skills on Static Fluid Topics

The purpose of this study is to identify the scientific argumentation skills of high school students on the topic of static fluid. This quantitative research with survey design used a sample of 125 students in one of the high schools in East Java, Indonesia. This research data was obtained through the Scientific Argumentation Ability Test (Cronbarch's Alpha reliability of 0.66) in the form of 5 essay questions with 1-3 ordinal scale scoring. Descriptive statistics were used to analyze the research data. The results showed that the average scientific argumentation ability of students was 13.98 with level 3. Based on the indicators of scientific argumentation skills, students have an order from highest to lowest, respectively Data, Warrant, Claim, Rebuttal and Backing. Archimedes' Law is the easiest static fluid sub chapter for students followed by Hydrostatic Pressure and Pascal's Law. Scientific argumentation in physics learning activities allows students to engage in group discussions, express different perspectives, demonstrate their conceptual understanding, practical skills and scientific reasoning abilities. Therefore, it is recommended that appropriate learning that can support the growth of these abilities such as project-based learning collaborated with Science, Technology, Engineering, Art, and Mathematics (STEAM).

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