Profile of the Interpreting Ability of Students on Static Fluid

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Keywords:	ABSTRACT
Interpreting, Ability, Static Fluid	*The purpose of this study was to get a description of the students' ability to interpret the static fluid material. This research was a quantitative descriptive study and the sample was taken by purposive sampling technique with a total sample of 26 students at one of the Madrasah Aliyah in the city of Singkawang. To achieve this goal, students had filled in questions about static fluids in a multiple-choice test. The results of this study were a quantitative description of the student's ability to interpret the static fluid material. The interpretive ability category was adapted from the n-gain category. The results showed that the category of students' ability to interpret the concept of hydrostatic pressure and Archimedes principle was in the high category with a percentage of 88% and on the Pascal principle it was categorized as low with a percentage of 19%. The results of this study can be a reference for future researchers to improve aspects of understanding interpreting categories in students.*

INTRODUCTION

Physics is one of the natural sciences that has contributed to the development of technology (Amir, Muris, & Arsyad, 2015: 202). Physics is a collection of systematic discoveries in the form of facts, principles, laws, formulas, theories, models, and concepts (Sutrisno, 2006: 3). Static fluids are one of the concepts studied in physics. Static fluids consist of several laws and principles, three of which are the law of hydrostatic pressure, the Pascal principle, and the Archimedes principle.

The understanding aspect consists of several categories namely interpret, exemplify, classify, summarize, reference, compare and explain (Rosdianto, Murdani, & Hendra, 2017). Interpretation skills occur when students can change information from one form to another, such as pictures from words, words into pictures, numbers into words, words into numbers, musical notes into musical sounds, and the like (Anderson and Krathwohl, 2010: 106). The purpose of this study was to describe the students' ability to interpret the static fluid material. Researchers have the hope that these results can be useful for future researchers and become basic data for future research.

METHOD

This research is a quantitative descriptive study to describe the ability to interpret students on static fluid material. The population in this study were all students of class XI IPA at one of the Madrasah Aliyah in the city of Singkawang. The sampling technique used purposive sampling, amounting to 26 students. The data collection technique used in this study was a multiple-choice test. The test consists of three static fluid concepts that describe the student's ability to interpret. The distribution of static fluid concepts and the ability to interpret students can be seen in Table 1.

Table 1
Distribution of Concept and Interpreting Aspects of Students

No.	Concept	Interpreting Aspects
1	Hydrostatic Pressure	Converts graphics into words
2	Pascal Principle	Converts formulas into words
3	Archimedes Principle	Converts formulas into words

RESULTS AND DISCUSSION

To describe the students' ability to interpret the static fluid material, the interpretive ability category was adapted from the n-gain criteria as shown in Table 2.

Table 2
Category of Interpreting Aspect

Percentage of Interpreting Aspects	Category
$0{,}0\% \leq Interpret \leq 29\%$	Low
$30\% \leq Interpret \leq 69\%$	Moderate
$70 \leq Interpret \leq 100\%$	High

Table 2 states the criteria for the ability to interpret students. Fig. 1 is the data on the results of students' ability to interpret the static fluid material.
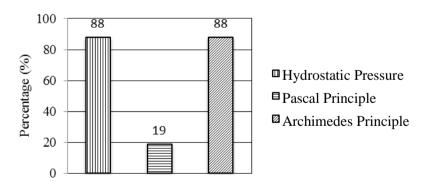

***Fig. 1** Data of the Interpreting Ability of Students on Static Fluid*

Based on Fig. 1, it appears that the students' ability to interpret the concept of hydrostatic pressure and the Archimedes principle is in the high category and the concept on the Pascal principle is in a low category. In the concept of hydrostatic pressure, the measured interpretive ability is to change the graph into words with a percentage of 88% in the high category, and in Pascal principle, the measured interpretive ability is to change the formula into words with a percentage of 19% in the low category. The low ability to interpret students on Pascal principle is because students change the formula incorrectly. This is following the statement of Ichtyaranisa et al. (2013: 9), namely the error of

changing the form of the formula is 4.95%, this error is due to students not understanding the concept of the item. Therefore, a learning model or method is needed that can give students the freedom to learn according to their learning styles so that the learning that occurs helps students understand concepts, especially in the aspect of interpreting (Sari & Sumarli, 2019).

CONCLUSION AND SUGGESTION

Based on the results and discussion, it can be concluded that the category of students' ability to interpret the concept of hydrostatic pressure and Archimedes principle was in the high category with a percentage of 88% and Pascal principle in the low category with a percentage of 19%. It is hoped that the results of this study can be used as a reference for further research and can improve students' interpretive skills.

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