



## **Students' Difficulties in Answering PISA-Like Problems in the Context of North Sumatra at SMP Xaverius 2 Palembang**

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**Abstract:** At present students often have difficulty answering and solving questions, especially international standard questions in the form of PISA. The existence of a difficulty faced by students is a lack of interest in reading so that literacy in Indonesia is very low, especially on the results of the PISA test. The purpose of this study was to find out the difficulties experienced by students in answering PISA questions like the context of North Sumatra, the factors that influence difficulties in answering questions generally lie in the use of formulas, understanding or the ability to digest the language in the texts of PISA questions. This type of research is descriptive research that aims to identify and describe the difficulties experienced by students in answering PISA Like questions in the context of North Sumatra. The results of this study indicate that in answering PISA questions students experience difficulties in understanding the questions, changing and solving real problems in the form of science, namely physics, and interpreting physics solutions in real situations. The results show that difficulties in understanding questions and changing real problems into physics are more dominant than difficulties in PISA biology questions.

**Keywords:** student difficulties, pisa, pisa like the context of north sumatra

### **▪ INTRODUCTION**

Education is the beginning of every human being can plan life for the future. Likewise in every country, education is mandatory to produce Human Resources (HR) that can compete with other countries (Jerito Pereira et al, 2022). Human resources with character have a nation with character that advances a country (I Komang Gde Bendesa, 2014). However, many human resources in Indonesia have limited knowledge. One of the causes of limited human resources is a lack of interest in reading so that knowledge is limited (Warul Walidin, 2016). Limited knowledge can be overcome by the learning process and intellectual growth from reading. Reading in Indonesia is very apprehensive, influenced by the limited availability of reading material, which is a problem in Indonesia, namely low interest in reading (Rina Setyawatira, 2009). Low reading interest in 2009 Indonesia was ranked 64th. There were 65 countries participating in the PISA test (Pangesti Wiedarti, GLS Ministry of Education and Culture).

PISA is an international assessment program to measure achievement for children aged 15 years in the areas of math, science and literacy skills. Assessments conducted by PISA are carried out every 3 (three) years with a focus on a country's education (La Hewi & Muh. Shaleh, 2020). PISA aims to assist countries in preparing human resources so they can have the expected competencies in the international market (Indah Pratiwi, 2019). Then another goal of the program for international student assessment (PISA) is to assess the extent to which students in OECD countries (and other countries) have acquired the right skills in reading, mathematics and science to make a significant contribution to their society (Wilkens, 2011). One of the PISA assessments used is

scientific literacy. The average scientific literacy, especially physics literacy experienced by junior high school students is still relatively low. Physics literacy is essential for an effective life in the modern era of science and technology. Given the application of physics literacy in industry and other fields, every student needs to be given the opportunity to acquire several concepts, principles and skills, especially in answering PISA questions (Nurhasanah et al, 2020).

In answering PISA questions like North Sumatra students experience difficulties when dealing with complex problems. On the other hand students are able to answer simple quantitative problems but lack the ability to solve more complex problems (Rismatul Azizah, 2015). This study aims to describe students' difficulties in solving PISA questions like North Sumatra at SMP Xaverius 2 Palembang.

## ▪ **METHOD**

The research used a descriptive research method which aimed to describe the difficulties of class IX students of SMP Xaverius 2 Palembang in answering PISA questions Like the North Sumatra Context. The subjects of this study were 4 students of class IX SMP Xaverius 2 Palembang from 18 July to 01 August 2022. Students as The research subjects were selected based on the results of the PISA test like the context of North Sumatra and the students who were selected were the students who had the most difficulties in solving PISA questions like the context of North Sumatra. Researchers used two data collection techniques, namely tests and interviews. The written test is in the form of 17 PISA questions Like the North Sumatra Context. Interviews were conducted after the test was carried out. Researchers analyzed the data with steps that were guided by the steps of qualitative data analysis according to Anggoro (2007: 6.19), namely: 1) Classifying data obtained from the results of tests and interviews. 2) Read the data and categorize it in the following table

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1. Grouping the data obtained from the results of tests and interviews.
2. Read the data and categorize it in the following table

**Table 1**

<b>Difficulty category</b>	<b>Completion</b>
understanding	<ul style="list-style-type: none"> <li>- Students are not able to interpret what is asked in PISA questions like North Sumatra to do</li> <li>- Students do not understand the keywords used in PISA questions like North Sumatra, especially Biology questions</li> </ul>

	<ul style="list-style-type: none"> <li>- Students are unable to distinguish information so they ignore information that is in accordance with reality</li> <li>- Students are not able to understand the concepts on PISA questions like North Sumatra, especially the concept of Physics</li> </ul>
Change	<ul style="list-style-type: none"> <li>- Students tend to directly use physics formulas without analyzing whether it is necessary or not</li> <li>- Student answers only refer to real situations without taking the perspective of science, namely Biology and Physics</li> <li>- Students use physics procedures that are not relevant to the problem</li> </ul>
Process Science	<ul style="list-style-type: none"> <li>- Difficulties in solving the concept of energy, vibration, waves and motion in objects.</li> <li>- Difficulty in using the formula equation used in PISA questions like North Sumatra</li> <li>- Students use the correct procedure but students do not complete it.</li> </ul>
Conclude	<ul style="list-style-type: none"> <li>- Students are not able to interpret correctly so that difficulties in answering PISA questions like North Sumatra can be seen from unrealistic/inappropriate answers.</li> </ul>

4. Determine the difficulties experienced by students in answering PISA questions like the context of North Sumatra
5. Presenting data in a narrative manner

## ▪ **RESULT AND DISCUSSION**

The test questions being tested consisted of 17 PISA items like the context of North Sumatra. For question number 1, it is about PISA Like Biology, material about Environmental Pollution, namely water hyacinth on Lake Toba, question number 2 is about PISA like Physics, material about vibrations and waves, namely the ray boat, questions number 3 and 4 are about PISA like Physics, material about Vibrations and waves, namely finding a wake-up ship using MultiBeam EchoSounder, question number 5 is a PISA like Biology question, material about the classification of living things, namely the Rasbora Tobana fish, question number 6 is a PISA like Fiska problem, material about the motion of objects, namely Sibe-bea hills, question number 7, 9 and 10 are PISA questions like Physics, material about the concept of energy, namely Sibe-bea hills, questions number 11, 12 and 13 are PISA questions like Biology, material about gene diversity, species, ecosystems, namely the roof of the Siwaluh Jabu house, question number 14 and 15a is about PISA like Biology material about the Sense of Sight and Optical tools, namely the process of color vision on house ornaments Mah customary Siwaluh Jabu, questions number 16 and 17 are PISA questions like Physics material about

Motion on objects, namely Fahombo stone jumping from the Nias tribe. In the following, the researcher concludes the explanation on the analysis of test results and analysis of interview results using tables.

**Table 2**

Name	PISA questions like the North Sumatra context answered	PISA questions like the context of North Sumatra which are not answered
Jessica	Question number 1,2,4,5,6,7,8,9,11,12,13,14	Question number 3, 10, 15,16,17
Jose	Question number 1,2,4,5,6,7,8,9,11,12,13,14	Question number 3, 10, 15,16,17
Sherenita	Question number 1,2,4,5,6,7,8,9,10,11,12,13,14	Question number 3, 15,16,17
Willyanto	Question number 1,2,4,5,6,7,8,10,11,12,13,14,15	Question number 3, 9,16,17

Based on the table above, the most common difficulties experienced by students in answering PISA questions like the context of North Sumatra were difficulties in understanding the questions and difficulties in using the formula equations for PISA questions like the field of Physics. These results are in line with the results of Wijaya's research (2014) which states that of the four types of difficulties, difficulties in understanding questions and difficulties in converting real problems into science/mathematics forms are the most dominant than students' difficulties in processing mathematics and interpreting mathematical solutions into situations. real.

In the question section number 3, 10, 15, 16 and 17 the questions were difficult for students to do on PISA questions like the field of Physics. The variables found in the difficulty of answering PISA questions like the North Sumatra context faced by students are vibrations, waves, energy, optical devices, and motion on objects. Then efforts that can be made to overcome the problem of answering PISA questions like the local context of North Sumatra in the field of Biology and Physics are studying concepts, practicing questions, applying biology and physics.

## ▪ CONCLUSION

Based on the results of the study it can be concluded that the difficulties experienced by class IX students of SMP Xaverius 2 Palembang in answering PISA questions like the context of North Sumatra are difficulties in understanding the questions, changing real problems into biology and physics, solving biology and physics problems, using physics formula equations and conclude solutions. Difficulties in understanding questions and difficulties in converting real problems into physical form are more dominant difficulties than in solving PISA questions like North Sumatra in the local context of North Sumatra in the field of biology.

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