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Students' perception of reading and understanding mathematics textbook

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Students' perception of reading and understanding mathematics textbook

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Abstract. This study aimed to describe the students' perceptions of reading and understanding mathematics textbooks. This type of research is descriptive. Participant study consisted of 5 students in the sixth grade of Al-Fadh Islamic Elementary School Palembang. Data collection techniques in this research were questionnaire sheets to determine students' stages in reading mathematics textbooks and students' perceptions in understanding mathematics, and the interview was used to make sure their perceptions. Results of questionnaire sheets and interviews were analyzed based on stages of reading mathematics textbooks and students' perceptions in understanding mathematics as follows: (1) Reading definitions or rules, (2) Reading example problems and (3) Doing problem exercises. Results showed that: The stages that are mostly done by Islamic elementary school students Al-Fahd in reading and understanding sixth grade mathematics textbooks are category 1, namely reading definitions or rules - learning example of problems - doing exercises about 3 students with a percentage 60% while category 2 is reading definitions or rules - learning example of problems - doing exercises for student with a percentage of 20% and category 3 that learning sample questions - doing one question exercise for a student with a percentage of 20%. As for students' perceptions of understanding mathematics, the most is to understand examples of problems as many as 3 students with a percentage of 30%, understand the definition or rules of 1 student with a percentage of 20% and can do exercises about 1 student with a percentage of 20%.

Introduction

Textbooks are important tools for the promotion of specific types of curricula. They are organized purposefully, and consequently, their content and structure are very important for the promotion of a specific vision of a curriculum. It is accepted worldwide that mathematics and science textbooks have a major influence on classroom practice [1]. Textbooks are vitally important, they play a significant role in shaping teachers', students' and families' views of school subjects [1, 2]. Textbooks can be defined simply as books that are written for teaching and/or learning. *Government Regulation Number* 32 of 2013, states that textbooks are the main source of learning to achieve Basic Competence and Core Competencies [3]. In practice, examples of problem-solving are presented by the teacher, which is assigned to students to do, and what is made homework by students comes from the questions in the textbook [4]. Mathematics textbooks, as well as textbooks in general, are developed to serve a pedagogical purpose [5].

Pusat Perbukuan Depdiknas mentioned three standard aspects of mathematics textbooks, namely aspects of the material, presentation, and language [6]. In the material aspect, there are ten sub aspects, namely the completeness of the material, the accuracy of the material, reasoning and proof, problem-solving, communication, interconnection, presentation/representation, competence in the curriculum,

non-overlapping material, and contextual questions. In the presentation aspect, there are twelve sub-aspects, namely the sub-aspects of objectives, prerequisite material, technological development, hands-on activity, meaningfulness and benefits, the process of forming knowledge, encouraging students to be bound and interested in mathematics, summary, self-evaluation, and reflection, presentation can be understood by students, a collection of formulas, presentation and writing of concepts, ideas, terms, formulas, definitions, important theorems clearly, and pay attention to the code of ethics of copyright, manners, and gender. In the aspect of language, there are five sub-aspects, namely sub-aspects of the use of Indonesian language that are good and right, involving the ability to think logically, sentence structure by the level of language mastery of students, standard spelling, and communicative.

The most important aspect in a textbook is material that contains definitions, sample questions, and question exercises, these three aspects are found in elementary school mathematics textbooks [7]. Mathematical definitions are of fundamental importance in the axiomatic structure that characterizes mathematics [8]. But the fact of reading and understanding the definition students still have problems, Even when students can correctly state and explain a mathematical definition, they may not use it correctly, because they do not understand the distinction between mathematical (stipulated) and dictionary (extracted) definitions [9]. However, there have been a number of calls for teachers to instruct students on how to read mathematics [10 - 17]. Examples of problems and exercises also include important aspects in mathematics textbooks because they can measure the ability of students to understand the material in mathematics textbooks. Mathematical understanding is a very important part of the learning process of mathematics [18 - 20]. Mathematical understanding is the basis for thinking in solving mathematical problems and problems in daily life. There are several stages to determine students' perceptions in understanding mathematics, which are reading definitions, reading example problems and doing problem exercises.the importance of understanding mathematics. Based on the description above about the importance of understanding mathematics. Therefore, the writers are interested in writing about "Students' Perceptions of reading and Understanding Mathematics Textbook"

2. Method

The type of this research is descriptive research. Descriptive research is defined as research that tries to describe a phenomenon/event systematically in accordance with what it is [21]. In this study, researchers will describe the students' perceptions of reading and understanding mathematics textbooks.

This research has analyzed the perceptions of sixth-grade students at SD Islam Al-Fahd Palembang of reading and Understanding Mathematics Textbook. Thus, the descriptions and categorization of student's perceptions are the main targets of this research. To achieve these targets, the research procedure is required.

3. Result and Discussion

The research subjects were 5sixth-grade students of Al-Fadh Islamic Elementary School Palembang. Furthermore, the research subjects were interviewed and given a questionnaire containing the stages of reading a mathematics textbook & perception of "understanding mathematics". The results obtained from interviews and questionnaire sheets in the form of stages in understanding mathematics textbooks and students' perceptions in "understanding mathematics" obtained several categories.

Table 1 shows the results of the questionnaire and interview about the stages of reading a mathematics textbook, there are several categories.

Table 1. Stages of students of reading mathematics textbooks.

Category	Frequency	Percentage
Category 1	3	60%
Category 2	1	20%
Category 3	1	20%
Total	5	100%

3.1.Category 1 (Reading Definitions or Rules - Learning Example of Problems - Doing Exercises)

Figure 1. Student questionnaire category 1.

One of the interview results of students who chose category 1 of reading a mathematics textbook is Reading definitions or rules - Learning example of problems - Doing exercises

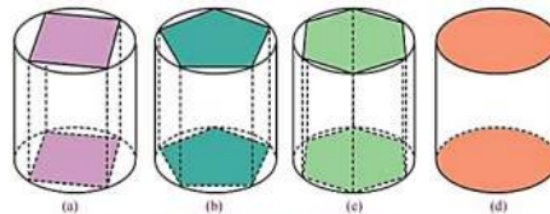| P	: When Zacky taught the tube volume material, what did you read first? The definition, example of problems or exercise?
SP1	: Definition
P	: Ok, now try to show me which is the definition?
SP1	: This one

Figure 2. Students' perception of definition (SP1).

P	: What's next?
SP1	*: Example of problems*
P	*: Ok, and the last?*
SP1	*: Exercises*
P	*: If the teacher asks you. Do you understand the volume of the tube? Zacky knows if Zacky already understands it how? Zacky understands the example of problems, you can do exercises or understand tube volume definitions?*
SP1	*: Understand the tube volume definition.*

In Category 1, in the first stage students choose to read the definitions and rules, but when students are asked to indicate whichis the definition? They still do not understand what that definition is. If observed from the statements of some students, most of them think that definitions are opening sentences on a material. In the second stage, the students choose to understand the examples of the problems and then after ward do exercises. When the student was asked about understanding mathematics, he said that he could say he understood mathematics when he understood definitions or rules.

3.2. Category 2 (Learning Example of Problems - Reading Definitions or Rules - Doing Exercises)

Figure 3. Student questionnaire category 2.

One of the interview results of students who chose category 2 of reading a mathematics textbook is a learning example of problems - Reading definitions or rules - Doing exercises.

| P	: Afran when instructed by the teacher to understand the material in this mathematics textbook. What's the first Afran understood the definition, the example of problem, or exercises?
SP2	*: Example of problem*
P	*: And then, what's next?*
SP2	*: Definitions*
P	*: In this material, which one the definitions? Could you mind to read it?*
SP2	*: Afran reads to the part in the red box in the image below)*
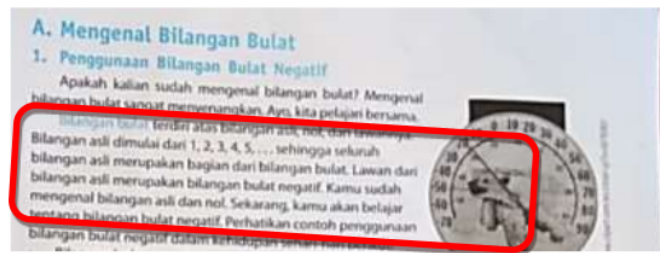
Figure 4. Students' perception about definition (SP2).

P   : *After you read the definition, what will you do?*
SP2   : *Do exercises*
P   : *Well Afran said Afran understood about what was learned meant to understand about definition, example problems, or when you can do the exercises?*
SP2   : *Example of problem*

In category 2, The first stage the student chooses to read the example of the problem first. After that, heread the definition. When asked to show a definition on the integer material, the student mentions the meaning of integers. The third stage of the students chose to do the exercises.When the student was asked about understanding mathematics, he said that he could say he understood mathematics when he understood example of problems.

3.3. Category 3 (Learning Example of Problems - Doing Exercises)

Figure 5. Student questionnaire category 3.

The results of interviews of students who chose category 3 of reading mathematics textbooks are Learning example of problems - Doing exercises

P	: When the teacher teaches about circle l, what is the first stage Sadewa do read the definition, the example of problems exercises?
SP3	: Exampleof problems
P	: After that, what's next?
SP3	: Exercises
P	: Ok, did you read the definitions?
SP3	: hmmmm... No
P	: Do you know what is definition?
SP3	: No
P	: For example Ustadzah asked, Sadewa understand yet? It means sadewa understand the definition of a circle, example problems or can do questions?
SP3	: Example problems

In category 3, the first stage of the student chooses to understand the sample questions, afterward in the second stage the students work on the exercises. During the interview, it turned out that this student asked the researcher what was the definition, because when he read a mathematics textbook he knew only examples of problems and exercises, When the student was asked about understanding mathematics, he said that he could say he understood mathematics when he understood example of problems.so far reading the definition or rules were not included in the process of his habit of reading mathematics textbooks. No wonder if elementary students don't understandthe definition, becauseeven more advanced university students of mathematics have difficulty understanding the role and use of mathematical definitions [22].

Based on the results of interviews and questionnaire sheets on the 5th perception of elementary school students of Islam VI Al-Fadh Palembang about "Understanding Mathematics" as follows:

Table 2. Students' perception of "understanding mathematics".

Category of Understanding Mathematics	Frequency	Persentage (%)
Understand about example of problems	3	60%
Do exercises	1	20%
Understand about definitions	1	20%
Total	5	100%

4. Conclusion
From the results of the questionnaire and interview, it can be concluded that the stages that are mostly done by Islamic elementary school students Al-Fahd of reading and understanding sixth grade mathematics textbooks are category 1, namely reading definitions or rules - learning example problems - doing exercises about 3 students with a percentage 60% while category 2 is reading definitions or rules - learning example problems - doing exercises for students with a percentage of 20% and category 3 that learning sample questions - doing exercises for a student with a percentage of 20%. As for students' perceptions of understanding mathematics, the most is to understand examples of problems as many as 3 students with a percentage of 30%, understand the definition or rules of 1 student with a percentage of 20% and doing exercises for a student with a percentage of 20%.

5. Acknowledgments

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