

## **Analysis of Students in Difficulty Solve Problems Two-Dimensional Figure Quadrangle**

**Andi Mulawakkan Firdaus**

*(Department of Mathematics Education, Universitas Muhammadiyah Makassar, Indonesia)*

---

**Abstract:** *This research is a descriptive study that aims to determine the difficulty of concepts, principles difficulty and skill difficulties experienced by students of SMPN 8 Makassar to solve problems, specifically about waking flat rectangle. The subject of this research was the seventh grade students of SMPN 8 Makassar in the academic year 2015/2016 consisting of 5 classes of 200 students, while research subjects were students of class VII SMPN 8 Makassar as many as 35 students. The data collection is done by providing an instrument in the form of a test which consists of 5 items essay in the classroom in order to obtain a score of each kind of level of difficulty with descriptive analysis. The results were obtained percentage score of the degree of difficulty concept was 71.43% categorized as moderate difficulty level, the difficulty level of the principles is 25.71% categorized as very low level of difficulty, the difficulty level of skill 20% categorized the degree of difficulty is very low.*

**Keywords:** *Difficulties Students, quadrangle.*

---

### **I. Introduction**

Mathematics education is taught in school education is an education path that is fundamental and necessary in order to be able to master science and technology. The realization of the importance of mathematics lessons taught learners reflected by the deployment of mathematics as a basic science for all types and levels of education. Mulyono [1] suggests that mathematics not only as a symbolic language, but also a universal language that allows people to reflect, record, and communicate ideas about the elements and quantity. Recognizing this, various attempts have been made towards improving the learning achievement. Efforts undertaken and is expected to be improved, the range was expanded and includes more basic objectives, such as improving skills, mathematical, math problem solving development especially that there are on the subject of the rectangular flat wake, improved way to learn mathematics, etc. other.

One thing to note is related to the effort to see the factors of difficulties encountered by students in solving a mathematical problem. The aim is to determine whether the children learn math aware of the ability to expect, for example, the ability of solving problems that are closely related to their daily life, for instance, if you wear a jacket, can you let go of the jacket back? You wear a jacket that already of course be released again. Removing the jacket is the reversal (inverse) of the jacket. In addition, to determine the factors associated with the business of planting and improved capabilities, such as the learning process is carried out by teachers and students, curriculum, infrastructure and others. Difficulty learning consists of two words, namely; "Difficulties" and "Learning", the dictionary of the Indonesian Department of Education [2], it is stated that "the difficulty is a difficult situation, in trouble, in distress". This means implies difficulties hard to do something that means a condition that exhibits characteristics obstacle in activity to achieve an activity, in which the difficulties referred to in this study is a significant learning difficulties such difficulty to learning activities.

Sudrajat [3] learning difficulties can be manifested in their behavior, both aspects of the psychomotor, cognitive, conative and affective. Learning difficulties in children can occur partially but can also occur in multiple or simultaneous. While, Purwanto [4] difficulty learning mathematics is also known as dyscalculia, which describes a disturbance in the central nervous system. In the study, the author examines the difficulties of learning mathematics are divided into three categories, namely: the difficulties concepts, principles difficulties, and difficulty skills.

#### **1. Difficulty Concept**

Studying the concept is the main thing in education, according to Ratna Willis Dahar in Rahmatiah, [5]: "The concepts are the building blocks concepts are the basis for higher mental processes to formulate the principles and generalizations to solve the problem. A student should know the relevant rules and regulations that are based on concepts which gained".

According to Rosser in Abdin [6] that,

"The concept is an abstraction that has a background", events or relationships that have the same attributes. While the culture in Rahmatiah [5] say that the concept is an idea or ideas that are formed by looking at the properties of the same from the random sample set.

## 2. Difficulty Principles

The principle in mathematics is often also referred to as the principle object of stating the relationship of the two objects. The object may be a fact, the concept of operations or other principles. Difficulties do math principles in particular is often also referred to difficulties in finding formulas or use an existing one. This is important, considering in studying and working on math problems using a formula is needed.

## 3. Difficulty Skills

Difficulty skills to operate numbers, usually occurs in a weak ability of students, so that difficulties and less skilled in operating numbers. This happens because in the study of the subject matter in primary schools turned out students did not master the material given. Inability in number operations and calculations are not exact, it will produce the wrong answer. One of the important capabilities and expected mastered in junior high school students is the ability to complete the rectangular flat wake. In addition to these capabilities relate to everyday life also plays a role in the control of other materials. This is important because a lot of students who have difficulty in solving problems related to the rectangular flat wake. In relation to this, the study is intended to determine the factors difficulties experienced by junior high school students of class VII in solving problems related to the rectangular flat wake.

## II. Method

This study was a descriptive study that has only one variable that is difficult to solve problems on a rectangular flat wake class VII SMPN 8 Makassar. In this study will look at how much the level of difficulty of concepts, principles difficulties, difficulties skills for students in solving problems rectangular flat wake. Subjects in this study were students of class VII SMPN 8 Makassar. The instrument of this research is mathematics achievement test on the subject of the rectangular flat wake. This test was developed by the authors to pay attention to the material that has been studied by students of class VII SMPN 8 Makassar. This test in the form of diagnostic tests in the form of essays. The steps taken in preparing this test is to notice the subject matter rectangular flat wake student has learned in class VIII, then summarized and given a description of the tests. This study only analyzed the difficulties that may occur when students complete math problems on the subject of the rectangular flat wake. The author analyzes the average on each question and then give an explanation to the students about the terms of which there is difficulty in solving math problems on the subject of the rectangular flat wake.

Techniques used in data collection is a diagnostic test. This test is used to determine the level of student difficulties in solving problems rectangular flat wake. The criteria for assessment, each question that each question are given maximum score of 10 and a minimum score of 0. In order to answer the research problems that have been formulated, then analyzing the answers of respondents to the teaching of mathematics 5 items. Selanjutnya criteria used to determine the criteria score difficulty solving rectangular flat wake in the seventh grade students of SMPN 8 Makassar using a standard proposed by Nurkancana [7], namely:

- The level of difficulty of 90% - 100% categorized the degree of difficulty is very high
- The level of difficulty of 80% - 89% categorized as a high difficulty level
- The level of difficulty of 65% - 79% categorized as moderate difficulty level
- The level of difficulty of 55% - 64% categorized low degree of difficulty
- The level of difficulty 0% - 54% categorized the degree of difficulty is very low

As for calculating the percentage for each major category of categories, using the following equation:

$$Pi = \frac{Psi}{TPi} \times 100\%$$

Information:

$Pi$  = Percentage of difficulty category to -i

$Psi$  = Difficulty students

$TPi$  = Total difficulty categories to -i

## III. Results

Descriptive analysis which will be presented consists of the results of the test difficulty solving Flat rectangular in class VII SMPN 8 Makassar. The difficulty is the difficulty of concepts, principles and difficulties skill difficulties.

### 1. Difficulty concept

From the research it can be concluded that the difficulties of the seventh grade students of SMPN 8 Makassar in solving Flat rectangular in difficulty categories contained in the concept of number 1 and number 3.

Difficulty concept for the number 1 there were 30 students who are having difficulty. To determine the percentage score difficulties students can be seen as follows:

$$\frac{30}{35} \times 100\% = 85,71$$

Difficulty concept to number 3 there are 20 students who are having difficulty. To determine the percentage score difficulties students can be seen as follows:

$$\frac{20}{35} \times 100\% = 57,14$$

## **2. Difficulty Principles**

From the research it can be concluded that the difficulties of the seventh grade students of SMPN 8 Makassar in solving Flat rectangle on the principle contained in the difficulty category number 2 number 3 and number 5.

Difficulty principles for the number 2 there were 8 students who are having difficulty. To determine the percentage score difficulties students can be seen as follows:

$$\frac{8}{35} \times 100\% = 22,86$$

Difficulty principle to number 3, there were 15 students who are having difficulty. To determine the percentage score difficulties students can be seen as follows:

$$\frac{15}{35} \times 100\% = 42,86$$

Difficulty principles for the number 5 there are two students who are having difficulty. To determine the percentage score difficulties students can be seen as follows:

$$\frac{2}{35} \times 100\% = 5,71$$

## **3. Difficulty Skills**

From the research it can be concluded that the difficulties of the seventh grade students of SMPN 8 Makassar in solving Flat rectangular in difficulty categories of skills are at number 4 and number 5.

Difficulty skills to number 4 there are 8 students who are having difficulty. To determine the percentage score difficulties students can be seen as follows:

$$\frac{8}{35} \times 100\% = 22,86$$

Difficulty skills to number 5 there are five students who have difficulty. To determine the percentage score difficulties students can be seen as follows:

$$\frac{5}{35} \times 100\% = 14,29$$

From the student's work can be seen that there are still many students who have difficulty in solving the rectangle and square.

Difficulties experienced by students is difficult concept where students still confuse rectangle properties and properties that experienced students persegi. Kesulitan principle that students already know the formulas to be used, but they found it difficult to use the existing formula. On the difficulty of skills students have difficulty in describing the wake rectangular and square.

For trouble concept at number 1 is by a score of 85.71 and No. 3 with a score of 57.14. And difficulty in principle to the number 2 with a score of 22.86 to number 3 with a score of 42.86 and No. 5 with a score of 5.71, as well as difficulty skill at number 4 with a score of 22.86 and No. 5 with a score of 14.29.

## **IV. Conclusion**

From these results it can be seen the three types of categories which include the difficulty of concepts, principles difficulties, and difficulty skills. In terms of subject Flat in grade four class VII SMPN 8 Makassar with a sample of 35 respondents, then the conclusion can be stated as follows:

1. Difficulty concept of class VII SMPN 8 Makassar on the subject of the rectangular flat wake have difficulty score of 71.43% was categorized as level of difficulty.
2. Difficulties principle seventh grade students of SMPN 8 Makassar on the subject of the rectangular flat wake have difficulty score of 25.71% categorized the degree of difficulty is very low.
3. Difficulties skills of the seventh grade students of SMPN 8 Makassar on the subject of the rectangular flat wake have difficulty score 20% categorized the degree of difficulty is very low.

### References

- [1]. Mulyono Abdurrahman. *Anak Berkesulitan Belajar - Teori Diagnosis dan Remediasinya*. Jakarta: PT. Rineka Cipta. 2012
- [2]. Depdikbud. *Kamus Besar Bahasa Indonesia*. Jakarta: Rineka Cipta. 1995
- [3]. Akhmad Sudrajat. *Kesulitan Belajar*. Wordpress.com. 2009
- [4]. Purwanto, Heri. *Ortopedagogik Umum*. Yogyakarta: Fakultas Ilmu Pendidikan IKIP Yogyakarta. 1998
- [5]. Rahmatiah. *Beberapa Faktor Penyebab Kesulitan Belajar Matematika Siswa Kelas II SLTP Negeri 3 Polewali Mamasa*. Skripsi FPMIPA IKIP Ujung Pandang. 2003
- [6]. Abidin, Irham. *Analisis Kesulitan Siswa Menyelesaikan Soal Teorema Pythagoras pada Siswa Kelas II SMP Negeri 1 Binamu Kabupaten Jeneponto*. Skripsi: FKIP Unismuh Makassar. 2006.
- [7]. Nurkencana, Wayan dan Sunartana. *Evaluasi Hasil Belajar*. Surabaya: Usaha Nasional. 1992.