



## JUNIOR HIGH SCHOOL STUDENTS' ABILITY TO COMPLETE MATHEMATICAL HOTS QUESTIONS

Samsul Hadi<sup>1</sup> Suratman Wijaya<sup>2</sup>

Primary School Teacher Education Study Program Institut Pendidikan Nusantara Global, Lombok Tengah, Indonesia  
Junior High School Teacher of SMPN 1 Pringgasela. Lombok Timur. Indonesia

### History Article

#### Article history:

Received September 3, 2020  
Approved Oktober 3, 2020

#### Keywords:

*Problem Solving,  
Mathematical Problem  
Solving, High Order  
Thinking Skills.*

#### ABSTRACT

Mathematical High Order Thinking Skill (HOTS) problem solving is part of students' abilities which require creativity, criticality, and student analysis in solving both simple and complex problems. This study aims to analyze the ability of junior high school students in solving mathematics HOTS problems. This research uses a case study-based qualitative approach. Research participants consisted of 30 students consisting of 13 male students and 17 female students in class VIII at one of the public junior high schools in East Lombok, NTB, in the odd semester of the 2020-2021 academic year. The research sample was determined by purposive sampling. The instrument used was a description test of HOTS questions and interviews. The results showed that the ability of junior high school students in solving HOTS questions was still low both in understanding problems, making problem representations, developing strategies, and executing strategies.

© 2020 Jurnal Ilmiah Global Education

\*Corresponding author email: [sammastur@gmail.com](mailto:sammastur@gmail.com)

### INTRODUCTION

In learning mathematics in the 2013 curriculum, high-order thinking skills (HOTS) are one of the abilities that need to be developed in any mathematics learning material both in schools and in madrasah. This is because high-order thinking skills are an ability that helps students to think critically, creatively, analytically, and be able to solve problems, both simple and complex. Higher order thinking skills will stimulate students to analyze or manipulate previous information so that it is not monotonous. That way, students are expected to be able to deepen the concepts they get, foster new ideas, communicate ideas and ideas and work together in solving a problem they face. Levels for assessing higher-order thinking skills are: analyzing (C4), evaluating (C5), and creating (C6) (Dinni, 2018). Therefore, higher order thinking skills are not only memory skills but also require skills in analyzing, evaluating, and creating.

Higher order thinking skills are not only enhanced in the cognitive aspects but are able to improve the skills and affective aspects of students. One application to foster high-order thinking skills is by conducting tests in the form of HOTS questions given to students with the aim of finding out how much students' ability to solve problems and to understand the questions given by HOTS questions. HOTS is an instrument that assesses students' high-order thinking skills so

that students do not just remember or restate but students are expected to be able to develop their ideas and ideas. Therefore, HOTS questions invite students to explore existing concepts and solve a problem. In connection with the measured thinking skills, HOTS questions are used to assess thinking skills to analyze (C4), evaluate (C5), and create (C6). One of the lessons tested in HOTS questions is mathematics learning.

HOTS questions are an instrument that assesses students' higher order thinking skills so that students do not just remember or restate but students are expected to be able to develop their ideas and ideas. Therefore, HOTS questions invite students to explore existing concepts and solve a problem. In connection with the measured thinking skills, HOTS questions are used to assess thinking skills to analyze (C4), evaluate (C5), and create (C6). One of the lessons tested in HOTS questions is mathematics learning. Learning mathematics can train students to think critically, creatively, and logically. In addition, learning mathematics does not only use calculations or formulas but also involves students' reasoning abilities in solving a problem (Helmawati, 2019). Although the ability to work on HOTS questions is an ability that is very important to be developed in every lesson, the fact is that in the field the ability of students to work on HOTS questions is still categorized as low. This can be seen from the results of the researcher's preliminary study, when students were given a HOTS math question, it was found that most students had difficulty solving HOTS questions in terms of making problem representations, formulating strategies, and implementing these strategies. From the description of the problems above, the researcher is interested in conducting a study entitled "The ability of junior high school students in solving HOTS Mathematics questions". The problem formula in this study is how the ability of junior high school students in solving HOTS Mathematics questions. The purpose of this study was to determine how the ability of junior high school students in solving HOTS Mathematics questions.

## **METHODS**

This research is a descriptive qualitative research. The research was conducted at one of the state junior high schools in East Lombok with 30 participants of class VIII-A consisting of 13 male students and 17 female students. The technique of taking participants by using purposive sampling technique. Data collection was done by test and non-test. The test was conducted to measure students' ability in solving mathematics HOTS questions and non-tests were conducted to determine the difficulty level of students in solving mathematics HOTS questions.

## **RESULTS AND DISCUSSION**

In the problem solving test of mathematics HOTS questions, it can be seen that the highest score obtained by the students is 68 and the lowest score obtained is 12. The result of the essay test shows that most of the students still have difficulties in solving mathematics HOTS problems. Of the 30 students in solving 5 items in the description of the problem solving test math HOTS questions. Question number 1, 3 students who can answer completely. Question number 2, 5 students who can answer completely. Problem number 3, only 4 students can answer completely. Problem number 4, no student can answer completely. However, in question number 4 there was only one student who could solve the questions correctly even though there was a lack of information that was mentioned when writing down the known data and the data in question. As for question number 5, there are 6 students who can answer completely. This means that there are still many students who cannot answer math problem solving problems completely and correctly.

From the results of interviews and documentation studies, it can be seen that 65% of students have difficulty in language, 25% of students have difficulty in modeling, and 35% of students have difficulty in solving math HOTS problems in terms of understanding problems, making problem representations, strategize, and implement strategies. With the description or description regarding the students' ability to do HOTS questions in mathematics learning, the teacher should be motivated to help students improve their students' abilities in doing HOTS questions, especially in mathematics learning which consists of 3 levels of HOTS questions. The

teacher can provide exercises in the form of HOTS questions continuously so that students are trained and used to it. Therefore, the role of the teacher is very important in supporting students' higher order thinking skills in any learning material so that learning objectives can be achieved properly.

## **CONCLUSION**

Based on the findings and discussion of the research, it can be concluded that the ability of junior high school students in solving HOTS mathematics questions is still low both in terms of understanding problems, making problem representations, developing strategies, and executing strategies.

## **REFERENCES**

- Dinni, H. N. (2018). HOTS (*High Order Thinking Skills*) dan Kaitannya dengan Kemampuan Literasi Matematika. *Prisma*, 1, 170–176.
- Helmawati. (2019). *Pembelajaran dan Penilaian Berbasis HOTS (Higher Order Thinking Skills)*. Bandung. Remaja Rosdakarya.