ANALYSIS HOTS CONTENT IN ERLANGGA STRAIGHT POINT SERIES (ESPS) 5TH GRADE MATHEMATICS TEXTBOOK BASE ON BLOOM’S TAXONOMY THEORY

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Abstract

This research is motivated by high-level thinking skills that must be achieved so that the learning process can produce students who are competent in their fields. Therefore, students need to be familiarized with learning activities that can train and improve students’ higher order thinking skills. The method used is Content Analysis with a qualitative approach. Based on the results of the study, it was found that 56% of HOTS content in all of the material in this book, with details of 50% C4 (Analyzing), 2% C5 (Evaluating), 4% C6 (Creating), and 44% of material not including HOTS content, so it can be concluded HOTS content of all material in the mathematics textbook Erlangga straight point series (ESPS) class 5 is included in the category (C Medium). Furthermore, the research results obtained 50% HOTS content in all examples of this book’s questions, with details of 47% C4 (Analyzing), 1% C5 (Evaluating), 2% C6 (Creating), and 50% of sample questions not including HOTS content, so it can be concluded that the HOTS content of all sample questions in the Erlangga Straight Point Series (ESPS) mathematics textbook for class V belongs to the category (C Medium). Furthermore, the research results obtained that 26% of HOTS content in all practice questions in this book, with details of 19% C4 (Analyzing), 1% C5 (Evaluating), 6% C6 (Creating), and 74% of practice questions are not included in HOTS content, so it can be concluded that the HOTS content of all practice questions in the Erlangga Straight Point Series (ESPS) mathematics textbook for class V belongs to the category (E Very Low).

Keywords: Content Analysis, Higher Order Thinking Skill, Textbook

Abstrak

Penelitian ini dilatarbelakangi oleh keterampilan berpikir tingkat tinggi harus dicapai agar dalam proses pembelajaran dapat menghasilkan siswa yang berkompeten di bidangnya. Oleh karena itu, siswa perlu dibiasakan dengan kegiatan pembelajaran yang dapat melatihkan dan meningkatkan keterampilan berpikir tingkat tinggi siswa. Metode yang digunakan adalah Conten Analysis (Analisis Isi) dengan pendekatan kualitatif. Berdasarkan hasil penelitian diperoleh konten HOTS pada seluruh materi buku ini sebanyak 56%, dengan rincian 50% C4 (Menganalisis), 2% C5 (Mengevaluasi), 4% C6 (Mencipta), dan 44% materi bukan termasuk konten HOTS, sehingga dapat disimpulkan konten HOTS seluruh materi pada buku teks matematika erlangga straight poin series (ESPS) kelas V termasuk kategori (C Sedang). Selanjutnya hasil penelitian diperoleh konten HOTS pada seluruh contoh soal buku ini sebanyak 50%, dengan rincian 47% C4 (Menganalisis), 1% C5 (Mengevaluasi), 2% C6 (Mencipta), dan 50% contoh soal bukan termasuk konten HOTS, sehingga dapat disimpulkan konten HOTS seluruh contoh soal pada buku teks matematika erlangga straight poin series (ESPS) kelas V termasuk kategori (C Sedang). Selanjutnya hasil penelitian diperoleh konten HOTS pada seluruh latihan soal buku ini sebanyak 26%, dengan rincian 19% C4 (Menganalisis), 1% C5 (Mengevaluasi), 6% C6 (Mencipta), dan 74% latihan soal bukan termasuk konten HOTS, sehingga dapat disimpulkan konten HOTS seluruh latihan soal pada buku teks matematika erlangga straight poin series (ESPS) kelas V termasuk kategori (E Sangat Rendah).

Kata Kunci: Konten, Higher Order Thinking Skill, Buku Teks
INTRODUCTION

Higher Order Thinking Skills or in English Higher Order Thinking Skills (HOTS) is something that is important and is now a concern in the field of education. In fact, higher-order thinking skills have become curriculum objectives (Tan and Haiili, 2015:12). The Partnership for 21st Century Skills (P21) also states that higher order thinking skills such as critical and creative thinking can help students succeed in their future careers (Alismail and McGuire, 2015: 10). The importance of higher order thinking skills for students results in these skills being taught and trained in every lesson in school.

However, in reality there are still many teachers who do not understand the importance of HOTS content contained in a book, and teachers do not analyze the media or teaching materials used in the learning process, so that students have difficulty understanding the material, examples of questions and practice questions in learning, including in learning mathematics. Actually, Law Number 20 of 2003 concerning the National Education System Article 3 which reads "National education functions to develop and shape the character and civilization of the nation, aims to develop the potential of students to become human beings who believe and fear God Almighty, have noble character, healthy, knowledgeable, capable, creative, independent, and being a democratic and responsible citizen, implicitly wants students' higher-order thinking skills to be developed and one of them is through the learning process in mathematics.

Mathematics is one of the subjects taught from the lowest to the highest level of education because mathematics as a basic science has an important role in mastering various fields of science and technology (Budiono & Suhendar, 2019: 13). This is in line with the opinion (Adah and Kurniaiwati 2016: 8) that mathematics has a specialty, namely as a queen and also as a servant of other sciences. According to (Damayanti and Rufiana, 2020: 7) mathematics does not only play an important role in other branches of science but also plays a very important role in everyday life. Mathematics is also a science that can train students' critical, systematic, logical and creative thinking (Suryapuspitari, et al, 2018: 9). So that mathematics is one of the sciences that can improve the quality of competitive human resources in the current era, therefore to improve students' thinking power, textbooks are needed to improve students' critical, systematic, logical and creative thinking.

Textbooks are an important component in the learning process, including in the process of increasing HOTS (Susanti et al., 2014: 8). Textbooks actually describe the minimum effort that must be made by teachers and students in the learning process and are not the only source that can be used for learning. Teachers and students can use other trusted sources besides textbooks in the learning process. However, the mathematics textbooks used in schools reflect what students learn. In other words, textbooks represent real action processes of teaching and learning. According to Permendikbud Number 8 of 2016 concerning Books Used by Education Units, books used by educational units, both in the form of textbooks and non-textbooks, are a means of the learning process for teachers and students. Freeman et al. (Wijaya, Heuvel, and Doorman, 2015:17) says that the teacher's decisions in choosing materials and teaching
strategies are often directly influenced by the textbooks used by the teacher. Schmidt et al. (Wijaya et al., 2015: 5) also mentions that textbooks can be considered in determining the level of student learning opportunities. Tornroos (Wijaya et al., 2015: 6) even mentions that there is a strong relationship between the textbooks used and students' learning outcomes in mathematics.

Thus, it can be said that the more higher-order thinking skills are contained in a textbook, the greater the opportunity for higher-order thinking skills to improve students' abilities. Therefore, it is necessary to analyze the content of higher-order thinking skills in mathematics textbooks, especially mathematics textbooks at the elementary level because learning mathematics in elementary schools is highly prioritized for the improvement and development of higher-order thinking skills. In the learning process, textbooks are an important component to pay attention to both when preparing and implementing learning. In terms of improving higher-order thinking skills, a good textbook is certainly a textbook that trains and improves students' higher-order thinking skills (Susanti, Kusumah, and Sabandar, 2014:6). However, the Erlangga Straight Point Series mathematics textbook, no one has yet analyzed its high-level skill content.

Higher-order thinking skills must be achieved so that the learning process can produce students who are competent in their fields. Therefore, students need to be familiar with learning activities that can train and improve students' higher-order thinking skills. One of the things that can accustom students to improve higher-order thinking skills is in the textbooks used in the learning process in class.

METHOD

This research is a qualitative research. According to Masyhud (2016: 27) qualitative research is research that emphasizes aspects of in-depth understanding of a problem. Moleong (2017: 6) explains that qualitative research is research that intends to understand phenomena about what is experienced by research subjects, for example behavior, perceptions, motivations, actions holistically and by means of descriptions in the form of words and language in a special context that naturally and by utilizing various natural methods.

The source of the data in this study was the Mathematics Textbook Erlangga Straight Point Series (ESPS) Grade 5. The choice of this book as a data source is because learning mathematics at the elementary school level is highly prioritized for the improvement and development of HOTS (Riadi and Retnawati, 2014: 13). In addition, the selection of this book was based on the eligibility standard set by the BSNP (National Education Standards Agency) which states that the main book used for grade 5 elementary school students is a book that can improve students' higher-order thinking skills.

Data collection was carried out through note-taking techniques, observation and documentation studies, namely: (1) The note-reading technique is the careful reading and recording of the Class 5 Erlangga Straight Point Series (ESPS) Mathematics Textbook. The instruments used are framework and human instruments. The knowledge, thoroughness, and criticality of researchers are needed in finding and exploring data that is appropriate to the research problem and analytical framework. (2) Observation is a data collection technique that is carried out through an observation, accompanied by recordings of the state or behavior of the target object. According to (Nana Sudjana 2012: 8) Observation is systematic observation and recording of the symptoms studied. Observation techniques are systematically observing and
recording the phenomena investigated. In a broad sense, observation is actually not only limited to observations that are carried out either directly or indirectly. Meanwhile, according to (Sutrisno Hadi 2015: 12) the observation method is defined as observation, systematic recording of the investigated phenomena. (3) Documentation study data collection techniques. In carrying out this documentation study, researchers investigate written objects such as books, magazines, documents, regulations, meeting minutes, and diaries. Of these kinds of objects, the researcher chose the Mathematics Textbook Erlangga Straight Point Series Class 5 as material for data collection. According to Suharmi Arikunto the documentation method is to find data about things or variables in the form of notes, transcripts, books, newspapers, magazines, inscriptions, minutes, Legger, agendas, and so on (Arikunto 2012: 236). Data collection in this study was carried out through several stages as follows: (a) collecting selected library materials as data sources; (b) selecting library materials to be used as primary data sources; (c) supplemented by secondary data sources; (d) reading selected library materials, both regarding the substance of thought and other elements; (e) examine the contents of one of the library materials and then check it with other library materials; (f) record the contents of library materials related to research statements; and (g) classifying data from the essence of writing by referring to the formulation of the problem.

Data analysis techniques mean the methods needed to process the data obtained so that it can become a relevant and scientific conclusion. In this study will use qualitative data analysis techniques. According to Bogdan (Dharma, 2011: 11), qualitative data analysis techniques are the process of systematically compiling data obtained from interviews, field notes, and other materials so that they are easy to understand so that they can be informed to others. The analytic framework in this study is like that done by Yang (2016: 35) by analyzing abstractions in textbooks without student data. The following are the steps in conducting qualitative data analysis referring to (Sugiyono, 2013:15).

1. Content analysis based on the revised Bloom’s Taxonomy
   First, the researcher analyzed the HOTS content in the mathematics textbook Erlangga straight point series. From the results of this analysis, it can be seen that a content is at which cognitive level.

2. Categorization
   The two researchers will categorize the HOTS content in the straight point series mathematics textbooks for class V into three groups, namely C4 analyzing, C5 evaluating and C6 creating. This classification is based on the results of analysis of each content associated with the revised Bloom’s taxonomy.

   Content whose level reaches analyzing, evaluating, and creating is categorized into HOTS, then the data is recapitulated by calculating the percentage of HOTS content using the formula:

   \[ K = \frac{K_i}{Total\ Soal} \times 100\% \]

   Information:
   K : Percentage of material content results
   Ki: The amount of material content

RESULTS AND DISCUSSION

Results

The mathematics textbook analyzed was the Erlangga Straight Point Series (ESPS) Mathematics Textbook Class 5 published by Erlangga in 2016. The reason for choosing the
textbook was because this mathematics textbook did not yet have information on HOTS content, this book consists of 5 chapters totaling 148 page, The title of the learning material in Chapter 1 is Fractional Counting Operations, Chapter 2 is Speed and Discharge, Chapter 3 is Plans and Scales, Chapter 4 is Cubes and Blocks, Chapter 5 is Data processing.

The research results obtained are cognitive level classification based on the revised Bloom's taxonomy. The researcher presents a three-level classification along with a detailed classification of the categories for each cognitive level. In addition, other research results are HOTS content levels C4-C6. Each content that is included as material, sample questions and HOTS practice questions is leveled again based on the leveling made by the researcher.

In each chapter of the book Erlangga Straight Point Series there is an explanation section, examples and practice questions. The material section discusses certain mathematical concepts. The example section contains one or more questions whose answers have been provided. The practice questions section is a collection of questions that students can use to practice their abilities. Therefore, the HOTS content in textbooks is analyzed and described based on the material sections, examples, and exercises. The following is a diagram of the results of the HOTS analysis of the material, examples and practice questions:

![Diagram 1. Content analysis Hots Material](image-url)
Discussion

Based on the results of the analysis on Material Hots Content (diagram 1.1) it is found that the total amount of material in Chapters 1 to Chapter 5, in Erlangga's mathematics book there are 50 materials, of the 50 materials as many as 25 materials are included in C4 Analyzing, as many as 1 material is included in C5 Evaluating, 2 materials are included in C6 Creating, and 22 materials are not HOTS, so that the HOTS content in this book's material is 50% C4 Analyzing, 2% C5 Evaluating, 4% C6 Creating, and 44% not HOTS. Based on the HOTS standard according to Tanwey (Rohman.S & Hartoyo.Z 2018) it can be concluded that the HOTS content in this erlangga book is 56% included in level C (Medium).
From the results of the HOTS content analysis of sample questions (diagram 1.2) it is found that the total number of sample questions in Chapters 1 to Chapter 5 of Erlangga's math book contains 126 sample questions, and 60 of these examples are included in C4 Analyzing, 1 sample problem is included in C5 Evaluating, 2 sample questions are included in C6 Creating, and finally 63 examples of Not HOTS questions, so that the HOTS content in the sample questions in this book is 47% C4 Analyzing, 1% C5 Evaluating, 2% C6 Creating, and 50% Not HOTS. Based on the HOTS standard according to Tanwey (Rohman.S & Hartoyo.Z 2018), it can be concluded that the HOTS content in this book is 50% included in level C (medium).

Whereas in the HOTS practice questions, the total practice questions from Chapter 1 to Chapter 5 of Erlangga's math book have 468 practice questions, out of the 468 practice questions, 88 practice questions are included in C4 Analyzing, 6 practice questions are included in C5 Evaluating, 30 practice questions included in C6 Creating, and finally 344 practice questions Not HOTS, so that the HOTS content in the practice questions in this book is 19% C4 Analyzing, 1% C5 Evaluating, 6% C6 Creating, and 74% Not HOTS, based on HOTS standards according to Tanwey (Rohman.S & Hartoyo.Z 2018), it can be concluded that the HOTS content in this book is 26% included in level E (Very Low).

CONCLUSION

Based on the results of research on the Erlangga Straight Point Series (ESPS) Mathematics Textbook and referring to the HOTS standard according to Tanwey (Rohman.S and Hartoyo.Z 2018) it can be concluded that the HOTS Content Material in the book is categorized as C (Medium), Example HOTS content The questions are categorized as C (moderate) and the HOTS content in the practice questions is categorized as E (very low).

REFERENCES


