ANALYSIS OF READING EXERCISE QUESTIONS IN AN ENGLISH TEXTBOOK FOR YEAR X SENIOR HIGH SCHOOL STUDENTS BASED ON BLOOM'S TAXOMONY

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Abstract

This research identifies the distribution of reading exercise questions based on the cognitive domains in the Revised Bloom's Taxonomy. It also attempts to change the reading exercise questions from the Lower-order Thinking Skills (LOTS) items into Higher-order Thinking Skills (HOTS) items. Content analysis was used as the research methodology. The subject of the study was the English textbook 'Bahasa Inggris SMA/MA/SMK/MAK' for year X high school students published by the Ministry of Education and Culture. Documentation was employed to collect data. The data were analyzed by using an interactive mood technique. Results of the study revealed that the lower-order thinking skills were distributed within 183 items, while that of the higher-order thinking skills were within 63 items. Specifically, the lower order thinking skills items were distributed as follows: Remembering skill with 100 questions, or 41%, understanding skill with 31 items, or 13%, and applying skill with 52 reading questions, or 21%. Meanwhile, the higher order thinking skills comprised analyzing skill with 38 questions or 15%, evaluating skill with 13 questions or 15%, and creating skills with 12 questions, or 5%. To sum up, the data showed the distribution of the higher order thinking skill (25%) was significantly lower than that of lower order thinking skill (75%).

***Keywords**: Bloom's Taxonomy, Reading Exercises, Cognitive Domain, English Textbook.*

INTRODUCTION

Textbooks are a very important source of learning in the teaching learning process. The use of textbooks enables teacher and students to understand the material to be studied, such as reading. It is considered helpful because most of the objectives have already been prepared in sets of practices based on the needs of the students (Cunningsworth, 1995). A good textbook should provide a useful resource for the teachers as a course designer and students as the English learners (Gak, 2011).

In writing a textbook, there are several criteria that must be considered by writers, such as: usefulness for students and teachers, accuracy of writing, and attractive format. Textbook authors should also consider other criteria related to HOTS, which consist of analyzing, evaluating, and creating skills in textbook activities to improve students' critical thinking skills.

In learning English, there are four skills that students must master, namely: listening, speaking, reading, and writing. Reading is a language skill where students must read written texts in English. Through reading, the students are expected to get more information that helps them to understand sentences more easily to increase their knowledge.

In assessing students' reading ability, teachers can use the reading questions given in the textbook. The questions usually contain a detailed set of information that can be found in the reading section. Linse (2006) states that reading should involve the higher order thinking skills, as they are crucial to stimulate critical thinking skills.

Based on the revised version of Bloom's Taxonomy (Anderson and Krathwohl: 2001), there are three domains in Bloom Taxonomy: the cognitive domain, affective domain and psychomotor domain. This study focused on the cognitive domain. The cognitive domains are divided into two levels: The first is Lower Order Thinking skills (LOTS) which consist of three level indicators namely, Remembering (C1), Understanding (C2), and Applying (C3); and the second is Higher Order Thinking Skills (HOTS) that comprise the top three domains in cognitive skills; Analyzing (C4), Evaluating (C5) and Creating (C6) (Anderson and Krathwohl: 2001).

The policy of Directorate of High School (2015) states that student training is expected to encourage the students' higher order thinking and creativity, and build their independence to solve problems. In addition, Linggasari (2015) reported that the Indonesian government through the Minister of Education has decided to increase the analytical or the higher-order thinking test questions to 10 percent annually. That is, the exercises given to students must focus on higher order thinking skills. In addition to this, textbook authors should also consider other criteria related to HOTS, which addresses the skills of analyzing, evaluating, and creating in textbook activities to improve the students' critical thinking.

Nevertheless, the writer found that some English textbooks still provide activities at the lower order thinking skills (LOTS). These activities particularly can be found in the English textbook entitled "Bahasa Inggris" for grade 10th SMA/MA/SMK/MAK published by the Ministry of Education and Culture. This condition is considered less effective in stimulating students to optimize their critical thinking. There was a need for test developers to reduce the number of LOTS questions and increase the questions that require HOTS. For this reason, the researcher analyzed the English textbook entitled "Bahasa Inggris" for SMA/MA/SMK/MAK Grade 10th published by the Ministry of Education and Culture. The analysis aimed to ensure that the textbook used supported students to improve students' critical thinking skills. The researcher categorized each exercise into six levels of

the revised Bloom's Taxonomy consisting of C1, C2, C3, C4, 5, and C6. Then, the researcher altered the reading exercise questions in the Lower-order Thinking Skills (LOTS) items into Higher-order Thinking Skills (HOTS). This research in particular indicated whether the reading questions in English textbook was in good quality to improve the students' critical thinking or not.

REVIEW OF LITERATURE

Reading

Reading is is an activity to get information. Juliantana (2020) said reading is an act of seeing and understanding points. Reading entails the use of a technique to understand several words in a sentence and make them meaningful. Reading is an active process that requires a great deal of practice and skill for a reader to combine information from a text and their own background knowledge to build meaning (Nunan, 2003).
Grabe and Stoller (2002) classify reading purposes with four main headings such as, reading for simple information, to learn from text, for general understanding, to integrate information, writing and critical text.

Reading Exercise

Reading exercise test is very important to measure students' understanding. Heaton (1988) states that there are still a lot of test materials limited to quotations in short readings, which are the basis for general comprehension questions. The material in the reading comprehension test is closely related to the type of practice material used by the teacher to develop reading skills.

Heaton (1988) categorizes several ways of testing reading exercise questions, such as Matching Test, True/False Reading Test, Multiple Choice Test, Completion Test, Open-Ended.

Textbook

Gordani (2010) states that textbooks have a major influence on student learning as well as the nature and types of learning activities used in the classroom. Textbooks in the classroom have an important role in supporting the teaching and learning process. According to Margana and Widyantoro (2017), in the process of teaching and learning, textbooks is must be available to all students.
Cunningsworth (1995) states that textbooks have a dual role in teaching English, and they can serve as:

    a. A source for presentation material (oral and written.

    b. An activity resource for learner practice and communicative interaction.

    c. Reference resource for learners on grammar, vocabulary, and pronunciation.

    d. Source of stimulation and ideas for class activities.

    e. A syllabus (where they reflect predetermined learning objectives).

    f. A support for inexperienced teachers who are not yet confident.

Revised Bloom's Taxonomy

Bloom's Taxonomy has traditionally been seen as a tool that is best applied in the early school years (i.e., high school and junior high school). The revised taxonomy is universal and easy to apply at the primary,

secondary, and even tertiary levels. This means that the revised taxonomy is a more authentic tool for curriculum planning, delivery, and instructional assessment. The revision emphasizes the explanation and description of subcategories.

Cognitive Domain of Revised Bloom's Taxonomy

A cognitive domain is a type of ability that is related to knowledge, reasoning, or thinking. The cognitive processes mean describing the range of students' cognitive activities in constructivist learning; that is, these processes are ways in which students can actively engage in the process of constructing meaning (Anderson & Krathwohl, 2001).

Anderson and his colleagues revised Bloom's Taxonomy because of the necessity to integrate new knowledge and thinking inside a framework for categorizing educational goals. They argue that by changing the taxonomy, the new taxonomy reflects a more active and accurate kind of systems thinking than the old taxonomy in developing educational goals. Anderson and Krathwohl (Anderson & Krathwohl, 2001) revised the cognitive domains of remembering, understanding, applying, analyzing, evaluating, and creating.

a. Remembering

Remembering is an attempt to regain knowledge from memories or recollections that have occurred in the past or that have just occurred. Furthermore, when knowledge is used in more complicated activities, remembering it is vital for effective learning and problem solving (Anderson & Krathwohl, 2001). Anderson and Krathwohl (2001) divide the memory process into two stages: recognizing and recalling.

b. Understanding

Understanding is related with gaining knowledge from many sources such as messages, reading, and conversation. Capability to understand instructions and confirm the interpretation of ideas or concepts given. For example, it relates to explain or interpret the meaning of a specific sentence.

c. Applying

Applying refers to the cognitive process of utilizing or employing a procedure to carry out an experiment or solve a problem. In this category, students are required to change theories or rules into practical effects, demonstrate, and solve problems. Applying includes 2 subcategories, they are executing and implementing.

d. Analyzing

Analyzing is solving a problem by separating each part of the problem and looking for the relationship of each of these parts and finding out how these relationships can cause problems. In this process, students are required to identify the constituent parts and functions of the process or concept.

e. Evaluating

Evaluation is related to cognitive processes provides an assessment based on existing criteria and standards. The criteria that are usually used are quality, effectiveness, efficiency, and consistency. Evaluate category requires students to review, or strategic planning concerning the sustainability of the program, and calculate the consequences of a plan or strategy. The category includes checking and criticizing.

f. Creating

This is the last category of the cognitive domain. Creating leads to a cognitive process of putting elements together to form a coherent unity and directs students to produce a new product by organizing several elements into a different form or pattern than before.

RESEARCH METHODOLOGY

This study used document or content analysis. Fraenkel (2012) explained that content analysis is an indirect technique used to analyze human's communication forms namely written contents (e.g., textbooks, essay, newspapers, novels, magazine) or other communication media such as songs or even political speeches. Furthermore, the writer investigated the cognitive process components of the tasks and changed the reading exercise questions from the Lower-order Thinking Skills (LOTS) category into Higher-order Thinking Skills (HOTS) in the English textbook *'Bahasa Inggris SMA/MA/SMK/MA'* for year X high school students published by the Ministry of Education and Culture.

In this study, documentation was used to collect data. Arikunto (2000) said that documentation is used to investigate written documents, such as notes, transcripts, books, magazines, newspapers. This study used one document: The English textbook *'Bahasa Inggris SMA/MA/SMK/MA'* that was published by the Ministry of Education and Culture for year X high school students.

The instrument used for the documentation was checklist. Checklist is a list of data variable that will be collected (Arikunto, 2006). The researcher built a checklist on the basis of the cognitive domain's Andersons Taxonomy. A table with eight columns composes the checklist.

In analyzing the data, the researcher used the technique proposed by Miles and Huberman (2014). This technique called an interactive mode consisting of three activity lines, namely data condensation, data presentation, and conclusion drawing or verification. Then, the researcher used the data analysis technique framework developed by Miles and Huberman (2014) with the following description:

a. Data Condensation

At this stage the researcher categorized each exercise into six levels of the revised Bloom's Taxonomy consisting of C1, C2, C3, C4, 5, and C6. Then, the researcher changed the reading exercise questions from the Lower-order Thinking Skills (LOTS) category into Higher-order Thinking Skills (HOTS) in the English textbook *'Bahasa Inggris SMA/MA/SMK/MA'* for year X high school students published by the Ministry of Education and Culture.

b. Data Display

In this case, the researcher presented the data that include the percentage of each cognitive level of Revised Bloom's Taxonomy found in the English Textbook Exercise for 10th graders of SMA Published by the Ministry of Education and Culture 2017.

$$X = \frac{F}{N} \times 100\%$$

X= The percentage of the obtained exercise in a certain level

F= Frequency

N= Total Number of exercises from all levels.

c. Drawing Conclusion

In this study, researcher made conclusions that refer to the formulation of the problem.

FINDINGS AND DISCUSSION

Findings

Findings from the data analysis revealed the amount of each cognitive level of Bloom's Taxonomy presented in the exercises in each chapter, the percentage of each cognitive level and the changes of the LOTS items into the HOTS items. The findings can be summarized as follows:

Based on the analysis on the distribution of the reading exercise in cognitive domain in the English for Senior High School year X textbook, 246 reading questions dominated the remembering level. The distribution of the lower-order thinking skills obtained 183 items, while the distribution of higher-order thinking skills obtained 63 items.

Table 4.6 Cognitive Dimension Percentage in the Textbook

No	Cognitive Dimension Level		Frequencies	Percentage
1	Lower-Order Thinking	Remembering	100	41%
2		Understanding	31	13%
3		Applying	52	21%
4	Higher-Order Thinking	Analyzing	38	15%
5		Evaluating	13	5%
6		Creating	12	5%
	Total		**246**	**100%**

The findings of the data analysis demonstrated that the remembering level of questions that retrieve knowledge from long-term memory appeared in 100 questions out of 246 questions, reaching 41%. Understanding level that constructs meaning from instructional messages, including oral, written, and graphic communication obtained 31 questions or 13% out of 246 questions. Applying level that applies a procedure to a familiar task obtained 52 items or 21% out of 246 questions. Analyzing level that breaks material into its constituent parts and determines how the parts relate to one another and to an overall structure or purpose obtained 38 questions out of 115 questions, or 15%. Evaluating level that makes judgments based on criteria and standards obtained 13 items out of 115 questions, or 5%. There were 12 questions that belonged to creating level that puts elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure.

Moreover, from the other six domains, the distribution of the evaluating and creating domains in the reading questions was concerning because there were fewer questions that belonged to evaluating and creating levels in higher order thinking skills. It clearly showed that the distribution of the higher order thinking was lower than the lower order thinking skills. It could be also interpreted that, in the reading questions, the author of the textbook gave more emphasis only on the lower order thinking. The researcher

changed the LOTS items into HOTS items and made the reading questions in the textbook became higher order thinking skills, which can be seen from the table 4.5.

Table 4.5 The Questions List of Lots Changed into HOTS Category

No.	LOTS Questions	Cognitive Domain (LOTS)	HOTS Questions	Cognitive Domain (HOTS)
1.	What good news about Dita and Ditto know?	Remembering (C1)	Determine the good news about Dita that Ditto knows.	Analyzing (C5)
2.	What does Dito say to Dita related to the news?	Remembering (C1)	Elaborate what Dito say to Dita related to the news.	Creating (C6)
3.	What do the expression mean?	Understanding (C2)	Examine what the expression means.	Analyzing (C4)
4.	What is Ditto's purpose of saying that to Dita?	Understanding (C2)	Determine Ditto's purpose in saying that to Dita.	Evaluating (C5)
5.	How does Dita respond to what Ditto says?	Remembering (C1)	Explain Dita respond to what Ditto says.	Evaluating (C5)

Discussions

This study examined the distribution of reading exercise questions and altered the reading exercise questions in the Lower-order Thinking Skills (LOTS) items into Higher-order Thinking Skills (HOTS) items based on cognitive domains in Revised Bloom's Taxonomy in English textbook 'Bahasa Inggris SMA/MA/SMK/MA' published by the Ministry of Education and Culture. After the researcher reviewed and classified the reading exercise questions in each topic, the exercise questions that used lower order thinking skills were dominant.

Textbooks play crucial role in a teaching-learning process, and it is a major source of information (Muslaini, 2018). Textbooks are also a media to help teachers to know how exactly the learning process would take place (McGrath, 2002). Thus, it is certain that textbooks hold power in influencing students' achievement. English teachers must be able to select relevant textbooks for their students that provide the necessary materials. A textbook should also cover all forms of questions that can help students improve their critical thinking skills.

Therefore, textbooks' evaluation is important to know whether teachers can depend on it or need to create additional media. The textbook 'Bahasa Inggris SMA/MA/SMK/MA' was the book that is used by school across the country. Thus, it needs to correspond with higher order thinking skills. Moreover, this book has been used by the senior high school students. The book should contain more higher order thinking skills questions since many of these students will enter university, where they are expected to think critically and creatively.

On the other hand, reading is foundation of learning a language. It will be difficult for students to acquire English if they do not know how to read letters, or eventually read a text. Reading that takes place in a classroom is considered intensive reading (Harmer, 2007). It relates to the aim of learning, which is to be able to understand an English text as a whole.

After identifying all of the reading questions in the book, the writer divided the questions into six cognitive domains based on revised Bloom's taxonomy. The six cognitive domains are remembering, understanding, applying, analyzing, evaluating, and creating (Anderson and Krathwohl, 2001). All these levels reflect its own complexity. It means, the least complex is the first one which is level remembering. While dividing the questions, the writer found out that the highest portion of questions were on the remembering level (C1). It had a total of 100 questions out of 246 questions (41%). This indicated the authors and the book developers have put their utmost attention on this level.

On the other hand, according to Kementerian Pendidikan dan Kebudayaan (2019), on Modul Penyusunan Soal Keterampilan Berpikir Tingkat Tinggi (Higher Order Thinking Skills) Bahasa Inggris (Drafting Module of Higher Order Thinking Skills Questions of English Lesson), HOTS assessment needs to be contextual. One of the contextual assessment characteristics is students should construct their own responses and choose presented options. Another characteristic is that students are able to create answers as many as possible. As a result, it was discovered that the textbook did not correspond to the proportion because remembering and understanding received a larger percentage than analyzing and applying. There were 248 item questions from the 66 reading exercises included in the textbook. Only 63 related to higher-order thinking skills while the others belonged to lower-order thinking skills. Directorate of High School (2015) states that student training is expected to encourage students' higher-order thinking, creativity and build their independence to solve problems.

CONCLUSIONS AND FURTHER RESEARCH

Conclusion

From the findings in the previous chapter, it can be concluded that reading exercise questions in English textbook covered all of Bloom's Taxonomy levels, remembering, understanding, applying, analyzing, evaluating, and creating. Overall, there were 246 reading questions in the English textbook. There were 63 reading questions that included higher order thinking skills and 183 reading questions that included lower order thinking skills. Remembering reached 41%. It became the most common Bloom's taxonomy level in the reading exercise questions.

Meanwhile, understanding reached 13%, and applying was represented by 21% of the question items, analyzing by 15%, evaluating by 5%, and creating by 5%. In other words, the most dominant cognitive domain level found in the reading exercise questions in the English textbook based on the Revised Bloom's Taxonomy was remembering level. Meanwhile, evaluating and creating included in the higher order thinking skills occurred the least. To sum up, it can be concluded that the data showed the composition of the higher order thinking skill was still lower with 25% than that of lower order thinking skill with 75%.

Suggestions

Based on the result of the research, the researcher gave some suggestions to teachers, authors, and future researchers. First, English teachers, in particular, can design and modify reading comprehension questions by combining levels of analyzing, evaluating, and creating while teaching in the classroom that can encourage students to think critically and use high order thinking level. They should be more creative for improving students' reading ability.

Secondly, the textbook authors who create English textbooks especially English textbooks for senior high school should be more selective, innovative, and evaluative in producing a textbook to be used in the teaching and learning process. Moreover, the authors should consider varying activities in designing reading exercise questions in the English textbook based on HOTS.

Lastly, for future researchers, it is recommended that the present study serves as a starting point for them to evaluate and improve their teaching strategies to enhance high order thinking skills of the students. In addition, the future researchers are recommended to analyze other English textbooks for the different years of students.

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