



P-ISSN 2355-2794
E-ISSN 2461-0275

How is HOTS Integrated into the Indonesian High School English Textbook?

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Abstract

This study aims at analyzing the integration of higher-order thinking skills, specifically the level of analysis (C4), the level of evaluation (C5), and the level of creation (C6), in reading comprehension questions found in senior high school textbook 'Bahasa Inggris SMA/MA/SMK/MAK for Grade 12'. This study employed critical content analysis to analyze and interpret textual material to draw valid inferences. The researchers examined the reading comprehension questions to find out how the integration of HOTS in the questions. Using a checklist table, the researchers collected, listed, and analyzed the questions according to the cognitive domain of the revised Bloom's taxonomy. After examining and determining the cognitive level of each question, the researchers categorized them into two groups, namely higher-order thinking skills (HOTS) and lower-order thinking skills (LOTS) questions. The result showed that the distribution of HOTS-level questions was lower than that of LOTS questions. The data show that the number of HOTS questions got 13 out of 67 questions or 19.4%, while LOTS questions reached 54 out of 67 questions or 80.6%. These results imply that this textbook needed to provide an adequate number of higher-level thinking questions that could enhance students' HOTS. To sum up, HOTS questions were not sufficiently integrated into the reading comprehension questions of the textbook. Thus, it is expected that the findings of this study motivate education stakeholders, including teachers, textbook authors, and publishing houses to make more effort to foster and develop HOTS in textbooks.

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Citation in APA style: Erdiana, N., & Panjaitan, S. (2023). How is HOTS integrated into the Indonesian high school English textbook? *Studies in English Language and Education*, 10(1), 60-77.

Received May 26, 2022; Revised September 1, 2022; Accepted November 30, 2022; Published Online January 31, 2023

<https://doi.org/10.24815/siele.v10i1.26052>

Keywords: English textbook, higher-order thinking skills (HOTS), lower-order thinking skills (LOTS), reading comprehension questions, revised Bloom's taxonomy.

1. INTRODUCTION

Various learning resources can now be used by teachers and students, such as textbooks, e-books, journals, newspapers, websites, YouTube, and magazines. However, a textbook is one of many resources most frequently used in the classroom to support the teaching and learning process (Rahmawati, 2018). It provides features, such as texts, assignments, exercises, and activities to meet the student's needs (Abidasari et al., 2021). As a result, since a textbook is an essential teaching instrument, teachers tend to rely on a textbook for classroom instruction (Poedjiastutie et al., 2018).

According to Richard (2001), most language programs rely heavily on textbooks. They significantly affect education because they give teachers a clear, organized framework when creating lesson plans. Moreover, for teachers and students, a textbook can provide direction during the instructional process (Febrina et al., 2019). Therefore, a textbook is helpful for both teachers and students. For teachers, it can be used for delivering materials and assessing students' understanding through exercises, while for students, it is helpful as a resource to access knowledge.

Furthermore, in the current curriculum implemented in Indonesia, i.e. Curriculum 2013 or K13, textbooks are designed to encourage students to be creative and communicative, to have collaboration skills, and to think clearly and critically (Ministry of National Education and Culture, 2014). A good textbook must provide materials and exercises to help students improve their higher-order thinking skills (HOTS). Since we live in the era of globalization where information in any form can be accessed quickly, HOTS is significant and should be developed by students, so they can critically evaluate the information they encounter daily. As Erdogan (2019, p. 116) stated, "critical thinking empowers students to assess the accuracy or value of the information, analyze and evaluate it critically, make rational decisions, and take purposeful action".

Nonetheless, there are many critics of the use of textbooks in the teaching and learning process. Some critics claim that many textbooks contain too few materials and are not challenging for either teachers or students (Penny, 2009, as cited in Pratiwi, 2014). Consequently, teachers must evaluate the content of textbooks before using them to make sure the materials in the books are appropriate to fulfil the students' needs and achieve the learning objectives set in the curriculum. The learning objectives, as stated by the Ministry of National Education and Culture (2014), are to produce Indonesian citizens who are creative, critical, communicative, collaborative, and innovative through strengthening characters, skills, and cognition.

Some characteristics of a textbook can be analyzed, including its layout, exercises, materials, instructions, and teaching resources (Pratiwi, 2014). One of the exercises that is essential to be investigated is the reading comprehension exercise. Huzairin et al. (2015) argue that students' critical thinking skill has a significant positive correlation with reading comprehension. This argument is inferred in their statement, 'the higher students' critical thinking, the higher they get reading

comprehension ability'. Good English textbooks can help students develop their critical thinking skills through reading comprehension exercises that include HOTS questions. [Febrina et al. \(2019\)](#) state that the development of student's critical thinking skills depends on using an appropriate textbook with HOTS problems.

The higher the cognitive level of questions in a textbook, the more students can improve their HOTS. The findings of some prior studies provide evidence that textbooks are crucial to the advancement of HOTS. Therefore, for this reason, reading comprehension questions should ideally implement HOTS. There are still English textbooks that provide lower-order thinking skill (LOTS) questions, such as Bahasa Inggris for SMA/MA/SMK/MAK Grade 10th. Therefore, the present research was conducted to analyze how HOTS are incorporated into the reading comprehension questions found in an English textbook entitled 'Bahasa Inggris SMA/MA/SMK/MAK Grade 12' using the cognitive level of Bloom's revised taxonomy.

There have been some earlier investigations related to this research. [Fajri \(2015\)](#) has conducted a study analyzing the levels of the reading comprehension questions in the textbook 'Bahasa Inggris: English for Senior High School Grade X'. In addition, [Fitrawati et al. \(2019\)](#) have also investigated the reading comprehension questions of HOTS in English textbooks for a senior high school in Padang. However, both studies investigated previous editions of the textbooks. In the present study, the researchers analyzed the latest edition published in 2018. The researchers believe that this investigation was necessary as a form of constructive criticism even though the topic under investigation was not sufficiently current because the book is included in a required reading list for senior high school students in Indonesia and was published by the Ministry of Education and Culture with government approval to meet the objectives of the Curriculum 2013.

Referring to the problem above, the research question of this study is: How is the integration of higher order thinking skill (HOTS) of revised Bloom's taxonomy integrated into the reading comprehension questions of the textbook entitled 'Bahasa Inggris SMA/MA/SMK/MAK for Grade 12'? The findings of the present study on the latest version of the book can be used to improve the next version of the textbook. The present study would also enrich the current body of literature on HOTS, and further action in engaging with the issue of the development of HOTS is expected to be initiated.

2. LITERATURE REVIEW

2.1 Higher-Order Thinking Skills

Higher Order Thinking Skill (HOTS) is a high-level thinking process in which students can investigate and seek information utilizing the facts at their disposal efficiently and appropriately to identify the structure and its links to solve problems. [Yeung \(2016\)](#) claims that HOTS is a confusing concept that can be defined as using critical and creative thinking to help a person handle challenging problems. Likewise, according to [Thomas and Thorne \(2009\)](#), HOTS are abilities that require students to be able to analyze, classify, manipulate, and come up with novel solutions to issues rather than memorize information and apply it.

[Brookhart \(2010\)](#) defined HOTS in three different categories as follows:

- The definition of HOTS in terms of ‘transfer’ is the students’ thinking ability to apply the knowledge and skills they have learned to new contexts. Teachers train students in a meaningful learning process to think on their own in a real-world situation without depending on the teachers to give them instructions.
- The definition of HOTS in terms of ‘critical thinking’ is the students’ thinking skills in applying wise conclusions or constructing reasoned critique. The role of teachers is to equip students to reason, reflect, and make decisions independently without prodding from teachers or assignments.
- The definition of HOTS in terms of ‘problem solving’ is the students’ thinking skills to find out or come up with solutions when they encounter problems. The teaching goal is to facilitate students to have the skills to identify and solve problems both in their academic fields and daily life.

Based on the definitions, HOTS help to train students’ thinking skills and develop the higher-level ability to analyze facts and opinion, evaluate them, and find a solution to a problem.

2.2 Textbook

A textbook is a valuable source of instructional materials for teaching and learning. [Richard \(2001, p. 1\)](#) mentioned that ‘textbook provides the basic content of the lessons, the balance of skill taught, and kinds of language practice that students take part in’. According to [Tomlinson \(2012\)](#), a textbook is a resource that includes both exercises and resources for teaching and learning. Furthermore, it helps teachers provide teaching materials that motivate students and can be a basis for developing a teaching method when used in the long term.

The Indonesian government should create a clear policy governing the publication of textbooks for students due to its essential role in teaching and learning. A good and well-organized textbook can give balanced materials which are helpful in improving students’ knowledge and understanding. Ministry of National Education Regulation No. 2 of 2008 defines textbook in the following statement.

Buku teks pelajaran pendidikan dasar, menengah, dan perguruan tinggi yang selanjutnya disebut buku teks adalah buku acuan wajib untuk digunakan di satuan pendidikan dasar dan menengah atau perguruan tinggi yang memuat materi pembelajaran dalam rangka peningkatan keimanan, ketakwaan, akhlak mulia, dan kepribadian, penguasaan ilmu pengetahuan dan teknologi, peningkatan kepekaan dan kemampuan estetis, peningkatan kemampuan kinestetis dan kesehatan yang disusun berdasarkan standar nasional pendidikan (Permendiknas No. 2 Tahun 2008). [The textbook of primary, secondary, and university education, which would later be called as textbook is a compulsory reference book to use in primary, secondary, and university courses. It contains the learning materials to improve faith, education, noble character and personality, scientific and technological mastery, aesthetic sensitivity and ability, kinaesthetic and health skills, and it must meet national education standards.] (Ministry of National Education Regulation Number 2 of 2008)

According to [Richards \(2001\)](#), textbooks in language learning have eight advantages, as follows: (1) textbooks contain a systematically-planned and developed

syllabus which helps a teacher prepare materials, (2) textbooks have a standardized instruction which can be used by students in different classes; hence, their understanding of the lessons taught can be tested in the same way, (3) a well-developed textbook maintains quality; hence, the learning goals set by the curriculum can be achieved, (4) textbooks are additional sources of information, workbooks and Audio CDs are frequently included with textbooks, which means that they offer a variety of learning options, (5) textbooks are influential because they free up teachers' time to focus more on instructing students and less on creating materials, exercises, and assessments, (6) textbooks can offer precise language input and applicable language models, supporting instructors whose first language is not English, (7) textbooks contain clear instructions that enable teachers who have limited teaching experience to explain material to students well and make varied classroom activities, and (8) commercial textbooks typically adhere to strict production and design standards; therefore, both students and teachers find them appealing. Hence, from the explanation above, textbooks are essential resources for teachers as they facilitate the preparation of learning materials and for students as they offer organized materials and exercises that improve their knowledge.

2.3 Revised Bloom's Taxonomy (RBT)

Bloom's Taxonomy was developed in 1956 by American educational psychologist Dr. Benjamin Samuel Bloom. The taxonomy is a graded system for classifying thinking abilities from a lower to a higher degree of thinking (Duc, 2010). It is a hierarchical classification that differentiates the levels of human cognition. The taxonomy was revised by Bloom's former students, Lorin Anderson and David Krathwohl in 2001. Table 1 presents the structure of the knowledge dimension of the revised Bloom's taxonomy.

Table 1. Knowledge dimension of revised Bloom's taxonomy (Anderson & Krathwohl, 2001, p. 44).

No	Knowledge dimension	Explanation
1	Factual knowledge	It is the fundamental skill that students need to understand or use to solve problems. It includes knowledge of language and expertise in specific components, such as vocabulary.
2	Conceptual knowledge	Conceptual knowledge is the relationship between the fundamental components of a more significant structure that allows them to work as a unit. It contains informational classification and categorization systems.
3	Procedural knowledge	It is the knowledge of the thought process, including criteria for applying skills, procedures, and methods of inquiry.
4	Metacognitive knowledge	It is the general knowledge about one's cognition, including cognitive tasks that are contextual and conditional knowledge.

The dimension of the thought process is where Bloom's taxonomy original and revised versions diverge most significantly. The original taxonomy only has one dimension, which is divided into six categories: 'knowledge', 'comprehension', 'application', 'analysis', 'synthesis', and 'evaluation'. On the other hand, the updated Bloom's taxonomy contains two dimensions: the knowledge dimension and the cognitive process dimension. Factual, conceptual, procedural, and metacognitive knowledge make up the knowledge dimension. The cognitive process dimension

consists of six cognitive levels, namely ‘remember’, ‘understand’, ‘apply’, ‘analyze’, ‘evaluate’, and ‘create’.

The six categories of the revised Bloom’s taxonomy cognitive domain are divided into lower and higher levels of thinking by [Anderson and Krathwohl \(2001\)](#). The lower level of the thinking process is called low-order thinking skills (LOTS). LOTS level consists of three cognitive levels, namely ‘remember’ (C1), ‘understand’ (C2), and ‘apply’ (C3). The higher level is called higher order thinking skill (HOTS) which consists of three higher cognitive levels, namely ‘analyze’ (C4), ‘evaluate’ (C5), and ‘create’ (C6). At the HOTS level, the thinking process involves critical, logical, reflective, metacognitive, and creative thinking. The order of the six categories of cognitive process in the original version changes, as shown in Figure 1.

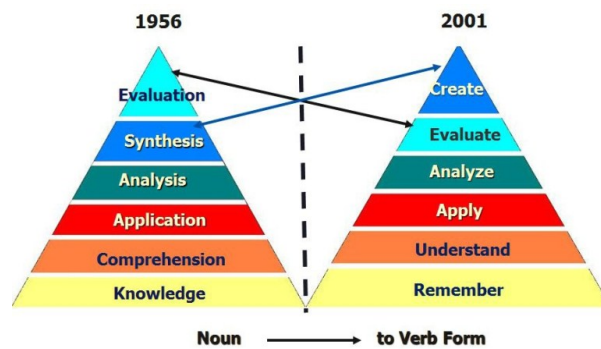


Figure 1. The cognitive domain of Revised Bloom’s Taxonomy ([Anderson & Krathwohl, 2001, p. 268](#))

The six cognitive process dimensions of the revised Bloom’s taxonomy are explained below.

- Remember: ‘Remember’ is the lowest cognitive domain of the revised Bloom’s taxonomy that refers to retrieving relevant knowledge from long-term memory. In other words, it is the ability to recall definitions, facts, or lists, or to recite previously learned information. According to [Anderson and Krathwohl \(2001\)](#), the thinking process of remembering is divided into two categories, namely recognizing and recalling. Recognizing is the process of identifying the information in the long-term memory consistent with the presented material while recalling is the process of retrieving relevant information from the long-term memory.
- Understand: ‘Understand’ refers to creating meanings from various functions, including interpreting, exemplifying, categorizing, summarizing, inferring, contrasting, and explaining. These tasks can be performed with textual or graphic information.
- Apply: Applying something is carrying out, employing, performing, or implementing a procedure. It is a situation where knowledge is used through products like models, presentations, interviews, or simulations.
- Analyze: ‘Analyze’ is to divide something into its components and ascertain how those parts connect to a larger framework or goal. Differentiating, arranging, assigning, and being able to discriminate between the components or parts are mental processes that are a part of this function.
- Evaluate: ‘Evaluate’ refers to the capacity to form opinions based on predetermined standards and criteria through assessment and checking. Students must be able to

assess the reliability of the information they receive and avoid bias to make sensible decisions.

- **Create:** To ‘create,’ a person must have the mental capacity to arrange various components into a new pattern or structure through generating, planning, and producing. Students are expected to be able to come up with answers to problems and invent new things at this level.

Furthermore, each cognitive level has action verbs as keywords, as presented in Table 2.

Table 2. A guide for the levels of cognitive based on revised Bloom’s taxonomy (Anderson & Krathwohl, 2001, pp. 66-68).

Cognitive domain	Definition	Keywords
Remember	To exhibit memory of the previously-learned materials by recalling facts, terms, basic concepts, and answers.	Choose, define, find, how, label, list, match, name, omit, recall, relate, select, show, spell, tell, what, when, where, which, who, why.
Understand	To demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, describing, and stating main ideas.	Classify, compare, contrast, demonstrate, explain, extend, illustrate, infer, interpret, outline, relate, rephrase, show, summarize, and translate.
Apply	To solve problems in a new situation by applying the acquired knowledge, facts, techniques, and rules differently.	Apply, build, choose, construct, develop, experiment with, identify, interview, make use of, model, organize, plan, select, solve, utilize.
Analyze	To examine and break down information into parts by identifying motives or causes to make inferences and find evidence to support generalization.	Analyze, assume, categorize, classify, compare, conclusion, construct, discover, dissect, distinguish, divide, examine, function, inference, inspect, list, motive, relationships, simplify, survey, take part in, test for, theme.
Evaluate	To present and defend opinions by making judgments about information, the validity of ideas, or the quality of work based on a set of criteria.	Agree, appraise, assess, award, choose, compare, conclude, criteria, criticize, decide, deduct, defend, determine, disprove, estimate, evaluate, explain, importance, influence, interpret, judge, justify, mark, measure, opinion, perceive, prioritize, prove, rate, recommend, rule on, select, support, value.
Create	To compile information differently by combining elements in a new pattern or proposing alternative solutions.	Adapt, build, change, choose, combine, compile, compose, construct, create, delete, design, develop, discuss, elaborate, estimate, formulate, happen, imagine, improve, invent, make up, maximize, minimize, modify, original, originate, plan, predict, propose, solution, solve, suppose, test, theory.

2.4 Reading Comprehension

Reading is an activity of acquiring knowledge and information by involving a cognitive process in understanding texts from printed or non-printed media. According to Urquhart and Weir (2013), reading is acquiring and decoding written information in a language. It is one type of communication between a reader and writer, and in this

case the reader attempts to comprehend the idea conveyed by the writer in a text. The readers attempt to relate what they read to what they already know as they acquire information and knowledge (prior knowledge) (Spratt et al., 2005). Additionally, Grabe (2001) stated that reading is the process of understanding what a writer intends to convey in writing. The readers' cognitive processes are involved while reading because they attempt to understand and learn from what they read.

On the other hand, comprehension is the capacity to break down words into their broad main ideas and then combine them to create a new understanding. It is accomplished when a reader successfully draws out relevant information from a text and puts it together into their own understanding (Grabe & Stoller, 2002). Therefore, Mayer (2003) concluded that reading comprehension is a strategy to help learners be more successful in extracting knowledge from texts. By connecting what individuals read and their prior knowledge, meaning interpretation and text comprehension can be accomplished. In addition, Febrina et al. (2019) stated that reading comprehension is the process of fully understanding the meaning of a text. Reading comprehension is also an active process in which a reader uses prior knowledge to comprehend the text and create meaning.

2.5 Reading Comprehension Questions

Comprehension questions are used to measure how much a text is understood. Also, students can develop comprehension and infer meanings from a text by answering reading comprehension questions, which raises their cognitive level. According to Muayanah (2014), reading comprehension exercises can help students' cognitive levels improve during the reading comprehension process.

Moreover, according to Day and Park (2005), there are five categories of reading comprehension questions: yes-or-no questions, alternative questions, true-or-false questions, WH-questions, and multiple-choice questions. First, a yes/no question is a common form of comprehension question that can be answered by either yes or no, such as the question 'Is Mario a reporter?'. Alternative questions are two or more questions connected by the connecting conjunction 'or'. An example of this question is 'Does the teacher give his students a chance to ask a question or does he simply continue to the next lesson?' Then, a true or false question asks students to choose between true or false options, as in 'The farmer in the text is a diligent and hard-worker person. Is this statement true or false?' After that, WH-questions are questions beginning with 'what, where, who, when, why, and how'. This type of question can improve students' understanding of a text. Finally, multiple choices are comprehension questions that provide three or more choices, but there is only one correct answer. Multiple choices can be based on other types of questions, such as WH questions.

2.6 How Critical Thinking is Designed in Learning Material

The presentation of learning materials in the twenty-first century should be enhanced and integrated with the four Cs: communication, collaboration, creativity, and critical thinking. Of the four skills, critical thinking should be given the most emphasis in the classroom, and as a result, it should be effectively included in students' textbooks to develop students' critical thinking. Critical thinking skill is a person's ability to use self-reflective, logical, and reasonable reasoning to collect, interpret, and

evaluate facts to draw a conclusion (University of Sydney, 2014). Additionally, the ability to apply a number of broad cognitive processing skills that fall under high-order thinking levels of analyzing, evaluating, and developing new ideas or things is what Kivunja (2015) characterized as critical thinking. This capacity allows students to think deeply to approach problems that are unfamiliar to them in novel ways.

Therefore, it is crucial to integrate HOTS into educational materials since this will help students in developing their critical thinking skills. Klynhout (2018), as cited in Alghamdi (2022), suggested avoiding using questions with a clear Yes or No response in order to encourage students to use their critical thinking skills, but we can ask 'How do you know..., What tells you..., and Why...' instead. Instead of just giving a one-word response that can be found in a dialogue or book, these questions allow students to show that they have understood the material. Such inquiries, as opposed to those that only encourage simple recollection and reporting, can encourage higher-order thinking skills of analysis and interpretation.

3. METHODS

Using a content analysis approach, the researchers analyzed reading comprehension exercises in the textbook 'Bahasa Inggris SMA/MA/SMK/MAK for Grade 12' based on the revised Bloom's taxonomy. Content analysis can be used in a descriptive study to make valid inferences from texts (Krippendorff, 2004). It uses a systematic set of procedures to assess the quality of documents, discourses, and books (Wahyuni, 2011).

As a tool for data collection, the researchers used a checklist table proposed by Pratiwi (2014), which is based on the revised Bloom's taxonomy. Then, the researchers gathered and listed all reading comprehension questions preceded by WH-question words from the predetermined textbook. The next step was sorting the questions based on each chapter of the textbook in the columns of the checklist table, followed by examining all the questions collected in the checklist table and categorizing them into HOTS or LOTS questions. Finally, the researchers interpreted the data qualitatively. The percentage distribution of data was calculated using a straightforward procedure suggested by Sudjiono (2005) to determine the percentage of the six cognitive levels of the revised Bloom's taxonomy.

The researchers used an analysis card as a guide while analyzing the reading comprehension questions in the checklist table. After that, the researchers looked at the reading comprehension questions and identified the cognitive level of each question. The researchers then marked the (√) in the checklist table by the cognitive level of the question. After that, all the questions were divided into two groups: HOTS and LOTS. In order to determine if HOTS had been distributed correctly in the reading comprehension question of the textbook, the total number of the distribution of LOTS and HOTS questions were compared.

The main focus of this study was on the distribution of the top three levels of higher-order thinking skills, the cognitive domain covered by the revised Bloom's taxonomy. The C4 level was for analysis, the C5 level was for evaluation, and the C6 level was for creation (C6). The results of the data analysis were then qualitatively analyzed by the researchers to answer the research question.

4. RESULTS

Out of 150 exercises in the textbook ‘Bahasa Inggris SMA/MA/SMK/MAK for Grade 12’, nine of them were reading comprehension exercises. These exercises included 67 reading comprehension questions that could be found in the first six chapters, i.e. chapters 4, 5, 6, 7, 9, and 10. However, none appears in chapters 1, 2, 3, 8, or 11. This shows that reading comprehension exercises were distributed sparingly in each textbook chapter. The distribution is shown in Table 3.

Table 3. Cognitive domain distribution table of reading comprehension questions.

No.	Chapter	Reading comprehension questions	Cognitive domain of Bloom's Taxonomy					
			Low Order Thinking (LOT)			Higher Order Thinking (HOT)		
			C1	C2	C3	C4	C5	C6
	4	Task 1						
1		What is the type of the following text?		✓				
2		Why do people write this kind of text?					✓	
3		What is the meaning of the words in italics in the text?		✓				
	4	Task 2						
4		Who wrote the application letter?	✓					
5		What is the purpose of writing the letter?		✓				
6		What position is being advertised?	✓					
7		How did Lilis Handayani know about the vacancy?	✓					
8		What is Lilis' current position?	✓					
9		What has her current position been provided with?	✓					
10		What other responsibilities does she have at the moment?	✓					
11		How do you know that Lilis is confident about her competence?				✓		
	5	Task 1						
12		What is the source of the text?	✓					
13		What is the text about?		✓				
14		What is the social function of the text?		✓				
15		Why do you think living in an apartment is getting popular?					✓	
16		What are some regulations for living in an apartment?	✓					
17		Who set the regulations?	✓					
	5	Task 2						
18		What is the news about?		✓				
19		Who wrote the news?	✓					
20		When was the news published?	✓					
21		Who was Trisha Prabhu?	✓					
22		Why was she called a ‘tech whiz’?	✓					
23		What did she create?	✓					
24		How does Rethink work?				✓		
25		What prompt appears as a warning?	✓					

Table 3 continued...

26		Did Trisha conduct trials to prove how the software works? What did the result show?	✓					
27		What has inspired Trisha to develop the software?	✓					
28		How does the 'stop, block, and tell' method work?				✓		
29		What did Trisha think about technology and responsibility among teens?	✓					
30	6	What is the main problem faced by the parents?		✓				
31		Why did the parents feel disappointed with the online system?		✓				
32		Who was rejected from school due to his/her height?	✓					
33		What happened to Nuraisyah Paransa's son?	✓					
34		What makes the online system problematic this year?	✓					
35		Why do people prefer public schools to private schools?		✓				
36		What will you do to deal with the problems in the online system if you were one of the parents?						✓
37		What do you think about the acting governor's response to parents' protest?					✓	
38		How would you respond to the parents' concerns if you were the acting governor?						✓
39	7	What was the main agenda of the conference?	✓					
40		What was probably the main reason for holding the conference?		✓				
41		Why was Surabaya selected to be the conference venue?		✓				
42		How important was the conference for Indonesia?					✓	
43		What did Rismaharani believe to be the best municipal management?	✓					
44		What made the mayor very convinced about her waste management?	✓					
45		How did the mayor educate students to live a zero-waste lifestyle?		✓				
46		What do you think about the mayor's concept of municipal management?					✓	
	9	Task 1						
47		What is the text talking about?		✓				
48		What is the purpose of the text?		✓				
49		What parts does the text have?	✓					
50		How many materials are needed to make it?	✓					
51		How many steps are there?	✓					
52		What are they?	✓					

Table 3 continued...

53		Why do you think the steps have to be put in order?					✓	
54		What should we do if we want to have male or female leopard geckos?	✓					
	9	Task 2						
55		What is the text discussing about?		✓				
56		What is the purpose of the text?		✓				
57		How many parts does the text have?	✓					
58		How many steps are there? What are they?	✓					
59		Why do you think the steps have to be put in order?					✓	
60	10	How many Photoshop tools are introduced in the text above?	✓					
61		What is the most important element in Photoshop?	✓					
62		Why should you always label your layer?		✓				
63		What can you do with layers?	✓					
64		How can you customize your own color in Photoshop?	✓					
65		What should you do to add text to your photo?	✓					
66		What tool will you use if you want to show only part of your picture?	✓					
67		What further information do you need so that you can really operate Photoshop?				✓		
		Total	37	17	0	4	7	2
			54			13		
		Score	54/67 X 100%= 80.6 %			13/67 X 100%= 19.4%		

Based on Table 3, we can see that only 13 out of 67 questions belong to the HOTS category. The HOTS cognitive level of each question is explained as follows:

- Question 2: Why do you think people write this kind of text?

This question falls into ‘evaluate’ level (C5) because students are asked to give an opinion about why people write that type of reading text. In other words, the question asks students to justify, criticize, or give their own opinion about why they think people write the text. Therefore, the question belongs to the evaluation level (C5). This level is one of the three cognitive levels of thinking included in the HOTS. At this level, students are required to decide the quality of material or ideas based on specific criteria and standards by checking, criticizing, and justifying.

- Question 11: How do you know that Lilis is confident about her competence?

This question refers to the ‘analyze’ level (C4) because students need to analyze Lilis’ characters to know if Lilis is confident about her competence. To rephrase it, the question asks students to identify and differentiate Lilis’ certain characters that show she is confident in her competence.

- Question 15: Why do you think living in an apartment is getting popular?

This question refers to the ‘evaluate’ level (C5) because students are required to give an opinion by criticizing and checking information based on criteria and

standards. The question requires students to consider why living in an apartment is popular.

- Question 24: How does Rethink work?

This question belongs to the ‘analyze’ level (C4) because students are requested to examine specific information from the given text and separate it into parts to make inferences about how Rethink works. In other words, students need to be able to analyze how Rethink works and explain it in their own words.

- Question 28: How does the ‘stop, block, and tell’ method work?

This question is included in the ‘analyze’ level (C4) because students are asked to analyze, identify, and explain the information from the text about how the ‘stop, block, and tell’ method works. They must break down the concept of how the method works into pieces of information to understand its organizational structure.

- Question 36: What will you do to deal with the problems in the online system if you were one of the parents?

This question falls into the ‘create’ level (C6) because it requires students to solve problems in the given text. The question asks students to write down their solutions of how to deal with the problem in the online system if they were one of the parents. The ‘create’ level is the highest level of the thinking process of the six cognitive levels in the revised Bloom’s taxonomy.

- Question 37: What do you think about the acting governor’s response to parents’ protest?

This question is in the ‘evaluate’ level (C5) because students are asked to give their opinion about the quality of ideas based on specific standards. The question requires students to justify and criticize how the governor responds to the parents’ protest.

- Question 38: How would you respond to the parents’ concerns if you were the acting governor?

This question belongs to the ‘create’ level (C6) because it asks students to create or produce an alternative solution to solve the problem being discussed in the given text. The question asks students to determine how they would respond to the parents if they were the acting governor.

- Question 42: How important was the conference for Indonesia?

This question falls into the ‘evaluate’ level (C5) because students are asked to consider a particular problem in the given text through checking and criticizing. The question requires students to justify how important the conference is for Indonesia.

- Question 46: What do you think about the mayor’s concept of municipal management?

This question is at the ‘evaluate’ level (C5) because students are required to give their opinion about a particular problem in the text. They must give their own opinion about how the mayor’s concept of municipal management.

- Question 53: Why do you think the steps have to be put in order?

This question refers to ‘evaluate’ level (C5) because students need to give their opinion about the question related to the given text. They should write their opinion about why the steps must be put in order.

- Question 59: Why do you think the steps have to be put in order?

This question is similar to question 53, which can be categorized into the ‘evaluate’ level (C5) because students are requested to give their opinion. They are required to write their own opinion about why the steps must be put in sequence.

- Question 67: What further information you need so that you can really operate Photoshop?

This question belongs to the ‘analyze’ level (C4) because students have to analyze what further information they have to know if they want to be able to work with Photoshop. The question asks students to divide information into some pieces so that the relationship between one part and another can be understood. They must search for additional information from any sources on how to use Photoshop.

The percentages and frequencies of LOTS and HOTS questions are described in Table 4.

Table 4. Frequencies and percentages of reading comprehension questions.

No.	Cognitive dimension level		Frequencies	Percentage	
1	LOTS	Remember (C1)	37	55.3%	54 (80.6%)
2		Understand (C2)	17	25.4%	
3		Apply (C3)	0	0%	
4	HOTS	Analyze (C4)	4	5.9 %	13 (19.4%)
5		Evaluate (C5)	7	10.5 %	
6		Create (C6)	2	2.9 %	
		Total	67	100%	100%

Table 4 shows that the percentage of questions which fall into the higher-order thinking skill (HOTS) level is lower than the percentage of the questions which belong to the lower-order thinking skill (LOTS) level. The HOTS category only consists of 13 out of 67 questions (19.4%), while the LOTS category has 54 out of 67 questions (80.6%). This result suggests that this textbook contains a low frequency of HOTS questions. There are only four questions (5.9%) at the ‘analyze’ level (C4), seven questions (10.5%) at the ‘evaluate’ level (C5), and two questions (2.9%) at the ‘create’ level (C6).

5. DISCUSSION

Based on the analysis of HOTS in the reading comprehension questions in the textbook entitled ‘Bahasa Inggris SMA/MA/SMK/MAK for Grade 12’, the researchers found that HOTS levels, namely ‘analyze’ level (C4), ‘evaluate’ level (C5), and ‘create’ level (C6), were not sufficiently integrated into the textbook. In other words, LOTS questions were distributed more dominantly than HOTS questions. Unfortunately, the ‘remember’ level (C1), which is the lowest level in LOTS, is the most frequently found in the textbook (37 out of 67 questions or 55.3%). This result indicates that the textbook authors emphasize the student’s ability to recognize and recall information from their long-term memory rather than train them to be critical thinkers. This result contradicted the statement of [Wu and Pei \(2018\)](#) that HOTS-based questions should be ideally used more frequently, especially for developing critical thinking as one of the essential 21st-century skills.

However, this present study was in line with the result of [Fahmi \(2020\)](#) whose research focused on the use of HOTS in reading comprehension questions from the English textbook ‘When English Rings A Bell’ for the 8th grade of junior high school students. He also focused on the distribution of the top three cognitive levels of the revised Bloom’s taxonomy, namely C4, C5, and C6. Using content analysis and

descriptive qualitative methods, he investigated the reading comprehension questions in the textbook. The result of his research showed that there were 69 HOTS questions found in the reading comprehension questions of the textbook. The most dominant HOTS questions belong to C4 level (48 questions), followed by the C5 level (13 questions) and C6 level (8 questions).

Another similar research was conducted by [Damanik and Zainil \(2019\)](#), who found only 9.7% of HOTS questions in the reading comprehension questions in the textbook. The most frequently tested HOTS questions were the ‘analyze’ level (C4). The knowledge found in the questions was factual, conceptual knowledge, procedural knowledge, and metacognitive knowledge. This was similar to the result of the study conducted by [Janah \(2020\)](#), who showed that LOTS dominated the exercises with a percentage of 55.6%, and the ‘remember’ level (C1) had the highest percentage (37.7%).

The findings were also in line with the findings of [Fajri \(2015\)](#). In his study, Fajri investigated the levels of reading comprehension questions in the textbook and focused on analyzing the distribution of each level of the questions using the revised Bloom’s taxonomy. He found that there were only four out of six levels of questions, namely ‘remember’ (C1), ‘understand’ (C2), ‘analyze’ (C4), and ‘evaluate’ (C5). Meanwhile, the textbook did not use two other levels, namely ‘apply’ (C3) and ‘create’ (C6). In fact, the questions that most frequently appeared in the book were categorized as low-order thinking skills (LOTS). Similarly, another study conducted by [Fitrawati et al. \(2019\)](#) found that the textbooks were more inclined toward LOTS questions.

The twelfth-grade students should have been working on improving their HOTS hence they could compete in this 21st century workplace. The globalization era is full of challenges and competition; therefore, students are required to have critical thinking skills and be creative in solving problems. As [Williams \(2015\)](#) stated, HOTS must be taught and included at various points of students’ lessons to encourage them to think broadly and face new challenges.

Furthermore, it is essential to analyze how well higher-order thinking skill (HOTS) questions are integrated into the reading comprehension tasks of senior high school textbooks. As [Pratiwi \(2014\)](#) stated, essay questions could give a broader insight into students’ thinking; hence, they could train their HOTS properly. Additionally, according to [Day and Park \(2005\)](#), WH-questions are more suitable for assisting students in developing a literal grasp of the text, rearranging material in the text, creating an evaluation, and providing a personal response. In addition, WH-questions can promote higher-order thinking skills because these questions will encourage students to think critically about the information they read in the text, gain a deep understanding, find detailed information, and make inferences. Furthermore, according to [Muayanah \(2014\)](#), reading comprehension exercises can facilitate students’ cognitive development. In addition, [Ariyana et al. \(2018\)](#) stated that ensuring students can analyze, evaluate, and create solutions is one of the learning goals of enhancing students’ HOTS.

6. CONCLUSION

It may be inferred from the results of this study that the reading comprehension questions in the textbook ‘Bahasa Inggris SMA/MA/SMK/MAK for Grade 12’ did not

sufficiently integrate higher-order thinking skills (HOTS). Meanwhile, lower-order thinking skills (LOTS) questions are more prevalent than HOTS questions in the reading comprehension questions in the textbook. It means there are not enough HOTS-level questions in the reading comprehension exercises in the textbook. The distribution of HOTS and LOTS questions in the reading comprehension tests differs significantly. The reading comprehension exercises in this textbook continue to favor LOTS questions over HOTS questions. Only 13 out of 67 questions, or 19.4%, were assigned to the HOTS categories, while 54 out of 67 questions, or 80.6%, were assigned to the LOTS categories. The 'create' level (C6) had the lowest distribution of the three HOTS levels, indicating that HOTS were not appropriately integrated into the reading comprehension questions of the textbook.

The researchers would like to present some suggestions related to the topic discussed in this study. First of all, English teachers need to evaluate the materials and tasks of a textbook before using them to teach their students. It is better to check whether the tasks in the textbook have met students' needs in improving their HOTS. Teachers must be more considerate in selecting the appropriate textbook hence students can improve their HOTS. Moreover, the publishers that develop English textbooks to fulfil the goals of the Curriculum 2013 must design a textbook that can improve the ability of senior high school students to a higher level of thinking skills. In order to train students' reading skills, textbook publishers must provide various HOTS questions in reading comprehension exercises; as a result, students will not only comprehend the text they read but also learn to analyze, evaluate information, ideas and values of the reading text, and create a solution.

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