An Analysis of Higher-Order Thinking Skill Questions in Reading Exercises of Pathway to English (2022 Edition) for the Tenth Grade of Senior High School

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Abstract

This research aimed to analyze Higher-Order Thinking Skill (HOTS) questions in reading exercises of the Pathway to English textbook for the tenth grade of senior high school. Higher-Order Thinking Skill (HOTS) refers to advanced cognitive abilities that involve analyzing, evaluating, and creating, which are the three levels of thinking in the revised Bloom's taxonomy. This research employed a quantitative descriptive design. The researcher collected data from the textbook and used a checklist table to gather a list of questions. The researcher used Revised Bloom's Taxonomy indicators to categorize the reading questions. The results showed that the total number of HOTS questions was 73 or 28.74% out of 254 reading questions. Then, the total for each HOTS level question was 37 questions or 14.56% for the Analyzing level, 29 questions or 11.41% for the Evaluating level, and seven questions or 2.75% for the Creating level. The total number of LOTS questions was 181 or 71.26% out of 254 reading questions. The percentage of Higher-Order Thinking Skill (HOTS) questions was lower than the total Lower-Order Thinking Skill (LOTS) questions. However, the percentage of HOTS levels in this textbook, which adopts the Merdeka Curriculum, is higher than in textbooks adopting the previous curriculum, the 2013 Curriculum.

INTRODUCTION

Textbooks play a crucial role in English teaching and learning as they determine the components and learning strategies, control the content and methodology, and serve as instructional tools for teachers. Students rely on textbooks to understand and engage with the materials presented, using them as a medium to acquire updated information. While some teachers heavily rely on textbooks, others may modify or supplement them according to their preferences or limitations. Despite variations in classroom practices, the significance of textbooks in facilitating

English teaching and learning cannot be ignored. One textbook widely used by senior high school teachers is the *Pathway to English* textbook for the tenth grade of senior high school, written by Th. M. Sudarwati & Eudia Grace, and published by Erlangga in 2022.

This textbook offers numerous advantages, including diverse texts that expose students to different genres and themes, promoting language skills and cultural knowledge. It also provides ample reading activities and questions that actively engage students, fostering critical thinking and reading proficiency. Moreover, it aligns with the *Merdeka* Curriculum, ensuring compliance with current educational standards and objectives. Overall, the *Pathway to English* textbook offers a comprehensive and engaging learning experience that enhances students' reading proficiency, critical thinking abilities, and overall language development, all in line with the *Merdeka* Curriculum.

The *Merdeka* Curriculum is designed to enhance students' interests and abilities by focusing on essential subjects, character development, and student competencies. It emphasizes student-centered learning, in contrast to previous teacher-centered approaches. English lessons now start from primary school, highlighting the language's importance in the current era. The *Merdeka* Curriculum, promoted by the Minister of Education and Culture, Nadiem Makarim, is more concise, clear, and flexible, aiding learning recovery after the Covid-19 pandemic (Kurikulum Merdeka, 2022). It also aims to align Indonesian education with global standards and meet the demands of the 21st century, which require competencies in critical and creative thinking, problem-solving, communication, collaboration, digital literacy, technological literacy, and living (Putriani & Hudaidah, 2021). These competencies are essential for individuals to adapt and succeed in the competitive global workforce.

The existence of HOTS (Higher-Order Thinking Skill) questions in the textbook aims to develop the competencies described in Bloom's taxonomy which categorizes cognitive levels. This study uses Anderson & Krathwohl's Revised Bloom's taxonomy, which includes six cognitive process domains: remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001). Higher-order thinking skill questions can be found in the *Pathway to English* textbook, a textbook that has adopted the *Merdeka* Curriculum.

The *Pathway to English* focuses on teaching the four basic skills of reading, listening, speaking, and writing. However, reading poses challenges for Indonesian students learning English as a foreign language, as it is a complex skill that even native speakers find difficult (Harmer, 1996). Given the importance of developing critical thinking skills in reading and enabling students to thrive in English communication environments, the researcher narrows the scope of the study to higher-order thinking skill questions within reading exercises.

In addition, there are a lot of reading exercises in the *Merdeka* Curriculum. The *Merdeka* Curriculum emphasizes the Genre-based approach, which centers on text-based strategies and requires students to study six types of reading texts: narrative, descriptive, recount, procedure, report, and analytical exposition. As reading exercises in the curriculum demand responses at different levels of thought, teaching and training students in higher-order thinking skills become crucial. Reading

involves more than word decoding and requires higher-order thinking abilities (Linse, 2006). Moreover, the *Pathway to English* textbook offers a range of reading tasks, including matching, picture-cued, gap-filling, multiple-choice, and open-ended questions, to enhance students' understanding of language and texts (Brown, 2003).

Several studies have similarities with this research. These studies analyzed the same thing: HOTS questions on reading exercises. Daniati and Fitrawati (2020) analyzed the *Bright* an english textbook for the ninth grade of junior high school, published by Erlangga in 2018. Yana and Zainil (2019) analyzed the English Handbook for SMAN Kota Padang. Damanik and Zainil (2019) analyzed the English Textbook used in the tenth grade of SMAN 2 Padang. Ilma' (2018) analyzed the *Bright* textbook for the seventh grade of junior high school in 2013 Curriculum, published by Erlangga in 2016. Pratiwi (2014) analyzed the *Pathway to English* textbook for eleventh grade of senior high school students.

Previous studies focused on analyzing Higher-Order Thinking Skill (HOTS) questions in reading exercises based on the Revised Bloom's Taxonomy found in textbooks following the 2013 Curriculum, which is no longer in use. However, since all schools currently utilize textbooks aligned with the latest curriculum, the *Merdeka* Curriculum, there is a need to analyze HOTS questions in reading exercises using the Revised Bloom's Taxonomy in these updated textbooks.

The lack of research on Higher-Order Thinking Skill (HOTS) questions in reading exercises found in textbooks aligned with the *Merdeka* Curriculum can be influenced by the recent implementation of the *Merdeka* Curriculum and the publication of corresponding textbooks. The researcher aims to investigate the potential impact of curriculum changes on the number and level of HOTS questions, particularly in reading activities. As the curriculum evolves and improves, changes in textbook content are expected. However, there is currently a lack of academic studies comparing the development or increase in the quantity of HOTS questions in reading activities between the *Merdeka* Curriculum and the previous 2013 Curriculum, highlighting the need for further investigation in this area.

The researcher aims to determine whether the *Pathway to English* textbook for the tenth grade of senior high school, written by Th. M. Sudarwati & Eudia Grace, published by Erlangga in 2022, contains an adequate number of Higher-Order Thinking Skill (HOTS) questions in its reading exercises. The purpose is to assess if the textbook effectively supports students' competence in developing higher-order thinking skills necessary for thriving in an English-speaking environment. Additionally, the researcher analyzes the distribution of HOTS questions throughout the textbook.

METHOD

This study employs quantitative descriptive research. Quantitative descriptive research involves investigating a social issue by collecting numerical data and analyzing the data using statistical techniques (Aliaga & Gunderson, 2002). It gathers data to depict and describe events (Glass & Hopkins, 1984).

The data of this research is all of the reading questions found in the textbook. From 223 activities, the researcher found 112 reading activities. And from those 112 reading questions, the researcher found 254 reading questions.

The data for this study comes from the *Pathway to English* textbook for the tenth grade of senior high school. The textbook is written by Th. M. Sudarwati & Eudia Grace, edited by R. Intan Al Baluni and Dwi Wahyu Priyanto, and published by Erlangga in 2022. The textbook has adopted the current curriculum, indicated by the presence of the *Merdeka* Curriculum logo on the cover.

To analyze the reading questions in the textbook, the researcher used an Analysis Card and a Checklist Table as research instruments. The Analysis Card, based on the revised Bloom's Taxonomy that is adjusted from Anderson & Krathwohl (2001) and Pohl (1999), provided indicators and sample questions for each level of the cognitive domain. The Checklist Table was used to categorize the thinking level of each question according to the Analysis Card.

The questions of each thinking level were counted based on the following formula:

$$P = n / N \times 100 \%$$

Items:
P= Percentage
n= number of questions based on Revised Bloom's Taxonomy level
N= The Total Number

After categorizing the questions, the researcher focused on higher-order thinking skills questions. Descriptive analysis was employed to interpret the results.

RESULTS AND DISCUSSION
Data Description

The *Pathway to English* textbook provides various activities across its six units. However, this research focuses solely on the reading activities within the textbook. The reading exercises consist of 254 questions, classified into six levels of thinking based on the revised Bloom's Taxonomy. The distribution of questions across these levels is as follows: 58 questions, or 22.83%, fall under the Remembering level (C1); 101 questions, or 39.76%, fall under the Understanding level (C2); 22 questions, or 8.66%, fall under the Applying level (C3); 37 questions, or 14.56%, fall under the Analyzing level (C4); 29 questions, or 11.41%, fall under the Evaluating level (C5); and seven questions, or 2.75%, fall under the Creating level (C6). The percentages show that C1, C2, and C3 belong to lower-order thinking skills, accounting for 181 reading questions or 71.26%. On the other hand, C4, C5, and C6 represent higher-order thinking skills, comprising 73 questions or 26.74% of the total. The data description can be seen in Table 1.

Table 1. *The Data Based on Six Levels of Thinking in Revised Bloom's Taxonomy*

Levels Based on The Revised Bloom's Taxonomy		Number of Reading Questions		Percentage of Reading Questions	
LOTS	Remembering (C1)	58	181	22.83%	71.26%
	Understanding (C2)	101		39.76%	
	Applying (C3)	22		8.66%	
HOTS	Analyzing (C4)	37	73	14.56%	28.74%

	Evaluating (C5)	29		11.41%	
	Creating (C6)	7		2.75%	
	Total:		**254**	**100%**	

Data Analysis and Findings

The researcher found 37 reading questions in this textbook that belong to analyzing level. It is 14.56% from 254 reading questions. The findings show this level gets the first position with the most significant portion of higher-order thinking skill questions. At this level, the questions are about breaking down complex information into smaller parts, examining the relationships between these parts, and drawing conclusions based on this analysis (Anderson & Krathwohl, 2001). It can be seen in the following explanation with a sample question:
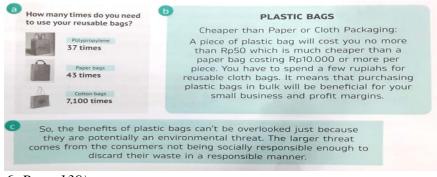
> Passenger 1: They say that the train will arrive late today.
> Passenger 2: *Uhm-hm*
> Passenger 1: I hope it will arrive in five minutes.
> Passenger 2: *Mm-hm*
> Passenger 1: So that we won't be late to the airport.
> Passenger 2: *Yeah*, I hope so.

(Unit 2, Page 33)

Question number 3) *Why should we use such expressions in conversations?* (Unit 2, Let's Begin 5, Page 34)

The question above requires the students to break down and analyze the purpose and benefits or the importance of using such expressions in conversations. To answer this question, the students need to analyze the context and purpose of the conversation and how the use of such expressions can help to achieve that purpose.

Then, in this textbook, the researcher found 29 questions that belong to evaluating level. It is 11.41% from 254 reading questions. The findings show this level gets second in higher-order thinking skill level questions. At this level, the questions are about making judgments about the value or quality of ideas, arguments, methods, or products based on criteria or standards (Anderson & Krathwohl, 2001). It can be seen in the following explanation with a sample question:
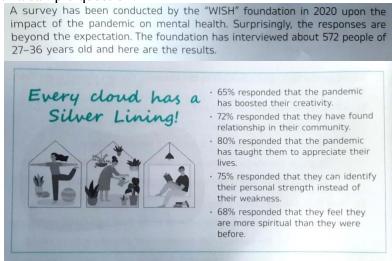

(Unit 6, Page 139)

Question number 2) *Do you agree that compared to plastic bags, people are potentially an environmental threat? Give reasons for your answer!* (Unit 6, Lead-In 2, Page 139)

The question above requires the students to evaluate and assess different perspectives and arguments to form an opinion or judgment. To answer this question, the students must evaluate the potential impact of plastic bags and people on the environment and compare the two to determine which poses a more significant threat.

In this textbook, the researcher found seven questions that belong to creating level. It is 2.75% from 254 reading questions. The findings show this level is third in higher-order thinking skill level questions. The question in Creating level is about putting together parts or elements to form a new whole, generating ideas, or producing original work (Anderson & Krathwohl, 2001). This level involves generating, planning, and producing the idea. It can be seen in the following explanation with a sample question:

(Unit 4, Pages 103-104)

Question number *2) Based on the survey, make tips entitled "Keep Living Mentally Healthy during the pandemic".* (Unit 4, Critical Thinking Tasks 3, Page 104)

The question above requires the student to create something new or original. In this case, the task is to generate tips for keeping mentally healthy during the pandemic based on the results of a survey. The task involves synthesizing information and coming up with novel ideas or solutions. It requires the use of critical thinking and creativity to develop a set of actionable tips that can help people maintain their mental health during the pandemic.

Discussion

The results of this study showed the total of higher-order thinking skill questions are 37 questions or 14.56% for Analyzing level, 29 questions or 11.41% for Evaluating level, and seven questions or 2.75% for Creating level.

The analyzing level (C4) had the highest number of Higher-Order Thinking Skills (HOTS) questions in the reading exercises, with 37 of 73 HOTS questions.

The results of this study have a similarity with the recent studies. Those studies are from Daniati & Fitrawati (2020) and Damanik & Zainil (2019), who found that analyzing is the highest level of HOTS questions.

This study and Daniati & Fitrawati's study compared books from the same publisher, Erlangga, but with different curricula. While this research had fewer reading questions than Daniati & Fitrawati's study, it surprisingly had a higher percentage of Higher-Order Thinking Skills (HOTS) questions. This implies that books adopting the *Merdeka* Curriculum have a bigger proportion of HOTS questions compared to books following the previous curriculum, the 2013 Curriculum.

A study conducted by Pratiwi (2014) also had similar findings to this research. Both studies compared the percentages of HOTS questions to LOTS questions and found that HOTS questions were lower in proportion. However, despite using textbooks with the same name and publisher, the results showed significant differences. Pratiwi's study showed that only 9.6% of the questions were HOTS, whereas this study revealed a much higher percentage of 28.74%. These differences may be attributed to changes in the curriculum leading to a rapid increase in the inclusion of HOTS questions in textbooks.

This finding indicates that curriculum changes influence the number and level of HOTS questions in textbooks. The rise in the proportion of Higher-Order Thinking Skills (HOTS) questions in textbooks aligned with the *Merdeka* Curriculum is connected to the demands of the 21st century. The 21st century Demands students to have 6C skills, where one of the C's is Critical Thinking (Choo, 2022)

The other study with a similar result is from Damanik & Zainil (2019). As per Damanik & Zainil (2019), the Higher-Order Thinking Skills (HOTS) questions in English reading comprehension exercises in textbooks nearly meet the expected proportion but fall short of meeting the criteria for a good proportion. This study also experienced the same thing with the fact that the HOTS questions on reading exercises found in textbooks were still below a good proportion. This study obtained a result of 28.74%, while a good proportion, according to Damanik & Zainil (2019), was 30%.

In applying Higher-Order Thinking Skills (HOTS) questions in reading exercises, the evaluating level (C5) obtained the second position, consisting of 29 out of 73 HOTS questions, requiring students to make judgments based on standards and criteria. However, this differs from Febrina et al.'s (2019) research, which found that LOTS questions were lower than HOTS questions, with the evaluating level (C5) being the most prominent level of HOTS.

They found that an effective textbook should prioritize Higher-Order Thinking Skills (HOTS) by including a bigger number of HOTS questions. This is essential for equipping students with critical thinking abilities and enabling them to devise solutions to various problems. Furthermore, textbooks may prioritize a higher proportion of HOTS questions at the evaluating level as it fosters students' critical thinking skills by prompting them to make informed judgments, assessments, and critiques based on evidence and criteria, facilitating deep understanding, application

of knowledge, synthesis of information, and development of higher-level cognitive abilities relevant to real-world problem-solving and decision-making.

The creating level (C6) ranked last in applying HOTS questions in reading exercises, comprising 7 out of 73 HOTS questions, requiring students to use creative thinking and problem-solving to assemble knowledge and generate new ideas. This differs from 'Ilma's (2018) research, which found the absence of creating-level questions.

The absence of creating-level questions in textbooks may be attributed to perceived difficulties in designing and assessing tasks that target this level. Creating-level tasks involve synthesizing information and generating original solutions, demanding higher cognitive and creative abilities. While the inclusion of creating-level tasks in textbooks may be limited, educators should still seek opportunities to engage students in such tasks through alternative instructional strategies and assessments to foster creativity and critical thinking.

CONCLUSION
Conclusion

In summary, the study concludes that the Pathway to English textbook has a relatively low number of Higher-Order Thinking Skills (HOTS) questions, with a stronger emphasis on the Analyzing level (C4) compared to the Evaluating level (C5) and Creating level (C6). There is a need to prioritize the development of students' evaluation and creative thinking skills, as they are currently underrepresented in the provided HOTS questions. The textbook predominantly includes lower-order thinking skill (LOTS) questions initially to establish understanding, comprehensively cover curriculum content, align with assessment criteria, and prevent cognitive overload. However, the percentage of HOTS questions in the Pathway to English textbook is higher compared to textbooks using the previous curriculum, attributed to the implementation of the *Merdeka* curriculum, which emphasizes critical thinking to meet the demands of the 21st century.

Suggestions

Based on the conclusion above, several suggestions can be made for English teachers, students/researchers, and authors of the textbook. Firstly, teachers should emphasize incorporating evaluation and creative thinking activities in the classroom, supplement the existing textbook with resources targeting higher-order thinking levels, and foster critical thinking skills. Secondly, students/researchers are encouraged to conduct further research on larger samples and in different areas, explore strategies to enhance higher-order thinking skills in English language education and investigate the impact of the *Merdeka* curriculum. Lastly, the authors of the textbook should focus on developing critical evaluation and creative thinking abilities, seek feedback from teachers and students, and collaborate with educators and researchers to explore innovative teaching methods. Overall, the aim is to create a conducive learning environment that nurtures higher-order thinking, critical evaluation, and creative thinking in English language education.

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