

THE RELATIONSHIP BETWEEN TYPE OF QUESTIONS AND COGNITIVE LEVELS IN READING TEXTS

Luthfi Awwalia

Universitas Trunojoyo Madura

luthfi.awwalia@trunojoyo.ac.id

Abstrak

Penelitian ini mengkaji hubungan antara jenis pertanyaan dan level kognitif dalam pertanyaan bacaan pada buku teks. Penelitian ini bersifat kualitatif dan menggunakan metode analisis konten.. Data yang digunakan berasal dari buku teks *Pathway to English Kelompok Peminatan* kelas dua SMA di Indonesia, dengan unit analisisnya adalah pertanyaan yang mengikuti bacaan. Data dikumpulkan menggunakan metode simak dan teknik catat. Hasil penelitian menunjukkan bahwa pertanyaan *wh-question* dominan sebanyak 140 pertanyaan (46,73%), dengan 18,78% di antaranya termasuk jenis divergent dan 46,73% jenis convergent. Level kognitif terbukti ada, meskipun didominasi oleh pertanyaan dengan kemampuan berpikir rendah, yaitu sebanyak 81,22%. Sementara itu, pertanyaan dengan kemampuan berpikir tinggi mencapai 18,78%. Jenis pertanyaan dan level kognitif memiliki keterkaitan yang erat, di mana jenis convergent merepresentasikan konsep berpikir rendah dan jenis divergent merepresentasikan sebaliknya. Kesimpulannya, buku ini telah mengimplementasikan kemampuan berpikir tingkat tinggi meskipun proporsinya tidak ideal.

Kata Kunci: *buku teks, bahasa Inggris, kemampuan berpikir, kognitif, pertanyaan*

Abstract

This study examines the relationship between question types and cognitive levels in textbook reading questions. It is qualitative and uses content analysis methods. The data were the textbook *Pathway to English Kelompok Peminatan* of second-grade high school in Indonesia, with the unit of analysis was reading questions. Data was collected using the observation method and note-taking technique. The results showed that *wh-question* was the dominant as many as 140 questions (46.73%), with 18.78% of them belonging to the divergent type and 46.73% to the convergent type. The cognitive level was proven to exist, although it was dominated by low thinking skills questions (81.22%). Meanwhile, questions with high thinking skills reached 18.78%. Question types and cognitive levels are closely related, where convergent types represent lower thinking concepts and vice versa. In conclusion, this book has implemented higher-order thinking skills although the proportions are not ideal.

Keywords: *textbook, English, thinking ability, cognitive, questions*

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INTRODUCTION

In Indonesia, English is considered a foreign language and is not easily mastered by students. According to this issue, the materials that suit their needs must be provided. One of them is the English textbook as the teaching material in the teaching-learning process (Richards, 2014). It plays a major role because of its presence at any level of education (Margana & Widyantoro, 2017) and serves grammar, vocabulary, and pronunciation (Cunningsworth, 1995).

Mostly, the textbook depicts reading texts and follows related questions. It leads to the development of various skills and becomes the source of academic assessment (Freaht & Smadi, 2014) either oral or written questions (Blosser, 1975). In fact, the questions asked by teachers orally had been influenced by textbook questions (Sunggingwati & Nguyen, 2013, and Tyas, Nurkamto, & Marmanto, 2020). Therefore, the quality of textbook questions should be considered more and able to accommodate the high level of thinking ability.

There are some 21st century skills to be mastered by the young generation and portrayed in textbooks such as *critical thinking*, *creative thinking*, *problem-solving*, and *decision-making* (Wagner, 2008 and Binkley, et. al., 2015). Those are in line with the *Kurikulum Merdeka* needs to achieve. The expectation of higher-order thinking skills is able to elevate the students' value and compete with other young generations over the world. Therefore, it can stimulate broader levels of learning (Sunggingwati & Nguyen, 2013).

According to OECD 2018, Indonesian learners' reading comprehension ability is below average and mostly comprises lower-order thinking skills. This issue is related to teachers' proficiency in delivering higher-order questions and has an impact on students. As teachers' questions are influenced by textbook questions, previous studies by Sunggingwati & Nguyen (2013) and Tyas, Nurkamto, & Marmanto (2020) found that the oral questions posed by teachers were mostly lower-order questions. Teachers were unsure whether their self-made questions were adequate to be asked to students.

Anderson, et. al. (2001) considered that the cognitive domain is the field of curriculum development and learners' behavior. Then, it is being the basis of the Indonesian curriculum. Since the questions are a truism as one of the numerous important things during the learning process (Gall, 1970), the variation of questions is needed to sharpen learners' thinking skills. There are plentiful English textbooks for senior high school learners made by publishers. According to the non-formal preliminary study of several schools around Indonesia, most of the Senior High Schools are not using government textbooks. They choose to use *Pathway to English Kelompok Peminatan* from the Erlangga publisher as their textbooks. Some commercial textbooks are believed that has good work in maintaining their quality (Richards, 2001).

Regarding to the findings, the *Pathway to English kelompok Peminatan* textbook for the second grade is chosen because the number of questions in the three grades of textbooks shows that the second grade is the highest (229 questions). Another English textbook which is also used by most of the schools and determined as the national textbook is *Bahasa Inggris*

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published by the government. However, it has been studied by numerous researchers (Arvianto & Faridi, 2016; Zaiturrahmi, Kasim & Zulfikar, 2017; Atiullah, Fitriani, & Rukmini, 2019; Surtantini, 2019; Febriyani, Yunita & Damayanti, 2020) that lower-order questions are dominant.

The study about the same topic and the same textbook had been done by a small number of researchers, one of them is by Yuliana & Tungka (2018). They showed that the lower order questions were dominating the *Pathway to English* textbook published in 2014. The analysis was focused only on *wh-questions*. Meanwhile, the questions could be formulated in various forms. For instance, in the *Pathway to English Kelompok Peminatan* for the second grade published in 2017, there is a reading in the first chapter about a recommendation letter. There are numerous questions in very different forms from the usual question style such as *matching* and *gapped text*. Therefore, the types of questions, *convergent* and *divergent* (Smith, 1969, & Wilen, 1991), are the right tool to analyze because they could be implemented in the various forms of the questions.

Despite the various forms of questions, the textbook still depicts some reading passages followed by questions in which the answers are explicit. The readings are in chapter 5 page 90 and chapter 7 page 132. The reading in chapter 5 page 90 only has two questions which are “Who is the main character in the story?” and “What was Bonifacio?”. They only required the basic ability to identify the text and the answers can be found easily. Then, the reading in chapter 7 page 132 has the same pattern of questions. There is a brochure and followed by six questions, they are “What is the flyer about?”, “What is the purpose of the brochure?”, “Who are the targeted readers?”, “When will the show be held?”, “What should people do if they want to participate in the show?”, and “What is the requirement to participate in the show?”. The learners only need to recognize and understand the information given by the text. They are not encouraged to think beyond the text and combine it with their previous knowledge.

Thus, the researcher becomes curious about how these forms meet the demand for different types of questions. To distinguish the various forms of the questions, Burgess & Head (2005) and Day & Park (2005) have several categories, such as *multiple-choice questions*, *true/false questions*, *matching*, *gapped texts*, *proofreading*, *yes/no questions*, *alternative questions*, and *wh-questions*. Every form can signify both the cognitive and divergent processes in the questions.

The questions in textbooks are associated with learners' cognitive abilities, which must be developed and attained. Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Rath & Wittrock (2001) discuss cognitive abilities and introduce a revised version of Bloom's taxonomy, which comprises *remembering*, *understanding*, *applying*, *analyzing*, *evaluating*, and *creating*. These cognitive dimensions are widely recognized by educators and researchers worldwide and remain relevant to this day. Textbooks are still the primary source of oral questions for teachers, and thus, the study aims to explore the relationship between the types of questions and cognitive levels in reading comprehension questions in textbooks.

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Accordingly, the finding of this study has a significant role to enhance the quality of reading questions of the English textbook. In order to achieve the goal, each element must be able to get learners to move on from what they already remember and cultivate it to analyze, evaluate, and create as part of higher-order thinking skills. The government and the authors play a vital role to be more attentive about the needs of the global and learners' level. The good coordination from both will produce a high quality of textbooks, especially in the reading questions. As Freahat & Smadi (2014) believe that the presence of good questions will lead the learners into good understanding.

METHOD

The study used qualitative with document analysis method. The study aimed to reveal the presence and relationship of types and cognitive questions in the *Pathway to English Kelompok Peminatan* 2017 textbook for grade XI of senior high school. The unit analysis of the study was all the questions following the reading passages in order to find the cognitive levels and how they integrated with the types of questions. The researcher used the observation method and note-taking technique to collect the data (Sudaryanto, 2015).

FINDING AND DISCUSSION

Question Types and Cognitive Levels

The relationship between the question types and cognitive levels in the thinking process can be seen in the following diagram.

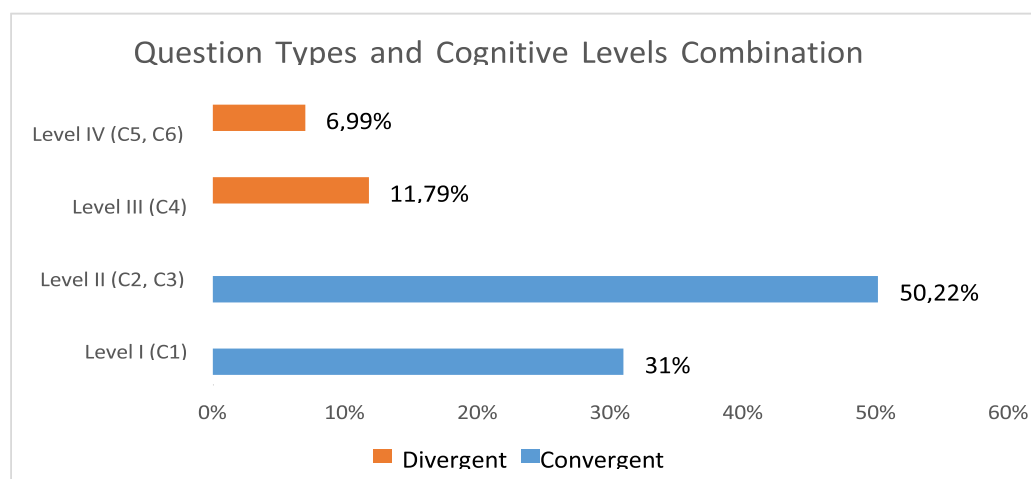


Figure 4. Percentage of Question Types and Cognitive Levels Combination

As depicted by the diagram there were 115 (50,22%) questions following the reading texts belonging to Level II. Those questions were identified as the most frequent questions among the reading questions. Level II had associated with C2 and C3 (*understand* and *apply*) as well as the high-order convergent. Concurrently, the least percentage as many as 16 (6,99%) questions were in Level IV. It was associated with C5 and C6 (*evaluate* and *create*) as well as high-order divergent.

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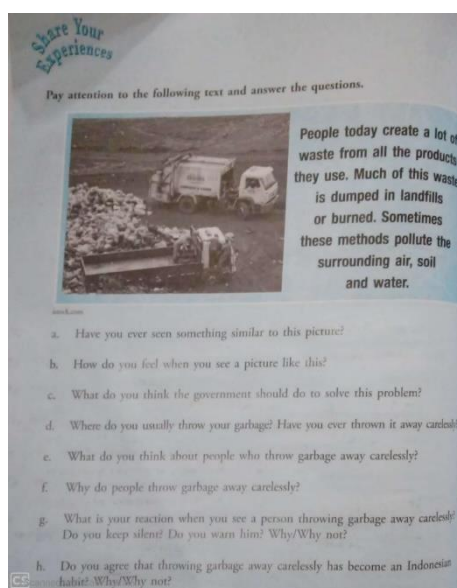
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Then, the rests were Level I and Level III. They were categorized as low-order convergent and low-order divergent. The total percentage of questions was 31% in Level I and 11,79% in Level III. Level I had the same spirit as C1 (*remember*) and Level III with C4 (*analyze*).

Question Types and Cognitive Levels Relationship

The function of different question types based on their forms is linked to how they encourage learners' thought processes. *Wh-questions*, *multiple-choice*, *yes/no*, and *gapped text* questions serve two distinct purposes depending on whether the answer is grounded in the text or requires the learners to think beyond what is explicitly stated. Hence, in conclusion of convergent and divergent question types enabled the identification of the anticipated answer approach. Furthermore, these question types differentiated the levels of cognition by associating convergent questions with lower-order thinking skills and divergent questions with higher-order thinking skills. This was achieved by analyzing the cognitive demands of each type of question, which allowed teachers to adapt to various potential answers. In practice, this flexibility proved beneficial to educators.

Wilen's (1991) proposal regarding the concept holds the same value as Anderson et al.'s (2001) proposal. Although the original source of elaborating cognitive levels was Bloom (1956), it has been demonstrated that there is no difference in the interpretation of questions when viewed from either Wilen's or Anderson's perspective. The study revealed a strong correlation between question types and cognitive levels, as all four levels (Level I, II, III, IV) were represented. Level II, which encompasses understanding and high-order convergent questions, had the highest number of questions with 115, indicating its prevalence among the other levels. Conversely, Level IV, which involves evaluating and creating as well as high-



level divergent questions, had the lowest number of applied questions.

Figure 10. Example of Question Types and Cognitive Levels Relationship

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As an example, the question on page 154 of Chapter 5 exemplifies critical thinking and corresponds to the third level of question types: "What is your reaction when you see a person throwing garbage away carelessly? Do you keep silent? Do you warn him?" The analysis of the question started with its semantic meaning to obtain a clear purpose. The question begins with the word "what" but is followed by options, making it a multiple-choice question. It inquires about the learners' response or attitude when they witness someone carelessly discarding garbage. While the response could vary, the question restricts their answer to either keeping silent or warning the person. However, they have to select the attitude they deem most appropriate, requiring higher-level thinking by combining their answer with their knowledge and not solely relying on the reading. This falls under critical thinking and embodies the essence of C4 of cognitive levels, categorizing it as low-order divergent. The same objective is demonstrated by the question, reinforcing the relationship between the level of question types and cognitive levels. Moreover, it differentiates divergent questions into low and high-order divergent, depending on the depth of thinking required for a particular question.

The findings of the study raise concerns about the alignment of the current education system with the 21st-century learning goals, which emphasize critical thinking and problem-solving skills. The learners' experience in solving and critiquing problems was found to be insufficient compared to their proficiency in answering basic reading questions. Although the total number of lower-order and higher-order questions differed significantly, it was evident that lower-order questions dominated the assessments. Despite this, the authors of the textbook should be commended for their efforts to provide a range of cognitive-level questions. Shuyi and Renandya (2019) recommend that teachers optimize the notion of "learners as active thinkers and learners" through the use of high-quality textbooks that offer opportunities for all levels of thinking to be presented. This approach could enable learners to develop critical thinking and problem-solving skills and align with 21st-century learning goals.

The *Pathway to English Kelompok Peminatan* is widely used by teachers and learners in Indonesia to support their learning journey, and it is considered a high-quality commercial textbook (Richards, 2001). However, it is essential to note that the distribution of convergent and divergent questions in the reading passages may impact the expected thinking process of the learners. If the majority of questions only focus on testing their factual knowledge, understanding, and application of the given materials, particularly the reading passages, it may result in the learners being trapped in their comfort zone. This situation happens because the answers to these questions do not require discussion or higher-level analysis. On the contrary, questions that encourage critical thinking, problem-solving, and creativity are the ones that learners need to experience.

The disparity between higher and lower-level questions poses a challenge for learners, as higher-level questions require more effort and critical thinking. In particular, questions that

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demand discussion require learners to express their own ideas and consider others' perspectives, ultimately leading to better decision-making. By providing learners with training in higher-level questioning, they will be better prepared to compete on a global level, especially as Indonesia ranks low in terms of reading literacy according to PISA. Therefore, it is crucial to choose textbooks that meet both national and global standards to improve the quality of education in Indonesia.

Incorporating critical thinking into the textbook would not only improve the quality of learners but also affect their thinking habits and mindset toward thinking at a higher level. It is crucial to prepare learners for the challenges of the future, which will require them to think divergently, reevaluate decisions, and increase self-analysis. This notion is emphasized by Paul and Elder (2014) as they suggest that everyone should be prepared for the global change that lies ahead.

CONCLUSION

It is important to note that the presence of higher-order thinking skills questions in the textbook is a positive step towards developing learners' critical thinking abilities. However, the disproportionate number of lower-order questions compared to higher-order questions may hinder learners' development in this area. Therefore, it is crucial for teachers to supplement the textbook with additional materials and activities that focus on developing higher-order thinking skills. Additionally, textbook publishers should consider revising their materials to ensure a balanced mixture of lower-order and higher-order questions that align with the cognitive levels and promote critical thinking skills.

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