

UNLOCKING HIGHER-ORDER THINKING: BLOOM'S TAXONOMY AND TEACHER QUESTIONS IN INDONESIAN LANGUAGE INSTRUCTION

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Received May 17, 2024; Revised June 23, 2024; Accepted June 24, 2024

Abstract:

Teacher questioning plays a crucial role in fostering cognitive development among students. This study investigated the cognitive level of teacher questions in Indonesian language learning interactions, specifically examining the prevalence of higher-order and lower-order questions based on Anderson and Krathwohl's Revised Bloom's Taxonomy. Classroom observations and recordings were conducted with two Indonesian language teachers at SMK Nasional Malang. Findings revealed that teacher questions spanned both higher-order and lower-order cognitive processes. Higher-order questions effectively stimulated critical and creative thinking, while lower-order questions facilitated initial understanding and served as a foundation for more complex reasoning. However, lower-order cognitive questions were predominantly used compared to higher-order questions. These results underscore the need for teachers to strategically employ a hierarchical approach to questioning, emphasizing higher-order cognitive questions to cultivate students' critical and analytical thinking skills in the Indonesian language classroom.

Abstrak:

Pertanyaan yang diajukan guru dalam interaksi pembelajaran dapat mempengaruhi kemampuan berpikir siswa. Penelitian ini bertujuan mendeskripsikan tingkat kognitif pertanyaan guru dalam pembelajaran Bahasa Indonesia, khususnya pertanyaan tingkat tinggi (HOTS) dan pertanyaan tingkat rendah (LOTS) berdasarkan Taksonomi Bloom Revisi Anderson dan Krathwohl. Penelitian ini melibatkan dua guru Bahasa Indonesia di SMK Nasional Malang dengan menggunakan metode observasi dan perekaman. Hasil penelitian menunjukkan bahwa pertanyaan guru dalam pembelajaran Bahasa Indonesia terbagi menjadi dua kategori: pertanyaan yang merangsang proses berpikir tingkat tinggi dan pertanyaan yang merangsang proses berpikir tingkat rendah. Pertanyaan tingkat tinggi efektif dalam mendorong pemikiran kritis dan kreatif siswa, sedangkan pertanyaan tingkat rendah berfungsi sebagai landasan awal untuk membangun penalaran siswa menuju pemahaman yang lebih kompleks. Namun, temuan penelitian menunjukkan bahwa sebagian besar pertanyaan yang diajukan guru termasuk dalam kategori LOTS. Oleh karena itu, guru perlu memperhatikan hierarki pertanyaan kognitif dan meningkatkan penggunaan pertanyaan HOTS untuk mengembangkan kemampuan berpikir kritis dan analitis siswa secara lebih optimal.

Keywords:

Teacher's Questions, HOTS, LOTS, Bloom's Taxonomy

How to Cite: Sabir, A., Suyitno, I., Susanto, G., & Inthase, W. (2024). Unlocking Higher-Order Thinking: Bloom's Taxonomy and Teacher Questions in Indonesian Language Instruction. *Lentera Pendidikan : Jurnal Ilmu Tarbiyah dan Keguruan*, 27(1), 78-100. <https://doi.org/10.24252/lp.2024v27n1i6>.

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INTRODUCTION

Questions play a crucial role in social interaction, facilitating effective communication between individuals or groups. By posing questions to interlocutors, individuals can express curiosity, seek clarification on the intent or purpose of a conversation, and elicit feedback and responses from others (Saka & Inaltekin, 2023). Questioning enables individuals to gain a deeper understanding of the desires, needs, and opinions of others, thereby strengthening social bonds. This phenomenon is also evident in teacher-student interactions. Teachers play a crucial role in actively reconstructing students' knowledge and fostering their participation in the learning process (Doiz & Lasagabaster, 2023; Saka & Inaltekin, 2023). One factor that encourages active student participation is the strategic use of appropriate questions to create an open and inviting classroom environment (Boyd, 2015). Well-crafted questions can effectively stimulate students' thinking skills, enabling them to better address learning-related challenges. Ilham, Masdin, & Hardiyanti (2022) further emphasize this point, demonstrating how teacher questioning can gauge student understanding while simultaneously promoting active classroom participation. By incorporating questions that challenge students to achieve deeper comprehension and enhance their skills, teachers can facilitate a more engaging and effective learning experience. Teacher questions are a crucial element in fostering effective learning. However, crafting questions that positively impact student learning is not an automatic or effortless process. Indriyani, Djahir, & Barlian (2015) highlight that students may remain silent or hesitant to participate in answering questions due to teachers' habits of providing immediate answers without allowing time for student processing and response formulation. Additionally, insufficient preparation by teachers in designing high-quality questions can hinder student engagement. In light of this, teachers, as facilitators of communication, must enhance their questioning skills through meticulous planning and structured practice (Juliangkary & Pujilestari, 2022; Supriyadi, Yuliawan, & Mulyati, 2017). Well-designed questions serve as a powerful tool for fostering students' thinking processes. Ritan & Tube (2021) further support this notion, demonstrating how the quality of teacher questions can effectively aid students in expanding their vocabulary and articulating their ideas with clarity.

The questions teachers pose in classroom interactions can significantly influence students' thinking processes, particularly their higher-order thinking skills (Ermasari, Subagia, & Sudria, 2014). One effective approach for teachers to cultivate these skills is

through the use of thought-provoking questions that spark curiosity (Soysal & Soysal, 2023). Such questions can stimulate students to delve deeper into subject matter, reconstruct knowledge to solve problems, and establish logical connections between ideas, thereby enhancing their interest and enthusiasm for learning. Moreover, questions designed to hone thinking skills can empower students to formulate solutions to the problems presented. To effectively craft such questions, teachers require not only broad knowledge but also a nuanced understanding of their subject matter, ensuring that the questions posed can guide the learning process toward its intended objectives. The questions teachers utilize in the learning process can be tailored to align with the cognitive levels outlined in Bloom's Taxonomy. Cognitive levels are a crucial concept in education, designed to identify and differentiate students' thinking abilities. Bloom's Taxonomy provides a valuable framework for understanding and classifying these levels, ranging from basic to more complex. Anderson and Krathwohl's Revised Bloom's Taxonomy categorizes the dimensions of cognitive processes into six distinct levels: remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creating (C6).

Bloom's Taxonomy for Thinking



Figure 1. Revised Bloom's Taxonomy

Five relevant studies provide context for this research. First, Saka & Inaltekin (2023) found that science teachers predominantly used lower-quality, closed-ended questions in their instruction. Second, Soysal & Soysal (2022) explored the impact of question types on student talk productivity. Third, Pandu, Purnamasari, & Nuvitalia (2023) demonstrated the positive effect of provocative questions on student learning outcomes. Fourth, Zamahsari, Putikadyanto, & Ansori (2021) investigated the diverse questions and questioning techniques employed by BIPA (Indonesian Language for Foreign Speakers) teachers in classroom interactions. Finally, Al-Zahrani & Al-Bargi (2017) identified question types that either successfully fostered or failed to stimulate classroom interaction. Then, these studies collectively highlight the importance of question quality and its impact on student engagement, learning outcomes, and classroom interaction. They also underscore the need for further research to examine the specific types of questions used in different instructional contexts and their varying effects on student learning. A review of relevant literature revealed both similarities and differences with the present study. While previous research, like the current study, examined teacher questioning in

the learning process, this study distinguishes itself by focusing specifically on the cognitive level of questions used in learning interactions. Previous research primarily explored the types, varieties, techniques, effects, and quantity of questions arising in the learning process. In contrast, this research delves into the forms of high-level cognitive questions (HOTS) and low-level cognitive questions (LOTS) employed by teachers in Indonesian language learning interactions. This focus on the cognitive level of questions fills a gap in the existing literature and provides valuable insights into how teachers can effectively promote higher-order thinking skills through their questioning strategies. This research aims to describe the cognitive level of questions posed by teachers in learning interactions, with a specific focus on Indonesian language learning. Language acquisition is recognized as a complex cognitive process, requiring students to grasp meaning, context, and practical usage in daily communication (Marni, Aliman, Suyono, Roekhan, & Harsiati, 2020). Thus, this study examines the relationship between teacher questions and students' cognitive levels within the Indonesian language learning environment. The findings of this research are expected to shed light on how teacher questions can effectively foster the development of students' critical and analytical thinking skills during the learning process.

RESEARCH METHOD

This research adopts a qualitative case study approach to describe the cognitive level of teacher questions in Indonesian language learning interactions. This methodology allows for an in-depth analysis of teacher-student conversations within a specific social context, in this case, the classroom. The research data consists of teacher questions categorized as either low-level or high-level, as defined by the Revised Bloom's Taxonomy. Then, the utilization of the Revised Bloom's Taxonomy is pivotal in this study, serving as a structured framework for analyzing the cognitive level of teacher questions. This taxonomy facilitates a comprehensive examination of the questions asked, aiding in the identification of the balance between low-level and high-level questions. The data source for this research is classroom interaction discourse. In addition, the research subjects comprise two Indonesian language teachers at SMK Nasional Malang who voluntarily participated in the study. The research setting encompassed Class X, with 24 students, and Class XI, with 29 students. The research spanned seven meetings to gather comprehensive data on the cognitive level of questions posed by teachers during classroom interactions.

Data collection in this research involved observation and recording. Both teachers and students were informed of the researcher's presence in the classroom and their awareness of the ongoing observation of learning activities. The teachers granted permission for the recording of the learning process to capture data on the questions they posed to students. During data collection, the researcher, as the primary instrument, utilized tools such as observation guides, smartphone recording devices, and field notes. Data analysis comprised three stages: data reduction, data display, and conclusion drawing. The recorded data were transcribed and subsequently analyzed using Anderson and Krathwohl's Revised Bloom's Taxonomy. The analyzed and presented data were then interpreted to form the research findings and conclusions.

RESULTS AND DISCUSSION

Interaction within the learning process is inherently linked to teacher questions that engage students' cognitive levels. Teachers are expected to pose questions that stimulate critical thinking processes. Anderson & Krathwohl's Revised Bloom's Taxonomy categorizes these cognitive levels into six distinct levels: remembering, understanding, applying, analyzing, evaluating, and creating. The findings of this study, based on seven classroom observations, yielded 273 instances of teacher questions with identifiable cognitive levels. The distribution of these questions across the six cognitive levels will be described in detail below.

Cognitive Level of Remembering

Teacher questions at the remembering level represent the foundational stage of cognitive processing within Bloom's Taxonomy. This level involves the retrieval and reproduction of factual information during the learning process. These questions serve to assess students' ability to recall important details, facts, or relevant information presented in the lesson (Tayyeh, Dehham, & Muhammed, 2021). Virranmäki, Valta-Hulkkonen, & Pellikka (2020) further emphasize that remembering questions are fundamental and act as prerequisites for subsequent cognitive processes. Analysis of the data reveals two distinct patterns within the remembering cognitive level: stating information and recognizing. Questions that follow the pattern of stating information prompt students to retrieve knowledge from their long-term memory and compare it with new information. Conversely, questions with the pattern of recognizing assist students in recalling relevant knowledge from their long-term memory. The following section will provide a detailed description of these two patterns, along with illustrative examples from the collected data.

Firstly, teacher questions exhibiting the remembering cognitive level with the stating information pattern were identified in classroom interactions between the teacher and Class XI DPIB students at Malang National Vocational School. An illustrative example of such a question can be seen in the following data excerpt:

Data (1)

Context : The setting of this conversation was in the classroom.

Participants in this conversation were the teacher and all students. The topic of discussion was learning material.

Teacher : Did anyone still remember what our last lesson was about? (1)

Students : Lecture (2)

The conversation between the teacher and students took place during the initial phase of the learning process, with the topic of conversation centering on the learning material. In Utterance (1), the teacher inquired about the material covered in the previous session. In Utterance (2), students responded by stating that the previous material was a lecture. This question exemplifies the remembering cognitive level with the pattern of stating information. By posing this question, the teacher prompts students to utilize their cognitive memory to recall and express information related to the previously covered learning material. Secondly, teacher questions exhibiting the remembering cognitive level

with the recognizing pattern were observed in classroom interactions between the teacher and Class X MP students at Malang National Vocational School. An illustrative example of such a question can be seen in the following data excerpt:

Data (2)

- Context** : The setting of this conversation was in the classroom.
Participants in this conversation were the teacher and all students. The topic of discussion was word equivalents
- Teacher** : For example 'titah', had you ever heard the word 'titah'? (1)
- Students** : No (answered simultaneously) (2)

The conversation between the teacher and students took place during the core phase of the learning process, focusing on the word equivalent "titah." In Utterance (1), the teacher inquired about the students' familiarity with the word "titah." In Utterance (2), the students responded based on their prior knowledge. This question exemplifies the remembering cognitive level with the recognizing pattern. By asking this question, the teacher prompts students to activate their cognitive memory to recognize and potentially recall the meaning or context associated with the word "titah," provided by the teacher. This type of question encourages students to connect new information with their existing knowledge base.

Cognitive Level of Understanding

Teacher questions at the understanding cognitive level aim to facilitate a deeper comprehension of information or material presented in the learning process. These questions assess students' cognitive abilities in grasping the underlying concepts taught, whether conveyed verbally or in written form (Pugh & Gates, 2021). As Zulkifli & Abidin (2022) point out, comprehension questions require students to interpret, translate, and articulate their understanding of a given concept. Notably, understanding questions represent a higher cognitive level than remembering questions. Tayyeh, Dehham, & Muhammed (2021) highlight the distinction between the two, emphasizing that remembering primarily involves recognizing information, whereas understanding entails the ability to establish connections between prior knowledge and new information. This distinction underscores the importance of understanding questions in promoting deeper learning and critical thinking.

Teacher questions at the understanding cognitive level in this study exhibited seven distinct patterns: interpreting, exemplifying, classifying, summarizing, concluding, comparing, and explaining. Interpreting questions prompt students to transform information from one form to another, such as translating or converting verbal explanations into visuals. Exemplifying questions encourage students to provide concrete examples or illustrations of concepts, applying abstract knowledge to real-world scenarios. Classifying questions challenge students to categorize items based on defining characteristics and criteria. Summarizing questions guide students to extract main points and condense information, showcasing their ability to represent information concisely. Concluding questions require students to draw logical conclusions from presented

information, demonstrating analytical and inferential skills. Comparing questions prompt students to identify similarities and differences, fostering critical analysis and evaluation. Finally, explaining questions encourage students to articulate their understanding, showcasing their ability to communicate complex ideas effectively. Detailed descriptions and illustrative examples from the collected data for each pattern will be provided in subsequent sections.

First, teacher questions exhibiting the understanding cognitive level with the interpreting pattern were identified in classroom interactions between the teacher and Class X MP students at Malang National Vocational School. An illustrative example of such a question can be seen in the following data excerpt:

Data (3)

- Context** : The setting of this conversation was in the classroom.
Participants in this conversation were the teacher and all students. The topic of discussion was rhetorical sentences.
- Teacher** : What was a rhetorical? (1)
- Student** : A question that didn't require an answer (2)

The conversation between the teacher and students took place during the core phase of the learning process, focusing on the topic of rhetorical sentences. In Utterance (1), the teacher inquired about the definition of a rhetorical sentence. In Utterance (2), a student responded by providing the definition of a rhetorical sentence. This question exemplifies the understanding cognitive level with the interpreting pattern. By asking this question, the teacher prompts students to utilize their cognitive understanding to interpret and articulate the essential meaning of rhetorical sentences.

Second, teacher questions demonstrating the understanding cognitive level with the exemplifying pattern were identified in classroom interactions between the teacher and Class X MP students at Malang National Vocational School. An illustrative example of such a question can be seen in the following data excerpt:

Data (4)

- Context** : The setting of this conversation was in the classroom.
Participants in this conversation were the teacher and all students. The topic of discussion was intransitive verb sentences.
- Teacher** : Remember, transitive meant requiring an object, while the opposite was intransitive, which did not require an object.
What were some an example? (1)
- Student** : Sleeping (2)

The conversation between the teacher and students took place during the core phase of the learning process, focusing on the topic of intransitive verbs. In Utterance (1), the teacher explained the distinction between transitive and intransitive sentences and then asked for examples of verbs used in intransitive sentences. In Utterance (2), a student responded by providing examples of intransitive verbs. This question exemplifies the understanding cognitive level with the exemplifying pattern. By posing this question, the

teacher prompts students to utilize their cognitive understanding to provide concrete examples of verbs used in intransitive sentences.

Third, teacher questions demonstrating the understanding cognitive level with the classifying pattern were identified in classroom interactions between the teacher and Class X MP students at Malang National Vocational School. An illustrative example of such a question can be seen in the following data excerpt:

Data (5)

Context : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was the structure of anecdotal texts.

Teacher : The second text we learned was an anecdotal text. How many structures were there? (1)

Students : Five (2)

Teacher : What were they? (3)

Students : Abstract, orientation, crisis, reaction, and coda (4)

The conversation between the teacher and students occurred in the core phase of the learning process with the topic of conversation being the structure of anecdotal texts. Speech (1) the teacher asked the students about the number of structures in anecdotal texts. Speech (2) the students responded to the teacher's question by stating the number of structures in anecdotal texts. In Speech (3) the teacher asked again about the structure of anecdotal texts in detail. Speech (4) the students respond to the teacher's question by mentioning the structure of anecdotal texts in detail. The questions that arise in the discourse are questions that have a cognitive level of understanding with classifying patterns. Giving these questions helps students use their cognitive understanding in classifying the structure in anecdotal texts.

Fourth, the teacher's question that has a cognitive level of understanding with summarizing pattern is found in the classroom interactions between teacher and student of class X MP at Malang National Vocational School. The question can be seen from the following data.

Data (6)

Context : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was the content of anecdotal texts.

Teacher : What was this story about, dear? (1)

Student : Corruptor (2)

Teacher : Corruptor. So, in the story, among all the mice in the world, who wins? (3)

Student : Indonesia (4)

The dialogue between teacher and student transpired during the core phase of the learning process, centering on the content of anecdotal texts. In Utterance (1), the teacher

inquired about the content of the presented anecdotal text. Utterance (2) captured the student's response, which focused on the theme of corruption. Utterance (3) saw the teacher probing further, asking about the conclusion of the text. The student, in Utterance (4), responded by stating that the narrative ended with the Indonesian mouse ascending to the position of global leader of mice. The questions posed within this discourse were characterized by a cognitive level of understanding, employing a summarizing pattern. By asking these questions, the teacher facilitated the student's use of cognitive understanding to summarize the narrative presented in the anecdotal text.

Furthermore, within the classroom interactions between teacher and students of class XI DPIB at Malang National Vocational School, a teacher's question exhibiting a cognitive level of understanding with a concluding pattern was identified. This can be observed in the following data.

Data (7)

- Context** : The setting of this conversation was in the classroom.
Participants in this conversation were the teacher and all students. The topic of discussion was the figure of speech irony.
- Teacher** : Did you feel hurt when I said good evening? (1)
- Students** : No, ma'am (2)
- Teacher** : Did you feel offended? (3)
- Students** : No, ma'am (4)
- Teacher** : Was there a sense of shame? (5)
- Students** : Yes (6)
- Teacher** : Making someone feel ashamed, not being offended, not hurt, what figure of speech is that? (7)
- Students** : Irony (8)

The dialogue between teacher and students unfolded during the core phase of the learning process, focusing on the figure of speech irony. In Utterance (1), the teacher prompted students to analyze an example of a figure of speech. Utterance (2) captured the student's response to the teacher's inquiry. In Utterance (3), the teacher probed further, inquiring about the feelings evoked by the figure of speech. Utterance (4) documented the student's response regarding their emotional reaction. Utterance (5) saw the teacher reiterating the question about the feelings elicited by the figure of speech, with Utterance (6) recording the student's subsequent response. In Utterance (7), the teacher synthesized the student's answer, offering a detailed analysis of the figure of speech and then posing the question of its classification. Utterance (8) marked the student's response, identifying the figure of speech as irony. The questions arising within this discourse were characterized by a cognitive level of understanding, employing concluding patterns. By asking these questions, the teacher facilitated the students' use of cognitive understanding to deduce the characteristics of the ironic figure of speech presented.

Furthermore, within the classroom interactions between teacher and students of class X MP at Malang National Vocational School, a teacher's question exhibiting a cognitive level of understanding with a comparing pattern was observed. This can be seen in the

following data.

Data (8)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was the difference between explicit and implicit messages in narrative texts.
- Teacher** : The message in the narrative text is usually conveyed in two ways, namely explicitly and implicitly. What was the difference between explicit and implicit? (1)
- Students** : Explicit meant it was written (2)
- Teacher** : Explicit meant it was written in the text, what about implicit?(3)
- Students** : (Silence) (4)
- Teacher** : If explicit meant it was written in the text, implicit meant was not? (5)
- Students** : Not written in the text (6)
- Teacher** : Not clearly written in the text or you may also have to infer it yourself (7)

The dialogue between teacher and students unfolded during the core phase of the learning process, centering on the distinction between explicit and implicit messages in narrative texts. In Utterance (1), the teacher inquired about the difference between the two message types. Utterance (2) captured the students' response, focusing on the form of explicit messages. Utterance (3) saw the teacher probing further, asking about the characteristics of implicit messages. In Utterance (4), the students did not provide a response to the teacher's question. Utterance (5) marked the teacher's explanation of explicit messages, offering hints to the students regarding the form of implicit messages. Utterance (6) recorded the students' response, articulating the form of implicit messages. In Utterance (7), the teacher elaborated on the characteristics of implicit messages for the students. The questions arising within this discourse were characterized by a cognitive level of understanding, employing comparing patterns. By asking these questions, the teacher facilitated the students' use of cognitive understanding to compare messages conveyed in explicit and implicit forms.

Furthermore, within the classroom interactions between teacher and students of class XI DPIB at Malang National Vocational School, a teacher's question exhibiting a cognitive level of understanding with an explaining pattern was observed. This can be seen in the following data.

Data (9)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was the figure of speech personification.

Teacher : Examples of personification were a pen dancing on the paper and the wind whispering in my ear. What did that figure of speech mean, children? (1)

Students : A figure of speech that depicted inanimate objects as living like human nature. (2)

The dialogue between teacher and students unfolded during the core phase of the learning process, centering on the figure of speech, personification. In Utterance (1), the teacher presented examples of personification to the students and subsequently prompted them to explain the meaning of this figure of speech. Utterance (2) captured the students' response, in which they articulated their understanding of the concept of personification. The question posed in this discourse demonstrated a cognitive level of understanding, employing an explaining pattern. By asking this question, the teacher facilitated the students' use of cognitive understanding to elucidate the meaning of the personification examples provided.

Cognitive Level of Applying

Teacher questions classified as having a cognitive level of applying challenge students to utilize their knowledge in practical scenarios, aiming to solve problems. As described by Zulkifli & Abidin (2022), application questions prompt students to resolve issues using the necessary knowledge, procedures, or rules. The patterns found within the cognitive level of applying comprise two categories: executing and implementing. Questions with an executing pattern aid students in applying procedures to complete tasks, while questions with an implementing pattern assist students in performing implementation or application based on the subject matter. Below is a detailed description of these two patterns.

Primarily, the teacher's question exhibiting a cognitive level of applying with an executing pattern was observed within the classroom interactions between the teacher and students of class X MP at Malang National Vocational School. This question can be seen in the following data.

Data (10)

Context : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was action verbs.

Teacher : That was an example of a verb, how about you develop it into a sentence? (1)

Student : I was sweeping the Indonesian language classroom (2)

The dialogue between teacher and students unfolded during the core phase of the learning process, focusing on examples of sentences using action verbs. In Utterance (1), the teacher prompted the students to provide examples of such sentences. Utterance (2) captured the students' response, as they presented their examples of sentences incorporating action verbs. The question posed within this discourse demonstrated a cognitive level of applying, utilizing an executing pattern. By asking this question, the

teacher facilitated the students' use of cognitive application to execute action verbs within sentence structures.

Furthermore, within the classroom interactions between teacher and students of class XI DPIB at Malang National Vocational School, a teacher's question exhibiting a cognitive level of applying with an implementing pattern was observed. This question can be seen in the following data.

Data (11)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was opening greetings of a lecture.
- Teacher** : You should also greet in a general way because not all audience members may be Muslims. What should you say? (1)
- Student** : Peace be upon you all (2)

The dialogue between teacher and students unfolded during the core phase of the learning process, focusing on opening greetings for lectures. In Utterance (1), the teacher inquired about the common form of opening greetings used in speeches. Utterance (2) captured the student's response, indicating "peace be upon you all" as a suitable and common opening greeting for speeches. The question posed within this discourse demonstrated a cognitive level of applying, utilizing an implementing pattern. By asking this question, the teacher facilitated the students' use of cognitive application to implement opening greetings for speeches in a general manner.

Cognitive Level of Analyzing

Teacher questions classified as analyzing are those that prompt students to recognize information based on their existing knowledge and then integrate it with other knowledge to achieve a broader understanding. According to Zulkifli & Abidin (2022), analysis questions encourage students to gather information, investigate, and support their hypotheses. This aligns with the perspective of (Rofi'uddin, Susanto, Widyartono, Sultan, & Muzakki, 2022), who state that analysis involves recognizing inferential and actual connections between a concept, statement, description, or other forms of representation. The cognitive analysis process utilizes existing knowledge to identify elements such as information, assumptions, and causal relationships (Ramadhana, Rozimela, & Fitrawati, 2018).

In this research, teacher questions with a cognitive level of analyzing were found to have three distinct patterns: distinguishing, organizing, and attributing. (1) Analysis questions with distinguishing patterns assist students in differentiating relevant parts of lesson material from irrelevant ones or distinguishing important aspects from less important ones. (2) Analysis questions with organizing patterns help students identify elements within a structure. (3) Analysis questions with attributing patterns guide students in determining value or perspective based on the lesson material.

Primarily, a teacher's question exhibiting a cognitive level of analyzing with a

distinguishing pattern was observed within the classroom interactions between the teacher and students of class XI DPIB at Malang National Vocational School. This question can be seen in the following data.

Data (12)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was figures of speech.
- Teacher** : Where did the stars come from, from the mountain they descended to the river. Where did love come from, from the eyes it descended to the heart. Was this an example of anaphora or epiphora? (1)
- Students** : Anaphora (2)

The dialogue between teacher and students unfolded during the core phase of the learning process, focusing on the distinction between the figures of speech anaphora and epiphora. In Utterance (1), the teacher presented examples of rhetorical figures and then prompted the students to determine whether the examples belonged to the form of anaphora or epiphora. Utterance (2) captured the student's response, identifying the rhetorical figure as anaphora. The question posed within this discourse demonstrated a cognitive level of analyzing, utilizing a distinguishing pattern. The analytical process undertaken by the student involved identifying the repetitive elements in the teacher's example, namely the phrase "from...to...". The student then compared this pattern with the previously learned characteristics of anaphora and epiphora. By analyzing the pattern of word usage, the student was able to determine that the example aligned more closely with the definition of anaphora than epiphora. Posing this question facilitated the students' use of cognitive analysis to distinguish between these two rhetorical figures.

Furthermore, within the classroom interactions between teacher and students of class X MP at Malang National Vocational School, a teacher's question exhibiting a cognitive level of analyzing with an organizing pattern was observed. This question can be seen in the following data.

Data (13)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was subordinating conjunctions.
- Teacher** : For example, Refa didn't come to school yesterday because she was sick. What conjunction is there in that sentence? (1)
- Students** : Because (2)
- Teacher** : The word 'because' belongs to which conjunction? (3)
- Students** : Subordinating (4)

The dialogue between teacher and students unfolded during the core phase of the learning process, focusing on subordinating conjunctions. In Utterance (1), the teacher prompted the students to analyze the conjunction within a given sentence. Utterance (2)

captured the students' response, identifying the word 'because' as a conjunction. Utterance (3) saw the teacher probing further, inquiring about the specific type of conjunction represented by that word. The students, in Utterance (4), responded by stating that it was a subordinating conjunction. The questions posed within this discourse demonstrated a cognitive level of analyzing, utilizing an organizing pattern. By asking these questions, the teacher facilitated the students' use of analytical skills to examine the conjunction within the given sentence and subsequently determine its type.

Furthermore, within the classroom interactions between teacher and students of class XI DPIB at Malang National Vocational School, a teacher's question exhibiting a cognitive level of analyzing with an attributing pattern was observed. This question can be seen in the following data.

Data (14)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was the figure of speech euphemism.
- Teacher** : Euphemism was a figure of speech that used words that were more gentle or polite. For example, if I talked to your parents and then said, "Your child is actually lacking in terms of hearing because his tasks are incomplete," what did it mean, children? (1)
- Student** : Lazy in doing homework, Ma'am (2)

The dialogue between teacher and students unfolded during the core phase of the learning process, centering on the figure of speech, euphemism. In Utterance (1), the teacher elucidated the meaning of euphemisms and provided examples, then prompted the students to interpret the meaning of the figure of speech. Utterance (2) captured the students' response, as they articulated their understanding of the meaning behind the euphemism. The question posed within this discourse demonstrated a cognitive level of analyzing, employing an attributing pattern. By asking this question, the teacher facilitated the students' use of their analytical cognitive skills to interpret the meaning of the euphemism examples presented.

Cognitive Level of Evaluating

Teacher questions classified as evaluating are designed to assess students' understanding of the subject matter at a deeper level. The purpose of these questions is to help students process information critically and then evaluate various related aspects (Ramadhana, Rozimela, & Fitrawati, 2018). As defined by Zulkifli & Abidin (2022), evaluation questions challenge students to evaluate information and provide judgments on ideas based on specific criteria. Rofi'uddin, Susanto, & Widartono (2022) further suggest that evaluation activities involve assessing the truth and logical quality of statements or representations reflecting someone's views, judgments, experiences, or opinions, as well as identifying inferential relationships among them. The patterns found

within the cognitive level of evaluating comprise two categories: checking and criticizing. Evaluation questions with a checking pattern assist students in finding inconsistencies or errors in a process or product, while questions with a criticizing pattern help students provide judgments on a product or process based on specific standards.

Primarily, a teacher's question exhibiting a cognitive level of evaluating with a checking pattern was observed within the classroom interactions between the teacher and students of class XI DPIB at Malang National Vocational School. This question can be seen in the following data.

Data (15)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was writing the title of a review text.
- Teacher** : How was the title of the text, was it correct or incorrect? (1)
- Students** : Correct (2)
- Teacher** : Pay attention carefully, in writing the title, each word is capitalized except for conjunctions and prepositions. Now, did you look at the title in the book, is it correct? (3)
- Students** : No (answered simultaneously) (4)

The dialogue between teacher and students unfolded during the core phase of the learning process, centering on writing the title of a review text. In Utterance (1), the teacher prompted students to analyze the title of a text intended for review. Utterance (2) captured the students' response, confirming the writing of the text title. In Utterance (3), the teacher explained the conventions of title writing in texts and then asked the students to re-examine the title of the review text. Utterance (4) documented the students' response, stating that the title's writing in the review text was incorrect. The questions posed within this discourse demonstrated a cognitive level of evaluating, employing a checking pattern. By asking these questions, the teacher facilitated the students' use of cognitive evaluation to detect errors in the writing of the review text's title.

Furthermore, within the classroom interactions between teacher and students of class XI DPIB at Malang National Vocational School, a teacher's question exhibiting a cognitive level of evaluating with a criticizing pattern was observed. This question can be seen in the following data.

Data (16)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was about the presentation of a lecture assignment.
- Teacher** : Trisna, how was the performance of your friend? (1)
- Student** : Too much foot movement, Ma'am (2)
- Teacher** : His body gestures are still lacking, what else? (3)
- Student** : The voice volume is not audible enough, Ma'am (4)

The dialogue between teacher and students unfolded during the core phase of the learning process, centering on the evaluation of a lecture presentation assignment. In Utterance (1), the teacher prompted the students to evaluate the performance of their classmate who was delivering a lecture. Utterance (2) captured a student's response, focusing on the body language of the student speaker. In Utterance (3), the teacher encouraged other students to also evaluate the speaker's performance. Utterance (4) documented another student's response, highlighting the insufficient volume of the speaker's voice during the lecture. The questions posed within this discourse demonstrated a cognitive level of evaluating, employing a criticizing pattern. By asking these questions, the teacher facilitated the students' use of their evaluative cognitive skills in assessing their classmate's performance in delivering a speech.

Cognitive Level of Creating

Teacher questions classified as creating are designed to stimulate students' creative thinking and foster the development of new ideas that transcend their existing understanding of concepts. The purpose of these questions is to facilitate higher-order thinking by engaging complex thought processes, such as in-depth analysis, synthesis of ideas, evaluation of concepts, and making assumptions (Ramadhana, Rozimela, & Fitrawati, 2018). As defined by Zulkifli & Abidin (2022), creative questions prompt students to synthesize information and subsequently generate original and organized products. These questions not only require students to connect and apply learned concepts but also to create something novel in their own way (Tayyeh, Dehham, & Muhammed, 2021).

In this research, teacher questions with a cognitive level of creating were found to exhibit three distinct patterns: formulating, planning, and producing. (1) Creative questions with formulating patterns assist students in formulating hypotheses based on predetermined criteria. (2) Creative questions with planning patterns guide students in devising procedures aimed at problem-solving. (3) Creative questions with producing patterns encourage students to create a product that meets specific specifications.

Primarily, a teacher's question exhibiting a cognitive level of creating with a formulating pattern was observed within the classroom interactions between the teacher and students of class XI DPIB at Malang National Vocational School. This question can be seen in the following data.

Data (17)

Context : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was the role of AI in the world of education.

Teacher : As for technological advancements, we were all familiar with AI as a form of artificial intelligence in technology. Examples of AI developments then included autonomous vehicles, and there was also something recently viral on TikTok, namely photos that could be illustrated into cartoons. So, how did you

utilize the role of AI in the world of education, especially as students? (1)

Student : We used virtual tutor platforms to practice understanding subject matter that was less understood (2)

Teacher : Smart answer, Dafa. You, as Generation Z, had to be tech-savvy to make daily life easier. This could also be a weapon in competing in the job market. Therefore, children, don't be lazy to learn, especially while in school (3)

The dialogue between teacher and students unfolded during the core phase of the learning process, centering on the role of AI (artificial intelligence) in education. In Utterance (1), the teacher provided information about technological advancements, particularly AI, and then prompted the students to formulate ways in which AI could be utilized in education to benefit students. Utterance (2) captured the students' responses, as they addressed various forms of AI utilization that could be applied to students in the current era. In Utterance (3), the teacher acknowledged and appreciated the students' answers, then encouraged them to leverage the evolving technology of the present time. The question posed in this discourse demonstrated a cognitive level of creating, employing a formulating pattern. By asking this question, the teacher facilitated the students' use of creative cognition to formulate potential applications of AI for students in the educational context.

Furthermore, within the classroom interactions between teacher and students of class XI DPIB at Malang National Vocational School, a teacher's question exhibiting a cognitive level of creating with a planning pattern was observed. This question can be seen in the following data.

Data (18)

Context : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was preparation of the speech text.

Teacher : Here, parents played an important role in supervising or controlling children in accessing the internet. Here, Mother also added to be more selective in choosing playmates so as not to be easily influenced by bad things. Now, what about the closing part? (1)

Student : Conclusion related to technological developments in the present era (2)

The dialogue between teacher and students unfolded during the core phase of the learning process, focusing on organizing the content of a speech text. In Utterance (1), the teacher structured the content of a speech themed around technological advancements and then prompted the students to provide input for the closing part of the speech. Utterance (2) captured the students' response, indicating that the closing part should contain a summary of the speech's content. The question posed in this discourse

demonstrated a cognitive level of creating, employing a planning pattern. By asking this question, the teacher facilitated the students' use of creative cognition to plan the arrangement of the closing section of the technology-themed speech text.

Furthermore, within the classroom interactions between teacher and students of class XI DPIB at Malang National Vocational School, a teacher's question exhibiting a cognitive level of creating with a producing pattern was observed. This question can be seen in the following data.

Data (19)

- Context** : The setting of this conversation was in the classroom. Participants in this conversation were the teacher and all students. The topic of discussion was the figure of speech litotes.
- Teacher** : Litotes was described as a figure of speech that understates. For instance, "Please eat, even with just salt", even though there are five different dishes served. Now, who could make another example of a litotes figure of speech? (1)
- Student** : Me, Ma'am! "Let's stop by my humble shack", even though the house we were heading to had 5 floors and even had a swimming pool, Ma'am. (2)

The dialogue between teacher and students unfolded during the core phase of the learning process, focusing on the figure of speech, litotes. In Utterance (1), the teacher explained litotes figures of speech, provided examples, and then prompted the students to create their own example. Utterance (2) captured the student's response, demonstrating their ability to craft another example of a litotes figure of speech. The question posed in this discourse exhibited a cognitive level of creating, employing a producing pattern. By asking this question, the teacher facilitated the students' use of creative cognition to generate original litotes figures of speech.

The revised edition of Bloom's Taxonomy by Anderson & Krathwohl (2017) categorizes students' cognitive processes into six levels, arranged from low to high: remembering, understanding, applying, analyzing, evaluating, and creating. As noted by Narayanan & Adithan (2015), the first three levels (remembering, understanding, and applying) are classified as Lower Order Thinking Skills (LOTS), while the latter three (analyzing, evaluating, and creating) are classified as Higher Order Thinking Skills (HOTS). The frequency distribution of teacher questions based on cognitive level is illustrated in the following figure.

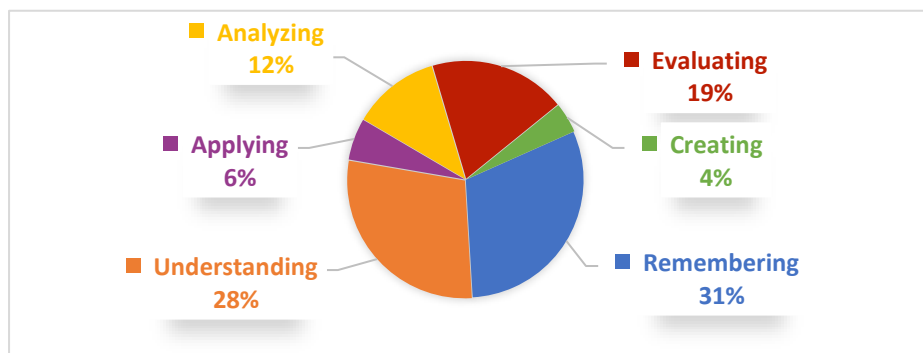


Figure 2. Frequency of Teacher Questions in Indonesian Language Learning

The figure reveals a predominance of Lower Order Thinking Skills (LOTS) questions in Indonesian language learning interactions. This aligns with previous research indicating a prevalence of low-level thinking questions in science education (Ermasari, Subagia, & Sudria, 2014) and early childhood education (Zein & Maielfi, 2020), as well as a minimal use of high cognitive level questions in elementary school assessments (Prasetyo, Harsiati, & Mashfufah, 2022). This over-reliance on LOTS questions may negatively impact student learning outcomes and hinder the achievement of desired educational goals.

Several factors contribute to this issue. Teachers may exhibit detrimental habits, such as asking questions requiring only short answers, not providing adequate wait time for responses, and unevenly distributing questions (Juliangkary & Pujilestari, 2022). Additionally, monotonous teaching techniques, a focus on memorization, and limited exposure to higher-level knowledge can further impede the use of HOTS (Ramadhana, Rozimela, & Fitrawati, 2018). These factors, coupled with inadequate training and limited knowledge regarding the development of higher-order questions, contribute to the prevalence of low-level questions in Indonesian classrooms. To address this challenge, professional development initiatives are needed to equip teachers with the necessary skills to formulate stimulating questions, adopt diverse pedagogical strategies, and enhance their understanding of HOTS.

Learning that fosters HOTS significantly influences the development of students' critical thinking. Narayanan & Adithan (2015) define HOTS as the ability to think critically, encompassing accurate judgment, analysis of content and information, and the synthesis of information into clear communication. This ability extends beyond mere thinking to include effectively conveying information to others. Zakaria, Suyono, & Priyatni (2021) further emphasize that critical thinkers can derive conclusions from knowledge, utilize information for problem-solving, and independently seek relevant information sources. Low critical thinking skills can lead to negative consequences in problem-solving, solutions, and decision-making, while high critical thinking skills tend to yield more positive outcomes. Critical thinking patterns involve training the mind to construct ideas, clarify understanding, determine perspectives, and validate thought processes (Samosir, Hasruddin, & Dongoran, 2019). Critical thinking skills cultivate analytical, innovative, and open-minded individuals.

LOTS (Lower Order Thinking Skills) questions elicit simple answers from students, focusing on low-level thinking processes such as stating facts, defining concepts, or recalling previously learned information. Conversely, HOTS questions demand broader and deeper responses, requiring students to apply knowledge or skills in novel situations. These questions encourage the use of higher-order thinking processes like analyzing, examining, sorting, connecting, expressing opinions, designing, and producing thoughts based on existing knowledge (Prasetyo, Harsiati, & Mashfufah, 2022). Teacher-posed questions are pivotal in facilitating interactive learning (Fitriah, Priyatni, & Suwignyo, 2023). While questions that foster higher-order thinking skills (HOTS) are crucial, questions with lower cognitive levels, such as those focusing on information recall, also play a role in reinforcing foundational understanding. However, excessive use of such questions may not effectively enhance cognitive processes. In the learning context, LOTS (Lower Order Thinking Skills) questions serve to maintain conversational flow and interaction between teachers and students. They can also act as stepping stones, building a solid base of understanding before progressing to HOTS questions. This suggests that low-cognition questions are not inherently negative; they can be used to guide students' reasoning from basic to more critical levels.

To enhance learning quality, Metafisika (2019) emphasizes the importance of teachers considering the skill hierarchy when designing questions, ranging from lower to higher cognitive levels. Teacher questioning significantly impacts students' cognitive levels, as well-designed questions that align with their cognitive demands directly influence engagement and information processing. By tailoring questions to students' thinking abilities, teachers can maximize learning effectiveness, encouraging critical thinking and independent problem-solving. Furthermore, Indriyani, Djahir, & Barlian (2015) highlight the crucial role of schools in supporting teachers to create effective learning environments. Providing resources like teaching materials can enhance classroom instruction quality. Collaboration between skilled teachers and well-equipped schools fosters a learning environment that stimulates students' intellectual growth.

CONCLUSION

The research findings and discussions conclude that teacher questions in Indonesian language learning interactions can be categorized into two levels of cognitive processing: high-level and low-level. Questions that stimulate high-level thinking processes effectively promote students' critical and creative thinking skills, while those involving low-level thinking processes serve as a foundation for building towards more complex understanding. Contrary to some assumptions, low-level cognitive questions are not inherently detrimental to the learning process. These questions, which often involve remembering, understanding, and applying information, can elicit rapid and concise responses from students, thereby maintaining dynamic classroom interactions. Specific patterns within these cognitive levels were identified: remembering (stating information, recognizing); understanding (interpreting, exemplifying, classifying, summarizing, concluding, comparing, and explaining); and applying (executing, implementing). Higher-

order thinking questions, encompassing analyzing (distinguishing, organizing, attributing), evaluating (examining, criticizing), and creating (formulating, planning, producing), are equally crucial for fostering deeper engagement and higher-order thinking skills.

The implications of this study underscore the importance of incorporating both low-level and high-level cognitive questions in educational settings. Low-level thinking questions, focusing on remembering, understanding, and applying, establish a crucial foundation for students to grasp basic concepts and information. Meanwhile, higher-order thinking questions, such as those involving analyzing, evaluating, and creating, encourage students to engage in deeper cognitive processes, fostering critical analysis and creativity. Educators are advised to strike a balance between these two types of questions in their classroom interactions. By strategically integrating both, teachers can cultivate a more comprehensive and stimulating learning environment. This balanced approach not only supports students in mastering content knowledge but also enhances their ability to think critically and creatively, aligning with the broader educational goal of nurturing individuals equipped to tackle future challenges.

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