



## Bloom's Taxonomy Study: Reconstruction of Low-Level to High-Level Thinking Skills in Arabic Language Education Competency Test Questions for Grade XII

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### ABSTRACT

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In 2018, the Indonesian Ministry of Education implemented a policy on integrating Strengthening Character Education and learning oriented towards High Order Thinking Skills or HOTS. The study aimed to develop LOTS-level questions in Arabic language education subjects for grade XII SMA/K into HOTS-level questions. This study uses the Design Based Research method. The development of this model consists of 4 stages, namely 1) the identification and analysis of problems by researchers and practitioners collaboratively, 2) the developing of solutions based on theoretical benchmarks, existing design principles, and technological innovations, 3) carrying out an iterative process to test and improve solutions practical 4) reflection to produce design principles and improve the implementation of practical solutions. The results of this study show that students can easily work on LOTS questions with an average score of 83. When given HOTS questions, they get a lower average score of 62. From the results of the research that has been conducted, the researcher found that 82 questions were still at the LOTS level. LOTS level questions can be developed into HOTS level questions using 1) analyzing language rules (C4), 2) linking meaning relations (C4), 3) analyzing paragraph understanding (C5), 4) comparing word meanings (C6), 5) analyzing sentence structure (C4), 6) analyzing language rules (C4).

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### Introduction

Bloom's Taxonomy has become an important reference framework in the world of education to classify the cognitive levels expected of students. In education, Bloom's taxonomy is one of the most influential theoretical frameworks in curriculum design, teaching material development, and learning evaluation (Callaghan-Koru & Aqil, 2022; Momen et al., 2023; Radmehr & Drake, 2019; Sönmez, 2019). The taxonomy introduced by Benjamin Bloom in 1956 classifies educational objectives into six categories: knowledge, understanding, application, analysis,

synthesis, and evaluation (Aripin et al., 2020; Hrebin et al., 2020; Ilhami, 2024; Zhao et al., 2022). These categories are divided into two major levels: low-order thinking skills (LOTS) and high-order thinking skills (HOTS) (Ariyanto et al., 2020; Jaenudin et al., 2020; Warmadewi et al., 2019).

The 2013 curriculum introduced the importance of developing high-order thinking skills (Anjani, 2024). Furthermore, in 2018, the Indonesian Ministry of Education implemented a policy on integrating Strengthening Character Education and learning oriented towards higher-order thinking Skills or HOTS (Haniah et al., 2020; Kosasih et al., 2022; Santika, 2021; Suwarma & Apriyani, 2022).

In the context of Arabic language learning, applying Bloom's taxonomy can help teachers design questions that not only measure basic understanding but also encourage students to think critically and creatively (Arifin et al., 2021; Faturrahman, 2022; Nfissi et al., 2023). At the high school/vocational school level, Bloom's taxonomy application in creating competency test questions often focuses on aspects of low-level thinking skills. Questions that predominantly measure knowledge and understanding tend to be insufficient to prepare students to face global challenges that require analytical, synthesis, and evaluation skills.

In 2020, Ahmad Muradi et al. conducted a study with the theme HOTS entitled "Higher Order Thinking Skills in Basic Arabic Language Competencies." This study found that the basic Arabic language competencies in KMA 183 in 2019 accommodated high-level thinking skills such as problem-solving, critical thinking, and reasoning. Meanwhile, the Basic Competencies in KMA have not reached creative thinking and decision-making (Muradi et al., 2020). In another study in 2024, Luthfiyatun Nisa Arifin and Hikmah also conducted a similar study and found that students did not experience many difficulties in carrying out HOTS questions. Only one point of difficulty experienced by students during HOTS questions was at point C6 (creating). Namely, students were ordered to compose freely according to their instincts and abilities (Luthfiyatun Nisa Arifin & Hikmah, 2024).

Based on the literature review above, this study aims to develop LOTS-level questions in Arabic language education subjects for grade XII SMA/K into HOTS-level questions. The focus of this study is to make LOTS-level questions in Arabic language education textbooks for grade XII SMA/K into HOTS-level questions.

## **Method**

This study uses a Design-Based Research (DBR) approach. This research method combines theory and practice to develop and validate relevant solutions to complex educational problems (Judijanto et al., 2024). Design-based research allows researchers to interact directly with the actual teaching context to apply the research results practically in real situations (Astari et al., 2022; Sugiyono, 2015).

The initial stage in this study was to identify problems that exist in the context of teaching Arabic in grade XII, especially related to the use of Bloom's taxonomy in compiling competency test questions in the Arabic Language Education textbook for grade XII published by the PP Muhammadiyah Dikdasmen Assembly. Furthermore, the researcher designed a prototype of competency test questions oriented towards developing HOTS using Bloom's taxonomy. After compiling competency test questions that were oriented towards developing HOTS, the researcher conducted a trial in a real class XII environment.

The final stage of this study was when the trial results were obtained, the researcher conducted an evaluation, made improvements to questions that were not by HOTS, and applied HOTS to the questions that had been compiled.

## **Result**

### **1. Problem Identification and Analysis**

In the first stage of this research, the problem identified was the dominance of questions categorized as Lower-Order Thinking Skills (LOTS) compared to Higher-Order Thinking Skills (HOTS) questions in the competency test in the Arabic Language Education textbook for grade XII. The researchers analyzed the existing exam questions and found that most questions only measured basic abilities such as remembering, understanding, and applying, according to the lowest level in Bloom's Taxonomy.

The discussion between the researchers resulted in an agreement that the use of HOTS questions needs to be improved to encourage students to think more critically and analytically. The challenge faced is the need for more understanding of practitioners regarding creating HOTS questions by the curriculum and student abilities.

### **2. Solution Development**

Lower-Order Thinking Skills (LOTS) in Bloom's Taxonomy consist of the three lowest cognitive levels: Remembering (C1), Understanding (C2), and Applying (C3). Questions in the LOTS category usually require students to remember information, understand basic concepts, and apply the knowledge learned in a familiar context.

For example, the following question is taken from the Arabic textbook for grade XII published by the Muhammadiyah Elementary and Secondary Education Council,

**LOTS Questions**

**Question 1**

Pengucapan yang benar kalimat “ وسائل ” adalah...  
”الإتصال” adalah...

- a. *Wasaailul ittishaali*
- b. *Wasailul ittiishaali*
- c. *Waasaailul itishali*
- d. *Wasaailul ittisaali*
- e. *Wasaailul itisaali*

**Question 2**

Sinonim dari kata ذهب adalah...

- a. رجع
- b. سكن
- c. بحث
- d. ثبت
- e. رحل

**Question 3**

هناك أنواع وسائل الإتصال مثل : المحمول، والتلفاز،  
والمذياع، والحاسوب، والفيديو، والإنستغرام،  
والتوتير، واللين، والبريد الإلكتروني، والويب، والوتسف  
Berikut macam-macam media komunikasi  
yang terdapat pada kalimat di atas,  
kecuali...

- a. التلفاز
- b. أنواع
- c. والوتسف
- d. الإنستغرام
- e. المذياع

**Question 4**

Frase “سيارة الأجرة” artinya adalah...

- a. Mobil
- b. Tiket
- c. Travel
- d. Taksi
- e. Bus

**Question 5**

؟ - نعم، - عندي - هل - كمبيوتر - كمبيوتر -  
عندك

Urutan yang benar dari kalimat di atas  
adalah...

- a. هل كمبيوتر عندك ؟ نعم، عندي كمبيوتر
- b. نعم، عندي كمبيوتر ؟ هل عندك كمبيوتر
- c. هل عندك كمبيوتر؟ نعم، عندي كمبيوتر
- d. ،عندك كمبيوتر هل عندك كمبيوتر ؟ نعم
- e. ،هل عندك كمبيوتر عندي كمبيوتر؟ نعم

**Question 6**

حنيف : .....

مروان : نعم، لي محمول

Pertanyaan yang tepat untuk jawaban di  
atas adalah...

- a. ما هو المحمول
- b. هل المحمول جديد
- c. هل لك محمول
- d. أين المحمول
- e. من عنده محمول

This study analyzed six Arabic language competency test questions for grade XII based on Bloom's Taxonomy to identify the measured thinking ability level. Question 1 is at level C1, with the operational verb mentioned. This question asks students to recall basic information from previously studied texts. Question 2 is at level C1, with the operational verb memorize, where students are asked to find out the meaning and synonyms of the given sentence. Furthermore, question 3 operates at level C2 but focuses on students' understanding of information. Question 4 is at level C2, with the operational verb interpret, where students must switch the language of a phrase from Arabic to Indonesian. Question 5 is at level C3, asking students to arrange several words into a sentence structure. Finally, question 6 at level C3 asks students to determine the appropriate question text for an expression in a certain context.

### 3. Reconstruction of Arabic Language Competency Test Questions to HOTS Level

After identifying questions included in LOTS, the next step is to reconstruct the questions into HOTS questions. HOTS includes the three highest cognitive levels in Bloom's Taxonomy, namely Analyzing (C4), Evaluating (C5), and Creating (C6). The following are examples of questions that have been developed from LOTS to HOTS,

HOTS Questions	
<b>Question 1</b> يذهب إلى المدرسة الثانوية. يذهب إلى المدرسة بالحافلة مبكرا. وهو يحمل الهاتف لوسائل الإتصال. كان عليّ يجتهد في الدراسة لينجح في المستقبل. Dari paragraf di atas, kalimat manakah yang mengandung struktur <i>mudhaf</i> dan <i>mudhaf ilaihi</i> ? a. جديد طالب b. الثانوية المدرسة c. المستقبل في d. مبكرا بالحافلة f. الإتصال وسائل	<b>Question 2</b> ..... = رحل : ذهب Manakah yang memiliki kaitan yang sama dengan kata di atas ? a. خرج : دخل b. جلس : قام c. قعد : جلس d. جرى : مشى e. شرب : أكل

### Question 3

هناك أنواع وسائل الإتصال مثل : المحمول، والتلفاز، والمذياع، والحاسوب، والفيسبوك، والإنستغرام، والتوتتير، واللين، والبريد الإلكتروني، والويب، والوتسف  
Ungkapan yang sesuai dengan paragraf di atas adalah ...

- الحاسوب والإنستغرام والمذياع من أنواع وسائل الإتصال
- الفيسبوك والتوتتير والوتسف من أنواع وسائل النقل
- المذياع والتلفاز ليسا من وسائل الإتصال
- الحافلة والسيارة من أنواع وسائل النقل
- المحمول والويب والموز من أنواع وسائل الإتصال

### Question 5

هل عندي كمبيوتر ؟ نعم، عندك كمبيوتر  
Kalimat di atas memiliki urutan yang salah. Urutan yang benar dari kalimat di atas adalah...

- هل كمبيوتر عندك ؟ نعم، عندي كمبيوتر
- نعم، عندي كمبيوتر ؟ هل عندي كمبيوتر
- هل عندك كمبيوتر؟ نعم، عندي كمبيوتر
- ،عندك كمبيوتر هل عندك كمبيوتر ؟ نعم
- ،هل عندك كمبيوتر عندي كمبيوتر؟ نعم

### Question 4

Frase “سيارة الأجرة” memiliki arti “Taksi”.  
Penggunaan kata “Taksi” yang tepat terdapat pada kalimat ...

- أشترى تذكرة سيارة الأجرة في المطار
- جاءت سيارة الأجرة من المستشفى ليأخذ المريض
- سيارة الأجرة أكبر من الحافلة
- تمشي سيارة الأجرة على البحر
- رأيت سيارة الأجرة في الشوارع

### Question 6

حنيف : ما لك محمول ؟  
مروان : نعم، لي محمول  
Kata tanya atau adatul istifham pada kalimat di atas salah, yang tepat adalah...

- من
- هل
- أين
- كيف
- كم

After analyzing the questions, the researcher conducted a reconstruction to develop six LOTS questions into HOTS questions. Question 1, originally at level C1, was developed into a question at level C4, with the operational verb analyze. This new question asked students to dissect sentence components and explain the relationship between the components. Question 2, originally at level C1, was reconstructed into a question at level C4, where students were asked to relate the appropriateness of word meanings in a certain context. Question 3 was changed from level C2 to C5, with students being asked to summarize a paragraph into one sentence that describes the paragraph's content. Question 4 was developed from C2 to C6, with students having to correct the

use of phrases in the appropriate text. Question 5, previously at level C3, was reconstructed into a question at level C4, where students were asked to edit incorrect grammar into the correct text. Finally, question 6 was reconstructed from C3 to C4, with students being asked to correct the language style of the dialogue based on the given situation.

## **Discussion**

The change from LOTS to HOTS questions was made by increasing students' cognitive demands for answering the questions. In this reconstruction, questions that previously only tested the ability to remember (C1), understand (C2), and apply (C3), were changed into questions that required students to analyze (C4), evaluate (C5), and create (C6). The methods used by the researcher include,

- 1) Language Principle Analysis on question number 1
- 2) Meaning Relation Linkage on question number 2
- 3) Paragraph Understanding Analysis on question number 3
- 4) Comparison of Word Meanings on question number 4
- 5) Sentence Structure Analysis on question number 5
- 6) Language Style Structure Analysis on question number 6

In the testing stage, the researcher involved 13 grade XII SMA/SMK/MA students from 3 different schools to work on the LOTS and HOTS questions that had been developed. The test results showed that the average completion of LOTS questions was 83%, while HOTS questions had an average of 62%. This significant difference indicates that the HOTS questions created have a higher difficulty level than LOTS questions, with the research objective of developing questions requiring high-level thinking skills.

This result is considered successful in designing HOTS questions in the reflection stage because students face greater challenges requiring deeper analytical, evaluation, and creative skills. Although the average results of students in HOTS questions are lower, this shows that the questions have succeeded in increasing the difficulty level and testing students' cognitive abilities more complexly. The researcher recognizes the need for adjustments in learning strategies to help students overcome these challenges and improve their results on HOTS questions in the future.

## **Conclusion**

Through these four stages of DBR, the study successfully identified the problems found in the Arabic Language Education textbook for grade XII of SMA/SMK, developed LOTS questions into HOTS questions, tested them in grade XII students, and refined the development, and reflected on the results and implemented them practically. The results of this study show that students can



easily work on LOTS questions with an average score of 83. When given HOTS questions, they get a lower average score of 62. From the results of the research that has been conducted, the researcher found that 82 questions were still at the LOTS level. LOTS level questions can be developed into HOTS level questions using 1) analyzing language rules (C4), 2) linking meaning relations (C4), 3) analyzing paragraph understanding (C5), 4) comparing word meanings (C6), 5) analyzing sentence structure (C4), 6) analyzing language rules (C4). This study provides an important contribution to developing HOTS questions in high schools, especially in Arabic language learning, and is expected to be a reference for future curriculum development.

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