

INCORPORATING HIGHER ORDER THINKING SKILLS INTO ENGLISH SUMMATIVE ASSESSMENTS

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Abstract: Higher-Order Thinking Skills (HOTS) are pivotal for 21st-century education, with assessment being a key method to foster these skills. This research investigates the extent to which HOTS are incorporated into English teachers' summative assessments at an Islamic junior high school in Banda Aceh. Utilizing Anderson's (2001) classification, which separates cognitive abilities into lower-order thinking skills (LOTS), such as remembering, understanding, and applying, and higher-order thinking skills, including analyzing, evaluating, and creating, this qualitative analysis focused on three summative assessment documents. These documents comprised 150 test items, with 145 in a multiple-choice format and 15 as essay questions. Each question was categorized and quantified into percentages reflecting their cognitive level. Findings revealed a predominance of LOTS over HOTS in these assessments, with HOTS questions constituting only 4.6% (7 out of 150 questions). Consequently, the study highlights a significant inclination towards LOTS in the summative assessments of English at the Islamic junior high school. This underscores the necessity for educators to integrate more HOTS-focused questions to enhance students' analytical, creative, and problem-solving skills.

Keywords: *higher-order thinking skill; lower-order thinking skill; summative assessment.*

INTRODUCTION

Education in the 21st century is marked by the development of several learning skills that must be possessed by students including collaboration, communication, creativity, and critical thinking (4C) (Kurniawan et al., 2021). By having these skills, students are expected to compete on the global scene. Future challenges and problems will be increasingly complicated, making it difficult to solve them by using ordinary solutions. Therefore, education needs to prepare the students for having and developing these essential skills.

Higher-Order Thinking Skills (HOTS) are essential in nurturing 21st-century competencies in education, with teaching, learning activities, and assessment methods acting as critical vehicles for their development. HOTS enable students to engage in creative, logical, and critical thinking, crucial for tackling new challenges, adapting to

changes, and making informed decisions, thereby enhancing educational quality (Wilson & Narasuman, 2020; Saputra, 2016; Retnawati et al., 2018). Within the Indonesian education framework, the 2013 Curriculum (K-13) places a strong emphasis on integrating HOTS into both the pedagogical process and assessments, aiming to deepen and broaden student engagement with the material (Amali et al., 2022).

The role of educators is paramount in fostering these advanced cognitive skills. Widiawati et al. (2018) highlight the impact of instructional design on students' cognitive development, advocating for learner-centered approaches that encourage students to actively gather information and engage in analytical, evaluative, and creative thinking. Such approaches necessitate the adoption of HOTS-centric instructional strategies, including

innovative, collaborative, and problem-solving activities (Mulyasa, 2017).

Assessment also plays a fundamental role in cultivating HOTS, serving as an effective strategy to promote these skills (Berg, 2004). Through varied assessment forms—written, oral, and performance tests—teachers can gauge and enhance students' thinking capabilities. This necessitates a deep understanding of HOTS-oriented assessment design, aligning with the Indonesian government's directive to utilize Bloom's revised taxonomy for crafting assessments that stimulate higher cognitive processes (Anderson et al., 2001; Widiastuti & Saukah, 2017).

Summative assessments, in particular, offer opportunities to measure student learning outcomes comprehensively, allowing for the incorporation of HOTS to evaluate student knowledge and skills post-instruction (States et al., 2018). However, the implementation of HOTS in assessments remains a challenge for some educators, as observed in an English examination in Aceh Besar, where the focus was predominantly on LOTS, indicating a gap in teachers' ability to design HOTS-based assessment items (Pratiwi et al., 2019; Febriyana & Harjanto, 2023).

Despite the emphasis on HOTS in policy and curriculum, studies on its application in English National Examinations and teacher-made tests reveal a significant underrepresentation of HOTS in assessment items. Findings demonstrate a prevalence of LOTS in the assessments, with a minimal presence of items evaluating higher cognitive levels, underscoring the need for enhanced teacher training and competency in creating HOTS-based assessment items (Narwianta et al., 2019; Putra and Abdullah, 2019; Widyaningsih and Septiana, 2019; Ilham et al., 2020; Pratiwi et al., 2019; Utami et al., 2019; Dewi & Sukarni, 2020; Wisrance and Semiun, 2020; Syahdanis et al., 2021; Apriana et al., 2022; Febriyana & Harjanto, 2023).

The exploration above highlights the minimal incorporation of Higher-Order Thinking Skills (HOTS) in teacher-constructed assessments, despite their critical role in enhancing students' critical thinking abilities. Furthermore, there's a noticeable gap in research focusing on the application of HOTS in English assessments for junior high school students in Aceh. As a result, researchers are drawn to investigate this area, specifically in a school that has adopted the 2013 curriculum, where teachers design the summative assessments and have integrated HOTS into their

teaching methodologies, such as through problem-based learning and group discussions. This study aims to determine the prevalence of HOTS in English summative assessments crafted by teachers.

Bloom's Taxonomy, introduced by Benjamin S. Bloom in 1956, serves as a foundational model for setting educational objectives, designing tests, and developing curricula. It categorizes learning goals into cognitive, affective, and psychomotor domains, with the cognitive domain being paramount. This domain is subdivided into six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation, further classified into lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS), the latter representing more complex cognitive processes.

Anderson and colleagues' 2001 revision of Bloom's Taxonomy aimed to rejuvenate its utility for educators, delineating cognitive processes into six categories: remember, understand, apply, analyze, evaluate, and create. This revision emphasizes the progression from basic recall to the creation of new ideas, with each level encompassing specific cognitive processes from recognizing and recalling to generating, planning, and producing new solutions.

Summative assessment, as defined by Earl (2003) and further discussed by Lam (2013) and Stiggins (2001), is a method of evaluating student development and achievement at certain points, such as the end of a teaching period or course. Known as Assessment of Learning (AoL), it summarizes student learning to provide feedback on their performance relative to others, serving as a valuable tool for students, teachers, parents, and administrators. Examples of summative assessments include final examinations and proficiency tests, reflecting a comprehensive evaluation of student learning outcomes.

The study identifies a significant research gap by highlighting the insufficient integration of Higher-Order Thinking Skills (HOTS) in English language assessments, particularly within teacher-made tests at the junior high school level. While the importance of HOTS in fostering critical thinking and analytical abilities is widely recognized, there remains a notable disparity between theoretical aspirations and practical implementation in educational assessments. This gap is especially pronounced in specific regional contexts, such as Islamic Junior High Schools in Banda Aceh, where localized research on the application of HOTS in English summative assessments is scarce. Furthermore, despite the

2013 curriculum advocating for HOTS and student-centered methodologies, there is a lack of empirical evidence on how these frameworks translate into practical assessment strategies employed by teachers, particularly in summative evaluations.

The novelty of this research lies in its targeted exploration of HOTS implementation in an under-researched geographical and educational setting. By conducting a detailed qualitative content analysis of English examination documents across multiple grade levels in an Islamic Junior High School in Banda Aceh, the study offers fresh insights into the practical application of educational policies and HOTS in local contexts. The use of Revised Bloom's Taxonomy for classifying test items according to cognitive levels provides a nuanced understanding of the cognitive demands placed on students through summative assessments. This methodological approach not only uncovers the extent to which HOTS are incorporated into teacher-made tests but also contributes to a deeper understanding of how cognitive skills are being developed and assessed in educational settings. Consequently, the research fills a critical void by offering empirical data on the integration of HOTS in educational assessments, thereby informing future curriculum development, teacher training, and assessment design efforts aimed at enhancing the practical application of HOTS in line with contemporary educational standards.

METHOD

This research utilized qualitative content analysis to examine the use of Higher-Order Thinking Skills (HOTS) in English summative assessments by teachers. The investigation was conducted in an Islamic Junior High School located in Banda Aceh, focusing on English exam papers for 7th, 8th, and 9th grades created by teachers for the 2022/2023 academic year. Analysis was conducted on three English summative assessment documents, comprising 150 test items—145 of which were multiple-choice questions and 15 were essay questions.

To carry out the analysis, the study employed a checklist table and a basic statistical formula as tools. The initial step involved collecting the English exam documents from teachers at the school. Subsequently, all exam questions were catalogued on the checklist table. Each question was then meticulously reviewed and categorized according to its cognitive level as defined by the Revised Bloom's Taxonomy (levels of

remembering, understanding, applying, analyzing, evaluating, or creating).

Moreover, to calculate the proportion of each cognitive level present in the English summative assessments, the following formula was applied:

$$\text{Implementation of HOTS} = \frac{\text{Total of HOTS}}{\text{Total of test items}} \times 100\%$$

RESULTS AND DISCUSSION

The investigation highlighted that the most prevalent type of question in the summative assessments by English teachers was focused on Lower Order Thinking Skills (LOTS), as detailed in Table 1. An overwhelming 95.4% of the questions (143 out of 150) were categorized as LOTS. Specifically, 37.4% (56 questions) targeted the remembering level, 50.7% (76 questions) aimed at the understanding level, and 7.3% (11 questions) addressed the applying level. In contrast, Higher Order Thinking Skills (HOTS) represented a minor portion, only 4.6% (7 questions), which included those assessing analyzing and applying levels. Notably, there were no questions designed to assess the creating level. Table 1. *The distribution of cognitive level in English teachers' summative assessment*

Cognitive Level	Frequency	Percentage
Remembering	56	37.4%
Understanding	76	50.7%
Applying	11	7.3%
Analyzing	5	3.3%
Evaluating	2	1.3%
Creating	-	-
	150	100%

C1 (Remembering)

From the analysis, there were 56 test items belonging to the remembering level (C1) based on Bloom's revised taxonomy theory. The questions that were categorized into C1 required to recall of information from long-term memory or any other form of accessing pertinent knowledge. Usually, the text contained the response to C1 questions. Several examples of C1 questions found in the document are presented below:

The following text is for questions 54 to 57

I live almost 50 miles away from my workplace, necessitating an early start each day due to the lengthy commute. Mornings are a blur, with hardly any time for a leisurely breakfast. By

6:00 AM, I'm on the road, embarking on the extensive journey to work.

While I generally prefer highway driving over navigating city streets, the congested traffic during peak hours diminishes the experience. To alleviate the irritation of bumper-to-bumper traffic, I find solace in playing classical music by Chopin, Mozart, and Bach in my car, which significantly lifts my spirits.

The trip to my job typically consumes an hour. However, the return journey in the evening is even more prolonged, extending to approximately 70 minutes. Recently, I've been contemplating switching to commuting by train as an alternative to driving. This change would allow me the pleasure of listening to music through headphones and the opportunity to indulge in reading a novel, making the most of my travel time.

Question number 54

When does he wake up every morning?

- A. He wakes up at exactly 06.00 AM
- B. He wakes up earlier in every morning
- C. He used to wake up early in the morning
- D. He woke up so early yesterday

Question number 55

Does he take longer to drive when going back home every evening?

- A. No, he doesn't
- B. No, he didn't
- C. Yes, he does
- D. Yes, he did

Question number 56

How is driving during the morning rush hour?

- A. It's classical
- B. It's relaxing
- C. Not as much fun as walking
- D. Not very enjoyable

Question number 57

What else does he think he could even do if he took a train to work?

- A. Read a novel
- B. Sing songs
- C. Write a book
- D. Do crossword puzzles

These questions fall under the category of remembering level (C1) because they require students to retrieve specific details provided in the text. For instance:

The solution to question 54 is directly indicated in the second sentence of the first paragraph,

highlighting the character's need to wake up early every morning.

The response to question 55 is detailed in the second sentence of the third paragraph, noting that the return journey in the evening is notably longer.

Similarly, the answer to question 56 is found within the text, specifically in the description of the morning commute in the third paragraph.

Finally, the correct answer to question 57 is explicitly mentioned in the concluding sentence of the passage, describing additional activities the character considers if opting for the train.

In each case, students are simply required to pinpoint and recall information explicitly stated in the text, demonstrating the emphasis on remembering level tasks within this assessment. "... .., and even read a novel at the same time".

C2 (Understanding)

The majority of cognitive levels discovered in the English teachers' summative assessment was understanding level (C2), 76 out of 150 questions. The following were some examples and their descriptions:

Question number 3

Medical staff : Your clinic card, please?

Anton : Oops . . . I forgot to bring it.

Medical staff : It's okay.

- A. Thanks
- B. I'm sorry
- C. Hello
- D. How come

Question number 8

Andre, this hat isn't mine. Is it ..

- A. Your
- B. You
- C. Yours
- D. Him

Question number 27

"... she stays home or spends her time for recreation."

The underlined word can be best replaced by

- A. Vacancy
- B. Amusement
- C. Longing
- D. Acting

Based on the analysis, items number 3, 8, and 27 in the test were categorized on the level of understanding (C2). To answer those questions, students had to read and understand the conversation or text given. For question number 3, students were asked to put the correct response to complete the conversation. It required more than just remembering, they needed to differentiate the usage of those words. Then, item number 8 was a C2 question because it required students' comprehension of pronouns. To get the answer, students had to decide what kind of pronoun that

could be used in the sentence. Last, the answer to question number 27 could be found if students knew the meaning of the sentence. They chose a synonym from the options given, and the correct answer was shown with the meaning remaining the same if the underlined word is substituted.

C3 (Applying)

There were 11 questions included in the applying level (C3) based on document analysis. Some of the questions were exemplified and explained as follows:

Question number 10

the lights – you – before – leave – turn off
1 2 3 4 5
– the room.
6

The correct arrangement is

- A. 5 – 1 – 3 – 2 – 4 – 6
- B. 5 – 6 – 3 – 2 – 4 – 1
- C. 4 – 6 – 3 – 5 – 2 – 1
- D. 4 – 1 – 3 – 2 – 5 – 6

Question number 10 belonged to the applying level (C3) because students were requested to answer the question by applying their acquired knowledge about the grammatical form to construct a correct sentence.

Question number 146 (essay)

Change the verbs in the parentheses into the present perfect tense

- a. The children _____ (sleep) for about an hour.
- b. I already _____ (clean) the whole house by myself.

The above questions fell into the applying level (C3) because they dealt with utilizing the procedure in completing these tasks. The students must master the rule of each tense so that they can apply it to write the correct form of verbs in sentences given.

C4 (Analyzing)

The researcher found five questions classified as the analyzing level (C4). The following were two examples and their explanation:

Question number 9

Rearrange these sentences into a good paragraph.

- 1) It is a five-star hotel.
- 2) The hotel is not very big, but the architecture is very beautiful.
- 3) There is a new hotel in my city.

4) It is located in the downtown.

5) It looks like a classis castle in Europe.

- A. 1 – 3 – 4 – 2 – 5
- B. 5 – 1 – 4 – 2 – 3
- C. 4 – 1 – 3 – 2 – 5
- D. 3 – 1 – 4 – 2 – 5

Question number 50 (essay)

Arrange the following sentences into a good paragraph.

- 1) Hi, My name is Lukman.
- 2) We try a new recipe every week.
- 3) I am a student at a Junior High School, MTsN 1 Banda Aceh.
- 4) I want to be a chef one day.
- 5) My hobby is cooking.
- 6) I cook every day.
- 7) It is fun.
- 8) There are ten kids in a club.
- 9) I also join a cooking club.

Those two questions were part of the analyzing level (C4), where students were required to arrange a few sentences together to make a good paragraph. The students must read each sentence and know its meaning to answer these items. They had to decide the first sentence, the second, and so on. In other words, the students had to be able to analyze how one sentence linked to another.

C5 (Evaluating)

Evaluating level (C5) refers to the ability to give an opinion or make a judgment about something in the information presented. There were merely two questions taken from the document that classified to this level. The question was shown and explained as follows:

Mrs. Novia is a medical professional known for her distinct features: a pointed nose, sleek hair, and a light yellowish complexion. Standing tall at approximately 170 cm and weighing around 56 kg, she has a slender build. She is employed at a large hospital situated close to where she lives, with her workday beginning at 7 AM and concluding at 4 PM. She is well-regarded by all for her consistent kindness and the cheerful demeanor she maintains while caring for her patients and interacting with acquaintances. During weekends, Mrs. Novia prefers to relax at home or engage in leisure activities.

Question number 25

What is Mrs. Novia's best characteristic? (question number 25)

A. strange
B. conceited

C. Friendly
D. Eccentric

This study found that the inclusion of Higher Order Thinking Skills (HOTS) questions in English teachers' summative assessments was minimal. Out of 150 questions analyzed, only 4.6% (7 questions) were identified as HOTS, predominantly featuring Lower Order Thinking Skills (LOTS) questions. This trend aligns with prior research, such as Wisrance and Semiu (2020), which observed a scarcity of HOTS in teacher-crafted tests at the junior high school level, with a focus primarily on remembering (C1) and understanding (C2) according to the Revised Bloom's Taxonomy. Similar findings were reported by Pratiwi et al. (2019), Dewi & Sukarni (2020), Syahdanis et al. (2021), Utami et al. (2019), and Apriana et al. (2022), highlighting a preference among senior high school English teachers in Indonesia for LOTS questions, which do not adequately encourage critical thinking or reasoning skills among students.

The study observed that the prevalence of multiple-choice questions, which constituted 145 out of 150 questions analyzed, contributed to the dominance of LOTS. Multiple-choice formats are often critiqued for focusing on lower-level cognitive processes and offering students the opportunity to guess answers, thus not effectively assessing their ability to analyze, evaluate, or create (Gareis & Grant, 2015; Magno, 2003; McKenna, 2019). Despite analyzing 15 essay questions, the study still found a majority to be LOTS, with only two classified as HOTS at the analysis level (C4), involving the organization of sentences into coherent paragraphs.

In conclusion, the study indicates that English teachers are not fully adhering to the demands of the 2013 curriculum for incorporating HOTS in assessments, reflecting a reluctance to pose challenging questions that foster higher-level cognitive skills in students.

CONCLUSION

The study concluded that Higher Order Thinking Skills (HOTS) were underrepresented in the summative assessments crafted by English teachers for the 2022/2023 academic year, with a predominance of Lower Order Thinking Skills (LOTS) questions. This trend suggests a deficiency in the teachers' ability to develop questions that foster critical thinking, as most questions focused on assessing students' memory and comprehension

abilities rather than their analytical or evaluative skills.

Given these findings, it's imperative for English teachers and educational institutions in Indonesia to prioritize the integration of HOTS in question development. Schools should consider offering professional development opportunities, such as workshops or training sessions, to equip English teachers with the necessary skills to construct HOTS-based questions effectively. Additionally, teachers are encouraged to deepen their understanding of HOTS and explore best practices for incorporating such skills into their assessments.

Future research should broaden the scope beyond summative assessments to include formative assessments as well, allowing for a more comprehensive understanding of HOTS application in educational settings. This study's limited scope underscores the need for more expansive research to fully grasp how HOTS are being implemented across various schools and educational contexts.

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