HOTS DIMENSIONS IN SCHOOL EXAMINATION ITEMS FOR JAVA LANGUAGE SUBJECT SENIOR HIGH SCHOOL 12 SEMARANG

Zulfa Za Vulkhaq[1)], Mujimin[2)]

Department of Javanese Language and Literature, Faculty of Languages and Arts, Universitas Negeri Semarang, Indonesia

zulfazavulkhaq@students.unnes.ac.id

mujimin@mail.unnes.ac.id

Abstract:

This research aims to identify the dimensions of Higher Order Thinking Skills (HOTS) in Javanese school exam questions at Senior High School 12 Semarang based on Bloom's Taxonomy. The research method used is a qualitative descriptive approach with content analysis techniques. Research data in the form of 50 exam questions were analyzed using HOTS indicators which include cognitive levels C4 (analysis), C5 (judging), and C6 (creating). The results of the analysis showed that there were no questions that reached cognitive levels C5 (judging) and C6 (creating). A total of 29 questions were identified as being at level C4 (analysis), with details: 12 questions in sub-dimension C4.1 (Differentiation), 4 questions in sub-dimension C4.2 (Organization), and 13 questions in sub-dimension C4. 3 (Attribution). Meanwhile, the remaining 21 questions are only included in the Low Order Thinking Skills (LOTS) category. These findings indicate that the Javanese language exam questions at Senior High School 12 Semarang are still dominated by questions that measure low-level thinking abilities and do not fully accommodate the development of high-level thinking abilities according to HOTS standards. It is hoped that this research can become the basis for evaluation and development of more challenging questions to improve the quality of learning and evaluation in schools.

Keywords : Analysis, Cognitive Dimensions, Higher Order Thinking Skills.

Introduction

Student thinking skills competence is an important aspect of the educational process that includes the ability to analyze, evaluate, and create solutions to various problems. These thinking skills are divided into two main categories: Lower Order Thinking Skills (LOTS) and Higher Order Thinking Skills (HOTS). LOTS include basic abilities such as remembering and understanding information, while HOTS encompass more complex skills like analyzing data, evaluating arguments, and creating new ideas. In modern education, HOTS are considered more essential as they help students solve unstructured problems and demand creativity and critical thinking (Diffa et al., 2023).

In the 21st-century education era, there is an increasing demand for the development of HOTS competencies in students. This demand is also supported by the rapid development of technology and information, as well as the complexity of global problems faced by society. Education is no longer sufficient to focus solely on knowledge transfer but must also prepare students to think critically and creatively in facing real-world challenges (Mulia et al., 2023). The existing curriculum must be designed to encourage students to develop these higher-order thinking skills through various innovative learning methods and challenging questions such as HOTS questions. This phenomenon is evident from various educational initiatives that begin to integrate digital technology in the learning

and evaluation process to stimulate students' analysis, evaluation, and synthesis abilities.

Competency regulation in the Merdeka Curriculum is a strategic step by the government to improve the quality of education in Indonesia. According to Shinta et al., (2024), the Merdeka Curriculum plays a crucial role in enhancing the quality of education in Indonesia through more enjoyable, creative, and innovative classroom learning models, thereby increasing students' learning interest. This curriculum is designed with a primary focus on developing students' competencies, particularly in terms of critical and creative thinking skills. In this context, the Merdeka Curriculum not only pursues conceptual understanding but also emphasizes the application of knowledge in real-life situations relevant to everyday life. One approach used is project-based learning and problem-solving, which allows students to hone their higher-order thinking skills (Nugraha, 2017).

In the Merdeka Curriculum, competency regulations are structured in such a way that schools and teachers have the freedom to design learning that suits the needs and characteristics of students. Teachers are encouraged to create a learning environment that supports exploration, innovation, and collaboration (Benedicta et al., 2024). This includes the application of HOTS questions in exams, designed to assess students' abilities in analyzing, evaluating, and creating creative solutions to problems. This regulation also encourages the integration of local culture, such as Javanese language subjects, so that students can develop critical thinking skills in the context of their own culture.

This phenomenon indicates a paradigm shift in Indonesian education that focuses more on competency development rather than mere academic achievement. With the Merdeka Curriculum, students are able to become lifelong learners who are adaptive to changes and challenges of the times (Sutrisno, 2020). The implementation of HOTS questions in Javanese language subjects is one concrete form of this effort. Through questions that demand critical and creative thinking, students not only learn the Javanese language and culture in depth but are also trained to apply that knowledge in complex and dynamic situations.

According to Yulianti (2020), evaluating the implementation of High Order Thinking Skills (HOTS) in test items is an important step in assessing the effectiveness of education in developing students' higher-order thinking skills. Previous studies with the same field from Kurniawan (2020), Apriyani (2023), and Arifin (2019) suggest that the analysis evaluation does not cover all aspects but is limited to certain local boundaries, so the distribution of HOTS research results in test items is not fully known and there is a need for quantitative discussion results to support objective results. This evaluation involves a deep analysis of the structure and content of the questions, as well as measuring the extent to which these questions can trigger students' critical and creative thinking. This is done by considering various aspects, including the clarity of instructions, material complexity, and the level of skills required.

This evaluation also demands consistency between learning objectives, curriculum content, and the types of questions presented. HOTS questions must be designed in such a way that they align with the competency standards set in the curriculum and are able to measure students' abilities to apply their knowledge in new and complex contexts. Susanto (2020) agrees that in designing HOTS questions, it is important to ensure that these questions meet curriculum competency standards and can effectively measure students' abilities. This helps in evaluating the extent to which students have achieved the expected skills.

Additionally, the evaluation also considers students' responses to these questions, both in terms of the quality of answers and their success in completing the given tasks. Thus, the evaluation of HOTS implementation in test items is an integral part of the continuous improvement of Javanese language education quality.

Classifying High Order Thinking Skills (HOTS) based on Bloom's taxonomy is an important step in understanding the level of cognitive complexity involved in the student thinking process. Bloom's taxonomy groups cognitive skills into six levels, starting from C1 (remembering) to C6 (creating). At the C1 level, students are asked to recall information that has been learned without needing to understand it deeply. Meanwhile, at the C2 level, students are expected to understand and summarize the given information. When reaching the C3 level, students are then asked to apply their knowledge in real-life situations.

At the C4 level, students are invited to analyze information by breaking it down into smaller parts and identifying relationships between them. Then, at the C5 level, students are invited to evaluate existing information or arguments by assessing their truth, validity, or relevance. Finally, at the C6 level, students are encouraged to create something new based on their knowledge and understanding. By understanding the classification of HOTS based on Bloom's taxonomy, educators can design Javanese language test questions that match students' cognitive abilities and facilitate their development towards higher-order thinking.

In reality, the Javanese language test items created by teachers and tested on students at SMA Negeri 12 Semarang show that not all of these questions fall into the High Order Thinking Skills (HOTS) category. Although the curriculum emphasizes the importance of developing higher-order thinking skills, in reality, many questions are still at the lower cognitive levels such as remembering (C1) and understanding (C2). This may be due to various factors, including the lack of teacher training in designing HOTS questions, limited resources, or a lack of comprehensive understanding of Bloom's taxonomy implementation. As a result, students are not fully stimulated to develop the analysis (C4), evaluation (C5), and creation (C6) abilities that are essential in facing the challenges of 21st-century education. This phenomenon indicates an urgent need to enhance teachers' capacity in crafting HOTS questions to achieve higher educational goals.

Methodology

This study employs a descriptive qualitative approach with content analysis techniques to explore the dimensions of Higher Order Thinking Skills (HOTS) in Javanese language school exam items. The data used in this research comprises 50 school exam questions from SMA 12 Semarang. The aim of this study is to identify and categorize the exam items based on HOTS dimensions according to Anderson's Bloom Taxonomy. The analysis procedure begins with collecting the exam questions to be analyzed. Each exam item is then classified according to HOTS indicators, which consist of three main levels in Anderson's Bloom Taxonomy: C4 (analyzing), C5 (evaluating), and C6 (creating).

Data analysis is conducted by identifying each exam item according to the established HOTS criteria. The researcher then compiles the frequency and percentage of each HOTS level appearing in the exam questions. The results of this analysis are expected to provide an overview of the extent to which the Javanese language exam questions at SMA 12 Semarang measure students' higher-order thinking skills.

Finding and Discussion

Based on the analysis of the data used in this study, namely the school exam questions for the Javanese language subject for Grade XII at SMA 12 Semarang for the 2023/2024 academic year, the exam questions contain dimensions of Higher Order Thinking Skills (HOTS). The focus of the research is to assess the HOTS dimensions in these exam questions, which include the cognitive levels of C4 (analyzing), C5 (evaluating), and C6 (creating). However, the results of the study indicate that out of the 50 multiple-choice questions, none fall into the cognitive indicators of C5 (evaluating) and C6 (creating). All questions meeting the HOTS criteria are at the C4 (analyzing) level. This shows that although there are efforts to include HOTS questions, most are still at the analysis level.

Within the C4 level, the questions are further analyzed based on the sub-dimensions: C4.1 (differentiation), C4.2 (organization), and C4.3 (attribution). The study results show that out of 50 questions, 12 questions fall into the C4.1 (differentiation) sub-dimension, 4 questions into the C4.2 (organization) sub-dimension, and 13 questions into the C4.3 (attribution) sub-dimension. The distribution of questions based on these sub-dimensions provides an overview of the level of analysis skills measured by these questions. The following table presents the distribution of questions based on the C4 (analyzing) sub-dimension:

Table 1.1 Distribution of HOTS Data in Javanese Language School Exam Questions at SMA 12 Semarang.

Sub-Dimension	Number of Questions	Question Numbers
C4.1 (Differentiation)	12	4, 17, 23, 26, 28, 29, 32, 34, 35, 36, 43, 44
C4.2 (Organization)	4	6, 21, 24, 45
C4.3 (Attribution)	13	2, 3, 5, 8, 11, 12, 13, 19, 31, 37, 38, 39, 47

Based on table 1.1, the C4.1 (Differentiation) sub-dimension shows that there are 12 questions scattered across numbers 4, 17, 23, 26, 28, 29, 32, 34, 35, 36, 43, and 44. These questions emphasize students' ability to differentiate, identify, and categorize the given information. Differentiation is an initial step in analysis skills crucial for building a deeper understanding.

The C4.2 (Organization) sub-dimension includes 4 questions scattered across numbers 6, 21, 24, and 45. These questions emphasize students' ability to organize the given information, including arranging, grouping, and connecting relevant concepts or ideas. Organizing information is an important step in analysis that helps students understand the structure and relationships between various parts of the information.

The C4.3 (Attribution) sub-dimension shows there are 13 questions scattered across numbers 2, 3, 5, 8, 11, 12, 13, 19, 31, 37, 38, 39, and 47. These questions emphasize students' ability to relate or attribute information, determining cause-and-effect, purpose, or function of a piece of information or event. Attribution is a higher-level analysis skill that helps students

understand the meaning and implications of the given information.

Another finding indicates that no questions fall into the C5 (evaluating) and C6 (creating) categories. This shows that the questions used in the Javanese language exam at SMA 12 Semarang have not reached the higher cognitive levels necessary for evaluating and creating. Questions at the C5 and C6 levels are essential for measuring students' ability to critically evaluate information and create something new based on their knowledge. Besides HOTS questions, many questions fall into the LOTS (Low Order Thinking Skills) category. These questions only test basic abilities such as recalling, understanding, and applying learned information. This indicates that most exam questions have not fully adopted the HOTS approach.

The importance of HOTS distribution in exam question creation is crucial. Questions with C4, C5, and C6 cognitive levels serve as indicators of students' cognitive achievement. These questions are designed to challenge students to think deeper and more critically, which is essential in developing higher-order thinking skills. Therefore, question creation should encompass various HOTS levels to ensure that students' cognitive abilities are comprehensively measured.

Despite teachers at SMA 12 Semarang providing guidelines related to the questions presented in the exam, the analysis results show that the questions created still predominantly fall within the C4 level. This may be due to a lack of understanding or training regarding the creation of HOTS questions at the C5 and C6 levels, and perhaps because almost all students' cognitive levels in daily learning have not yet reached the C5 and C6 cognitive levels.

Conclusions

This study evaluates the dimensions of Higher Order Thinking Skills (HOTS) in the Javanese language exam questions for Grade XII at SMA 12 Semarang for the 2023/2024 academic year. The focus of the research is to assess the extent to which these questions cover the cognitive levels of HOTS, namely C4 (analyzing), C5 (evaluating), and C6 (creating). The results of the study indicate that out of the 50 multiple-choice questions analyzed, none meet the criteria for the C5 (evaluating) and C6 (creating) levels. All questions that meet the HOTS criteria are at the C4 (analyzing) level. This reflects that although there are efforts to include HOTS questions, their level is still limited to analysis skills.

The finding that no questions reach the C5 and C6 levels indicates that the exam has not fully adopted a comprehensive HOTS approach. Questions at the C5 and C6 levels are crucial for measuring students' ability to critically evaluate information and create something new based on their knowledge. The importance of HOTS distribution in exam question creation cannot be overlooked. Questions with C4, C5, and C6 cognitive levels are designed to challenge students to think more deeply and critically, which is essential in developing higher-order thinking skills. Therefore, question creation should encompass various HOTS levels to ensure that students' cognitive abilities are comprehensively measured.

This study is expected to contribute to efforts to improve the quality of exams and develop students' critical and creative thinking skills. More efforts are needed to construct questions that encompass all levels of HOTS.

References

Adventyana, B. D., Nur, E., Asdiniah, A., Afriliani, M., & Fadia, S. (2024). *Dampak Kebijakan Perubahan Kurikulum Merdeka di Sekolah Dasar Bagi Guru dan Peserta Didik*. *06*(02), 11818–11826.

E-issn, V. N. P., Ledia, S., Mauli, B., & Bustam, R. (2024). *Reslaj : Religion Education Social Laa Roiba Journal Implementasi Kurikulum Merdeka Dalam Meningkatkan Mutu Pendidikan Reslaj : Religion Education Social Laa Roiba Journal*. *6*(1), 790–806. https://doi.org/10.47476/reslaj.v6i1.2708

Mulia, J. R., Nasution, B., & Sari, M. (2023). *Peranan Kurikulum Dalam Mencapai Tujuan Pendidikan*. *9*(2), 34–40.

Pendidikan, D., Studi, P., Fisika, P., Madiun, U. P., Masa, C., Berliana, D., Kumara, R., Tantri, B., & Purwandari, M. (2023). *Makalah Pendamping ISSN : 2830-4535 Pengembangan Instrumen Soal Tes Hasil Belajar Berorientasi HOTS Pada Materi Usaha dan Energi*. 1–8.

Nugraha, B. (2017). Proyek Pembelajaran dalam Kurikulum Merdeka: Implikasi terhadap Keterampilan Hidup. *Jurnal Inovasi Pendidikan*, 15(2), 87-98.

Sutrisno, E. (2020). Pengaruh Kurikulum Merdeka terhadap Kemampuan Adaptif Siswa. *Jurnal Pendidikan Progresif*, 30(1), 45-58.

Yulianti, D. (2020). Peran Evaluasi Butir Soal HOTS dalam Meningkatkan Kualitas Pembelajaran. *Jurnal Inovasi Pendidikan*, 27(3), 89-101.

Susanto, D. (2020). Pengembangan Soal HOTS Berbasis Kurikulum untuk Meningkatkan Kualitas Pendidikan. *Jurnal Inovasi Kurikulum*, 23(2), 102-115.

Kurniawan, B. (2020). Penyusunan Soal Berbasis HOTS untuk Mata Pelajaran Bahasa Indonesia di Kelas IV. *Jurnal Ilmu Pendidikan, 11, 110-117*.

Apriyani, E. (2023). Analisis Dimensi Kognitif Taksonomi Anderson dalam Soal Penilaian Akhir Semester. *AKSARA: Jurnal Ilmu Pendidikan Nonformal, Vol. 9 No. 3, September 2023*.

Arifin, Z. (2019). Analisis Higher Order Thinking Skill (HOTS) Siswa Madrasah Ibtidaiyah. *Elementary, Vol. 8 No. 2, Juli - Desember 2020*.