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A COMPARATIVE ANALYSIS OF BLOOM'S TAXONOMY IN LEARNING OUTCOMES OF 10TH-GRADE MERDEKA CURRICULUM MODULES IN YOGYAKARTA AND WEST KALIMANTAN

Gabriela Apriani Koli, Prisca Eirene Pricillia, Melvina Risky Gabriella, Caku, Concilianus Laos Mbato
Sanata Dharma University
gabrielabellaa10@gmail.com, pricilliaprisca@gmail.com, melvinarisky17@gmail.com, chencaku3@gmail.com, cons@usd.ac.id

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Abstract: The Merdeka Curriculum gives schools and teachers greater autonomy to design learning objectives, and such variations may impact cognitive orientation. Therefore, this study aims to analyze the distribution of Lower-Order Thinking Skills (LOTS) and Higher-Order Thinking Skills (HOTS). This study employs a descriptive approach with a comparative qualitative design. The analysis focused on the learning outcomes of two modules developed by two teachers from two different regions. The Revised Bloom's Taxonomy was used in this study to classify the learning outcomes into cognitive levels, which were then further grouped into LOTS and HOTS. This study shows that the learning outcomes in both modules cover all levels of Bloom's Taxonomy and are generally aligned with curriculum objectives. However, the two modules have different cognitive level orientations. The module in Yogyakarta places greater emphasis on HOTS (56%) and LOTS (44%), while the module in Sintang, West Kalimantan places greater emphasis on LOTS (54.5%) and HOTS (45.5%). These findings, which indicate that the learning orientations of the two modules may differ, underscore the need for more balanced and contextual guidelines to support the consistent integration of HOTS across various regions.

Keywords**:** Bloom's Taxonomy; HOTS; LOTS; Learning Outcomes; Merdeka Curriculum; Qualitative Analysis

INTRODUCTION

The implementation of the Merdeka Curriculum is one of the key reforms in Indonesia's education system, focusing on flexibility, school autonomy, and student-centered learning. Introduced by the Ministry of Education, Culture, Research, and Technology in 2021, this curriculum grants teachers and schools the freedom to develop learning strategies, instructional materials, and assessment methods tailored to students' needs and local contexts (Herliani et al., 2023). Additionally, the curriculum is designed to meet the demands of 21st-century competencies, including critical thinking, creativity, communication, collaboration, and language skills (Kurniawan, 2024; Apryanto et al., 2023).

In English language learning, this policy stipulates that learning outcomes must be formulated in the teaching modules used; for example, 10th-grade students must study a variety of narrative, descriptive, procedural, recount, and report texts. Learning outcomes play a crucial role in ensuring alignment between curriculum objectives, learning activities, and assessment. In line with the concept of constructive alignment

proposed by Biggs and Tang (2003), learning outcomes determine the level of cognitive engagement expected from students. Thus, the Merdeka Curriculum places learning outcomes as the primary reference in designing competency-based and student-centered learning.

However, the decentralized nature of the implementation of the Merdeka Curriculum allows schools and local governments to develop their own teaching modules. This situation makes it highly likely that there will be differences in the interpretation and formulation of learning outcomes across regions. Furthermore, the implementation of this curriculum also faces various challenges, such as inadequate facilities and infrastructure, as well as variations in teachers' readiness and competence in applying the intended learning approaches (Saiman et al., 2025). These differences may lead to inconsistencies in the cognitive orientation of learning outcomes, particularly regarding the balance between LOTS and HOTS.

To analyze the cognitive demands in learning outcomes, this study uses Bloom's Taxonomy as revised by Anderson and Krathwohl (2001). Cognitive processes are classified into six levels. Generally, these levels are categorized into LOTS and HOTS. It is crucial to integrate HOTS into educational learning outcomes. This is because HOTS contributes to the development of an individual's ability to think critically, solve problems, and engage in lifelong learning within the context of English language learning (Putri and Sulistyaningrum, 2021). In 21st-century learning, HOTS encourages students to creatively generate various ideas, responses, and solutions.

Empirically, various studies in Indonesia have shown that despite curriculum reforms aimed at strengthening HOTS, much of the learning material and assessment tasks for English-speaking students still focus on LOTS (Bajo et al., 2025). Furthermore, other studies also highlight the persistent imbalance between LOTS and HOTS, though the extent varies across different educational levels (Bajo, 2025; Nabila & Rochsantiningsih, 2025; Fakhrillah & Suharyadi, 2025). However, most of these studies primarily focus on issues related to textbooks, assignments, and teachers' instructional practices. There is not yet much literature that examines learning outcomes as the primary curriculum document. More recent studies have indeed begun to examine the integration of HOTS in the Merdeka Curriculum, but they remain limited to analyses of textbooks and teaching practices.

In line with this, several previous studies have tended to focus on the aspects of literature, tests, and assessment practices (Nabila & Rochsantiningsih; Fakhrillah & Suharyadi). For example, Rahim et al. (2025) analyzed the representation of HOTS in textbooks aligned with the 2013 Curriculum and the Merdeka Curriculum, while Faradella et al. (2024) examined teachers' strategies and challenges in implementing HOTS-based activities. However, there are still some limitations in research that specifically examines learning outcomes in learning modules, particularly regarding the integration of HOTS and LOTS

Based on this gap, this study aims to analyze the representation of higher-order thinking skills (HOTS) and lower-order thinking skills (LOTS) in the English learning outcomes for 10th-grade students under the Merdeka Curriculum in two different regions, Yogyakarta and West Kalimantan. This study was conducted through comparative qualitative analysis using the revised Bloom's Taxonomy. Through this analysis, the study seeks to uncover whether regional context influences the cognitive orientation of English learning outcomes. Thus, the results of this study are expected to provide empirical contributions to curriculum evaluation, particularly in strengthening the implementation of HOTS learning, as well as serve as a reference for education practitioners, curriculum developers, and policymakers.

METHOD

In this study, qualitative methods with content analysis were used to determine the level of cognitive demands, especially Higher-Order Thinking Skills, in the formulation of English learning outcomes for 10th grade students. This analysis was conducted on specific operational verbs in the formulation of English learning outcomes. Bloom's Taxonomy Revised by Anderson and Krathwohl (2001) was used to classify activity levels. This taxonomy divides thinking process levels into six categories, namely Remember, Understand, Apply, Analyze, Evaluate, and then grouped into LOTS and HOTS.

The main data used in this study were two 10th grade English modules developed based on the Merdeka Curriculum. These modules were created by English teachers. Module A came from a private high school in Yogyakarta. Module B was taken from a module used by a public high school in Sintang, West Kalimantan. The materials focused

on were narrative, descriptive, procedural, recount, and report texts. The researcher recorded the learning outcomes from the modules used by the teachers.

Data was collected by identifying all learning outcomes in both modules as the main source of data. To increase credibility, the researcher also conducted brief clarification interviews (10-20 minutes via WhatsApp call) with the teachers who wrote the modules to ensure that the formulation of learning outcomes was relevant to classroom learning practices and to understand the teachers' views on LOTS and HOTS. The interview data was used only for validation purposes, not as the main analysis data. The data was analyzed by coding each learning outcome (A1, A2, B1, B2, and so on), then classifying them into cognitive levels based on Bloom's Revised Taxonomy. Next, the learning outcomes were classified into LOTS and HOTS, and their frequency was calculated for distribution and comparison between modules. The research findings were then interpreted in accordance with the objectives of the Independent Curriculum and the strengthening of 21st-century skills.

FINDING AND DISCUSSION

This section reports the results of content analysis of the learning outcomes of two 10th grade English modules developed based on the Merdeka Curriculum. The learning outcomes are grouped into Bloom's Taxonomy, modified by Anderson and Krathwohl to show cognitive abilities, and the distribution of LOTS and HOTS. The findings are discussed to examine the extent to which the modules reflect the curriculum's emphasis on higher-order thinking skills and 21st-century competencies.

Findings

In this study, researcher analyzed the cognitive orientation of learning outcomes from two 10th grade English modules developed based on the Merdeka Curriculum: Module A from a private high school in Yogyakarta and Module B from a public high school in Sintang, West Kalimantan. Anderson and Krathwohl's revised Bloom's taxonomy was used to classify learning outcomes into six cognitive levels and further divided into higher-order thinking skills and lower-order thinking skills. Table 1 shows the distribution of learning outcomes across all Bloom's cognitive levels in both modules.

Table 1. Bloom's Cognitive Levels in Yogyakarta and Kalimantan Modules

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Cognitive Level	Category	Yogyakarta (f)	Kalimantan (f)
Remember	LOTS	1	2
Understand	LOTS	1	8
Apply	LOTS	5	2
Analyze	HOTS	5	3
Evaluate	HOTS	0	1
Create	HOTS	4	6
Total		**16**	**22**

From the results of this study, it appears that both modules cover all six cognitive levels according to Bloom's Revised Taxonomy and thus reflect their suitability for the objectives of the Merdeka Curriculum in the formation of comprehensive cognition. However, the distribution among the cognitive levels in the two modules is very different.

As seen above, the Yogyakarta module has a clear emphasis on higher-order cognitive processes, particularly at the Analyzing and Creating levels. Many of the learning targets in this module are related to students' ability to analyze text structure, synthesize information, and then produce original texts or performances. On the other hand, the Kalimantan module shows a relatively higher concentration on learning outcomes at the Understanding and Remembering levels. This clearly points to a concentration on comprehension, text identification, and basic language knowledge.

To clarify the general cognitive orientation of each module, learning outcomes are further grouped into LOTS (Remembering–Applying) and HOTS (Analyzing–Creating), as shown in Table 2.

Table 2. Frequency of LOTS and HOTS in Both Modules

Cognitive Category	Yogyakarta (%)	Kalimantan (%)
LOTS	44%	54.5%
HOTS	56%	45.5%

The results show that the Yogyakarta module allocates a larger proportion of learning outcomes to HOTS (56%), while the Kalimantan module places more emphasis on LOTS (54.5%). This difference indicates different instructional orientations and reflects how teachers in different regions interpret and implement the Merdeka Curriculum.

Discussion

Stronger HOTS Orientation in the Yogyakarta Module

Findings indicate that the Yogyakarta module places a stronger emphasis on higher-order thinking skills (HOTS), with more than half of its learning outcomes targeting analysis and creation. This reflects pedagogical efforts that are deliberately aimed at engaging students in critical analysis, synthesis of ideas, and creative language production. Learning activities include text structure analysis, original text writing, and performance-based output production such as announcements, news outlines, or procedural demonstrations using real objects. These tasks go beyond basic comprehension and require interpretation, evaluation, and creative decision-making. This instructional orientation is in line with the Merdeka Curriculum's emphasis on student-centered learning, creativity, and 21st-century competencies (Apryanto et al., 2023; Kurniawan, 2024).

Teacher interview data supports this interpretation. As teachers in Yogyakarta explained that students had learned with various types of texts at the junior high school level, the compilation of learning outcomes appeared to be based on the creation of perceptions designed for students' intellectuals. In this context, Biggs and Tang's idea that learning outcomes should reflect the cognitive level of the intended demands and should correspond to demanding learning activities and assessments can be seen.

Additional contextual factors help explain such an approach. Yogyakarta is a place rich in education, providing greater access to professional development programs, curriculum workshops, and collaborative teacher networks. The private school environment provides greater instructional flexibility, smaller class sizes, and better access to technological resources. These circumstances support teachers' and school policies' efforts to introduce and implement larger project-based tasks and assignments that can encourage higher-level thinking.

In conclusion, the Yogyakarta module demonstrates a fairly active and responsive approach to translating the ideas of the Merdeka Curriculum. The principles of the curriculum itself are not simply transferred or rewritten, but are thoroughly processed in such a way that the results truly encourage students to think more analytically and creatively. Thus, students are not only guided to reorient themselves in understanding the material, but are also oriented to use language that is more analytical, critical, and communicative in context.

Emphasis on LOTS in the Kalimantan Module

Unlike the Yogyakarta module, the Kalimantan module tends to be smaller in terms of LOTS. More than half of the learning outcomes are related to remembering, understanding, and applying, with understanding being the most common. This learning orientation means that there is more focus on recognizing objectives, text structure, finding explicit information, and basic vocabulary and grammar skills.

From the discussion that resulted from the interview, the teacher stated that this decision was made considering the readiness of students who still had difficulties in reading and understanding language structure. Therefore, the learning outcomes were designed to strengthen basic skills before introducing more complex tasks. This method supports the principle of scaffolding, which is to control students' needs for basic learning if they want to help students develop higher cognitive tasks.

The emphasis on LOTS in the module can be said to be an adjustment to the school context and student characteristics in Sintang. However, through interviews, teachers explicitly focused on LOTS by prioritizing vocabulary, grammar, and basic comprehension before developing higher-order thinking skills. Therefore, this orientation reflects a realistic, gradual, and contextual pedagogical strategy, rather than a shortcoming in the module design.

Differences in Curriculum Interpretation Between Regions

Differences in cognitive orientation between modules do indicate that autonomy in the Merdeka Curriculum does lead to variations in implementation. Although the final objectives and competencies are set at the national level, the formulation of learning outcomes remains in the hands of teachers in each school. This autonomy allows for adjustments to student needs, but also creates the potential for differences in cognitive emphasis between contexts. In conclusion, teachers' pedagogical understanding and considerations are key factors. Teachers in Yogyakarta seem to be more aware that HOTS-focused learning must be incorporated into learning outcomes, while teachers in Sintang emphasize HOTS learning only after basic skills have been mastered.

Furthermore, learning environment support is certainly also a major factor. Schools with access to training, technology, and professional networks are more likely to develop HOTS in learning, while other contexts focus more on strengthening foundations to keep learning realistic and effective.

Implications for Policy and Practice

The findings of this study indicate that the implementation of the Merdeka Curriculum still requires more equitable support so that the quality of cognitive demands does not vary too much between contexts. Although school autonomy provides opportunities for adjustments according to local needs, without more concrete guidance and ongoing mentoring, this variation has the potential to create gaps in the development of HOTS. Therefore, policymakers are encouraged to provide examples of learning outcome formulations that cover all levels of Bloom's taxonomy and to enhance collaboration among teachers through MGMP forums. These will be presented as learning communities where best practices can be shared and joint reflection can take place.

At the classroom level, the development of thinking skills should be understood as a gradual transition from LOTS to HOTS. In an environment where specific competencies are lacking, a basic understanding of abilities is still necessary, but this division should be intended as preparation for more advanced tasks such as analytical and creative ones. Often, in this case, teacher training programs not only demonstrate the importance of HOTS, but also propose pedagogical strategies that are practical, contextual, and realistic to implement gradually. Therefore, in this case, the success of Merdeka Curriculum is not only a matter of autonomy, but also of system support, which supports the quality of learning at all levels of education.

CONCLUSION

In this case, using Bloom's Revised Taxonomy as an analytical framework, this study analyzes the distribution of LOTS and HOTS in the learning outcomes of two 10th grade modules, namely a module in a private school in Yogyakarta and a module in a public school in Sintang, West Kalimantan. The results above identify that both modules cover all cognitive levels. In this case, this reflects the spirit of the independent curriculum. However, there are striking differences in their proportions. The module developed in Yogyakarta emphasizes HOTS: 56%, particularly in the aspects of analysis, evaluation, and creation. In contrast, the Sintang module emphasizes LOTS: 54.5%, with an emphasis on basic understanding and structural mastery of language, although HOTS elements are still present.

However, these differences also show that the implementation of HOTS in the Merdeka Curriculum still depends on the context of the school and the considerations of the teachers who apply it. Therefore, support for teachers and clearer guidelines are

needed so that the development of critical thinking skills can be more consistent, without forgetting the needs and readiness of students. In this case, autonomy in Merdeka Belajar can also be seen as a strength. With good guidance, autonomy facilitates learning that refers to context while still emphasizing quality in terms of cognitive demands.

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