



Content-Based Instruction and Student Competency Development in Indonesia's Kurikulum Merdeka: A Literature Review

Aulia Rahmatika Nur Azizah^{1*}, Shofiatuz Zakiyah²

^{1,2}Universitas Islam Cordoba Banyuwangi, Indonesia
Email: aulia@uicordoba.ac.id¹, 2401410015@student.ac.id²

*Corresponding Author:
aulia@uicordoba.ac.id

Abstrak

Penelitian ini mengkaji potensi *Content-Based Instruction* (CBI) dalam mendukung pengembangan kompetensi peserta didik dalam kerangka Kurikulum Merdeka di Indonesia. Dengan menggunakan pendekatan kajian pustaka kualitatif, sebanyak 15 artikel ilmiah bereputasi yang dipublikasikan antara tahun 2020 hingga 2024 dipilih secara sistematis dan dianalisis melalui analisis tematik. Hasil penelitian menunjukkan bahwa CBI berkontribusi pada empat aspek utama, yaitu peningkatan kemahiran bahasa akademik, penguatan keterampilan berpikir tingkat tinggi, pengembangan kemandirian belajar peserta didik, serta peningkatan motivasi belajar. Namun demikian, tantangan terkait kesiapan guru dan keterbatasan sumber daya pembelajaran masih menjadi hambatan signifikan dalam implementasinya. Penelitian ini memberikan kontribusi terhadap literatur yang ada dengan memperjelas keselarasan antara prinsip-prinsip CBI dan orientasi berbasis kompetensi dalam Kurikulum Merdeka, serta menyoroti pertimbangan penting bagi perancangan kurikulum dan pengembangan profesional guru dalam konteks Indonesia. Temuan ini memberikan implikasi bagi para perancang kurikulum dan program pelatihan guru dalam pelaksanaan Kurikulum Merdeka.

Kata Kunci: *pembelajaran berbasis konten; kurikulum merdeka; pengembangan kompetensi peserta didik*

Abstract

This study examines the potential of Content-Based Instruction (CBI) in supporting student competency development within the framework of Indonesia's Kurikulum Merdeka. Using a qualitative literature review approach, 15 peer-reviewed studies published between 2020 and 2024 were systematically selected and analyzed through thematic analysis. The findings indicate that CBI contributes to four main areas: improvement of academic language proficiency, enhancement of higher-order thinking skills, promotion of student autonomy, and increased learning motivation. However, challenges related to teacher preparedness and limited instructional resources remain significant barriers to effective implementation. This study contributes to the existing literature by clarifying the alignment between CBI principles and the competency-based orientation of Kurikulum Merdeka and by highlighting key considerations for curriculum design and teacher professional development in the Indonesian context. These findings offer implications for curriculum designers and teacher training programs under Kurikulum Merdeka.

Keywords: *content-based instruction; kurikulum merdeka; student competency development*

INTRODUCTION

Indonesia's educational system has undergone a significant transformation with the implementation of Kurikulum Merdeka in 2021. This curriculum represents a shift from rigid, teacher-centered instruction toward a more flexible and student-centered approach that emphasizes learner autonomy, personalized learning, and competency development rather than mere knowledge accumulation. It is designed to prepare students for 21st-century challenges that require adaptability, critical thinking, and practical skills.

In this context, language education plays a strategic role. Language functions not only as a medium of communication but also as a tool for cognitive development and knowledge construction. Mastery of language enables students to engage with academic content, articulate ideas, and develop analytical capacities necessary for complex problem-solving. Therefore, effective language teaching methodologies are essential for achieving the broader objectives of Kurikulum Merdeka.

One pedagogical approach that has gained increasing attention is Content-Based Instruction (CBI). CBI integrates language learning with subject content such as science, history, or mathematics, allowing students to acquire language skills through meaningful academic contexts. Unlike traditional language instruction that isolates linguistic forms from use, CBI situates language learning within authentic content, thereby enhancing relevance, engagement, and applicability. This integration has been shown to promote not only language proficiency but also higher-order cognitive skills, including critical thinking, collaboration, and problem solving.

The principles of CBI closely align with the orientation of Kurikulum Merdeka, which emphasizes interdisciplinary learning, flexibility, and the development of both academic and life competencies. Within a competency-based framework, language learning is not merely an instructional objective but a strategic medium through which students develop critical, analytical, and communicative competencies required for academic and professional contexts.

However, despite this theoretical alignment, the implementation of CBI in Indonesian educational settings remains insufficiently explored at the curricular level. Existing studies on CBI tend to focus on classroom practices or language outcomes in isolation, offering limited insight into its relevance for national curriculum reform.

Despite the growing body of research on Content-Based Instruction and the recent implementation of Kurikulum Merdeka, existing studies remain fragmented and largely concentrate on classroom-level outcomes or language proficiency alone. Few studies have systematically examined how CBI aligns with the competency-based framework promoted by Kurikulum Merdeka, particularly from a curriculum and policy perspective. Moreover, prior research rarely synthesizes findings across educational levels to identify consistent patterns of student competency development relevant to Indonesia's ongoing educational reform. Therefore, a comprehensive literature-based analysis is needed to clarify the potential role of CBI in supporting student competency development within the context of Kurikulum Merdeka.

This study aims to address this gap by synthesizing recent empirical findings on CBI and conceptualizing its role in supporting competency-based education at the curricular level in Indonesia. Accordingly, this study is guided by the following research question: By

employing a literature-based approach, this study examines the principles of CBI, analyzes its potential contribution to competency development, and proposes considerations for its integration into Kurikulum Merdeka.

Content-Based Instruction (CBI) is an approach to teaching where language skills are taught through subject matter content, often in a language other than the students' native tongue. This approach differs from traditional language teaching, where language is often taught in isolation. According to Snow (2019), CBI merges the learning of language and content, which enhances both the linguistic and cognitive development of students. The primary goal of CBI is to use real-world subject content—such as history, science, or mathematics—as a context in which students acquire language skills, thus making language learning more meaningful and applicable to students' broader educational goals.

CBI has been found to engage students more deeply, as it allows them to interact with real-world material and ideas, thereby increasing motivation and engagement. This approach not only promotes language acquisition but also supports the development of academic competencies that are aligned with modern education's emphasis on critical thinking, problem-solving, and interdisciplinary learning (Beckett & Slater, 2021).

Integration of Language and Content: CBI integrates language learning with the study of academic content, creating a dual focus that fosters both language proficiency and subject-matter expertise. **Student-Centered Learning:** CBI encourages active learning, where students take an active role in their education, making decisions about what they learn and how they learn it. **Contextualized Learning:** Content-based instruction uses real-world contexts to teach language, ensuring that students' learning is practical and relevant. **Cognitive Development:** CBI fosters higher-order cognitive skills such as analysis, synthesis, and evaluation, which are crucial for competency development (Genesee & Upshur, 2020). These principles are particularly relevant in the context of Kurikulum Merdeka, which seeks to promote student autonomy, critical thinking, and interdisciplinary learning.

Kurikulum Merdeka was introduced to address the limitations of previous curriculum models in Indonesia. The traditional curriculum, focused on rote memorization and standardized testing, did not adequately prepare students for real-world challenges. In contrast, Kurikulum Merdeka emphasizes personalized learning, student autonomy, and the development of competencies rather than just knowledge acquisition (Zulkarnain, 2022).

The curriculum focuses on building competencies that students can apply in their daily lives and future careers, including critical thinking, problem-solving, collaboration, and communication. It allows for greater flexibility in terms of content delivery, encouraging teachers to adapt their methods to the needs and interests of students. This personalized approach empowers students to take ownership of their learning, fostering intrinsic motivation and a deeper understanding of the material. The integration of CBI into Kurikulum Merdeka can help realize these goals by providing students with opportunities to learn language through meaningful content that is relevant to their lives and future careers.

The alignment between CBI and Kurikulum Merdeka is evident in the shared emphasis on student-centered learning, critical thinking, and interdisciplinary education. As Kurikulum

Merdeka focuses on competency-based education, CBI offers a suitable framework to support the development of both linguistic and academic competencies. By teaching language through content, students not only gain proficiency in a foreign language but also enhance their understanding of academic concepts, fostering an integrated approach to learning.

Research has shown that CBI can significantly improve students' cognitive skills. A study by Lee and Lee (2021) found that students who learned through CBI showed improvements not only in language proficiency but also in their ability to apply critical thinking skills to complex problems. This aligns with the goals of Kurikulum Merdeka, which aims to equip students with the skills necessary to solve real-world problems.

Content-Based Instruction (CBI) has gained considerable attention in educational research due to its effectiveness in integrating language learning with content mastery. Numerous studies published after 2020 have examined its implementation across secondary, vocational, and higher education contexts, highlighting its contribution to language acquisition, cognitive development, learner autonomy, and academic engagement.

Several studies emphasize the role of CBI in improving academic language proficiency and content comprehension. Beckett and Slater (2021) reported that secondary school students exposed to CBI demonstrated stronger language skills and deeper understanding of subject matter such as history and geography. Similarly, Zhang (2022) found that university students in science and technology programs showed significant improvement in technical writing and academic vocabulary when language learning was embedded within disciplinary content. Comparable results were reported by Lee and Lee (2021) in middle school settings, where the integration of social studies and mathematics with language instruction enhanced both linguistic accuracy and interdisciplinary understanding.

In the Indonesian context, Syamsudin (2021) confirmed that CBI improved students' mastery of scientific concepts and technical vocabulary, enabling more effective engagement with academic texts.

Recent studies further reinforce these findings. Fikni (2024) demonstrated that CBI significantly enhanced reading comprehension and classroom engagement among secondary school students, while Sulistiono et al. (2024) found that maritime education students achieved higher levels of professional English proficiency and confidence when CBI was applied to subject-specific instruction. These results indicate that CBI is particularly effective in bridging academic language use and domain-specific knowledge, a core objective of competency-based curricula.

Beyond language outcomes, research consistently links CBI with the development of higher-order cognitive skills. O'Malley and Valdez Pierce (2020) observed that students in CBI classrooms displayed stronger problem-solving abilities and analytical reasoning through collaborative content-based tasks. Coyle's (2021) study on CLIL, a closely related model to CBI, further showed that learners developed superior critical thinking and interdisciplinary transfer skills. More recently, Zhang and Tang (2024) reported that CBI-based English reading instruction at the tertiary level significantly strengthened students' critical thinking capacity and academic reasoning, indicating that content-centered language instruction supports cognitive competencies essential for 21st-century learning.

Another prominent theme concerns learner autonomy, motivation, and engagement. Evans (2021) found that EFL students taught through subject-based content demonstrated greater engagement and sustained motivation than those in traditional language classes. Sulistiono et al. (2024) similarly reported increased learner confidence and willingness to use English in professional contexts. Qualitative evidence from Maming et al. (2024) also shows that both teachers and students perceive CBI tasks as promoting active participation, collaboration, and responsibility for learning, which are central attributes of student autonomy in competency-based education. The literature also highlights the contribution of technology integration in strengthening CBI implementation. Xu and Zhang (2022) demonstrated that digital platforms and multimedia resources significantly enhanced interaction, comprehension, and collaborative learning in higher education CBI settings, suggesting that technological support can expand access to authentic content and facilitate flexible learning environments aligned with contemporary curriculum demands.

Despite its documented benefits, many studies report persistent challenges in implementation. Chia (2021) emphasized difficulties related to teacher readiness in multilingual classrooms, while Zulkarnain (2022) identified limitations in curriculum alignment and instructional resources in vocational education contexts. Dzulkurnain et al. (2024), in their synthesis of CLIL research, similarly concluded that although integrated language-content instruction improves proficiency and critical thinking, successful implementation requires strong institutional support, systematic curriculum planning, and sustained professional development for teachers. Overall, the reviewed studies consistently demonstrate that CBI contributes to four major domains of competency development: (1) academic language proficiency, (2) higher-order cognitive skills, (3) learner autonomy and collaborative competence, and (4) motivation and engagement. However, most existing research remains concentrated on classroom-level practices and short-term instructional outcomes. Only limited attention has been given to how CBI can be systematically aligned with national curriculum frameworks or competency standards.

Despite these positive findings, several methodological limitations are evident in existing studies. Most research relies on short-term classroom interventions with relatively small sample sizes, which limits the generalizability of outcomes to broader educational systems. In addition, few studies explicitly examine longitudinal competency development or assess how CBI outcomes are measured against formal curriculum standards. This indicates that while instructional effectiveness is well documented, evidence regarding sustainable and large-scale curricular integration remains limited. In the context of Indonesia, research on CBI remains fragmented and primarily pedagogical in orientation, offering minimal discussion on its integration into large-scale curriculum reform such as Kurikulum Merdeka. This indicates a clear need for curriculum-level analysis that connects empirical classroom findings with the structural goals of competency-based education. Consequently, the present study positions itself as a synthesis of recent empirical evidence aimed at conceptualizing how CBI can function as a strategic pedagogical approach within Indonesia's ongoing curriculum transformation. This gap is particularly critical given that Kurikulum Merdeka emphasizes measurable competency standards and curriculum coherence across educational levels.

METHOD

Research Design

This study employed a qualitative literature review design to examine how Content-Based Instruction (CBI) aligns with and supports student competency development within the framework of Indonesia's Kurikulum Merdeka. A literature review approach was selected to enable systematic synthesis of recent empirical findings and to identify conceptual patterns relevant to curriculum-level implementation.

Data Sources and Search Strategy

The literature was collected from reputable academic databases, including Google Scholar, JSTOR, and the Directory of Open Access Journals (DOAJ). The selected sources consisted of national and international peer-reviewed journals to ensure academic credibility and relevance. The search was conducted using combinations of the following keywords: "Content-Based Instruction," "CBI in education," "student competency development," "competency-based education," and "Kurikulum Merdeka." To ensure relevance and recency, the search was limited to publications from 2020 to 2024.

The selection of articles was guided by the following inclusion criteria: Peer-reviewed journal articles or academic book chapters. Published between 2020 and 2024. Focused on the implementation or outcomes of Content-Based Instruction. Discussed language learning in relation to academic content or competency development. Relevant to formal education contexts (primary, secondary, or higher education).

Articles were excluded if they: Focused solely on theoretical linguistics without pedagogical application. Discussed instructional models unrelated to CBI. Were not available in full text.

The initial database search identified 42 publications. After screening titles and abstracts, 26 articles were retained for further review. A full-text evaluation was then conducted based on the inclusion criteria, resulting in 15 articles selected for final analysis.

The selected studies were analyzed using thematic analysis. This process involved: Repeated reading of each article to ensure familiarity with the content. Coding key findings related to language outcomes, cognitive development, student autonomy, and learning motivation. Grouping similar codes into broader thematic categories. Interpreting the themes in relation to the competency-based orientation of Kurikulum Merdeka.

The analysis focused on identifying recurring patterns, challenges, and implications of CBI implementation relevant to student competency development and curriculum integration.

RESULTS AND DISCUSSION

This study analyzed 15 selected articles published between 2020 and 2024 to identify patterns regarding the contribution of Content-Based Instruction (CBI) to student competency development within competency-oriented educational contexts. The thematic analysis revealed four dominant domains: (1) academic language proficiency, (2) higher-order cognitive skills, (3) learner autonomy and motivation, and (4) challenges in implementation.

Across educational levels, CBI was consistently found to enhance students' academic language proficiency while simultaneously strengthening subject-matter comprehension.

Studies conducted in secondary schools, higher education, and vocational institutions reported improvements in academic vocabulary, reading comprehension, technical writing, and discipline-specific communication skills. This indicates that learning language through meaningful content contexts allows students to internalize linguistic forms more effectively while developing conceptual understanding.

In the Indonesian context, this finding is particularly relevant, as Kurikulum Merdeka emphasizes functional literacy and contextual learning. CBI supports this objective by positioning language as a medium for knowledge construction rather than as an isolated subject.

Another significant finding concerns the role of CBI in fostering higher-order cognitive competencies. The reviewed studies consistently demonstrate that students engaged in CBI activities exhibit stronger critical thinking, analytical reasoning, and problem-solving abilities. These skills emerge from sustained engagement with academic content that requires interpretation, evaluation, and synthesis rather than rote memorization.

This pattern aligns closely with Kurikulum Merdeka's competency framework, which prioritizes critical and creative thinking as core graduate attributes. By embedding language learning within cognitively demanding subject matter, CBI creates learning environments that naturally cultivate these competencies.

The literature also indicates that CBI contributes significantly to learner autonomy and motivational engagement. Students exposed to content-based learning environments tend to demonstrate higher participation rates, greater confidence in using academic language, and stronger responsibility for their own learning processes. Collaborative tasks and project-based activities commonly associated with CBI further reinforce social competence and communication skills.

Such outcomes are consistent with Kurikulum Merdeka's student-centered orientation, which encourages learners to actively construct knowledge and take ownership of their learning trajectories. In this regard, CBI functions not only as a language pedagogy but also as a mechanism for cultivating independent and self-regulated learners.

Despite its benefits, the literature highlights several recurring challenges. Teacher preparedness emerges as the most frequently reported barrier, particularly in contexts where educators lack sufficient training in both subject content and language pedagogy. Limited instructional resources, time constraints, and misalignment between assessment systems and competency-based objectives further complicate implementation.

In Indonesia, these challenges may be amplified by disparities in school infrastructure and uneven access to professional development opportunities. Without systematic institutional support, the effectiveness of CBI risks remaining localized rather than scalable.

The findings of this literature-based analysis demonstrate that Content-Based Instruction holds substantial potential as a pedagogical approach compatible with the goals of Kurikulum Merdeka. Its capacity to integrate linguistic development with cognitive, social, and motivational competencies directly supports the curriculum's emphasis on holistic student development.

From a curriculum perspective, CBI provides a practical framework for operationalizing competency-based education. Rather than treating competencies as abstract targets, CBI embeds them within daily instructional practices through interdisciplinary learning tasks and authentic content engagement. This integration allows competency development to occur organically as part of routine classroom activities.

However, the literature also suggests that successful adoption of CBI requires more than methodological adjustment at the classroom level. Structural alignment between curriculum design, assessment systems, and teacher training programs is essential. Kurikulum Merdeka offers institutional flexibility that could facilitate such alignment, but this potential will only be realized if accompanied by systematic capacity-building initiatives.

The identified implementation challenges further indicate that CBI should be introduced gradually and strategically. Professional development programs focusing on content-language integration, curriculum mapping, and competency-based assessment would be necessary to ensure consistency and sustainability. Additionally, technological support could mitigate resource limitations by providing access to diverse learning materials and interactive platforms.

This study contributes to existing scholarship by shifting the focus from instructional effectiveness alone to curriculum-level integration. While previous research has largely emphasized classroom outcomes, this analysis highlights the importance of positioning CBI as a strategic component within national education reform.

Nevertheless, this study is limited by its reliance on secondary data and a relatively small corpus of recent literature. Future research should incorporate empirical investigations in Indonesian classrooms to examine long-term impacts of CBI on student competencies and to explore contextual factors influencing implementation across diverse regions and educational levels.

CONCLUSION AND RECOMMENDATIONS

This study examined the role of Content-Based Instruction (CBI) in supporting student competency development within the framework of Indonesia's Kurikulum Merdeka through a literature-based analysis of 15 recent studies. The findings indicate that CBI contributes significantly to four major domains of competency development: academic language proficiency, higher-order cognitive skills, learner autonomy and collaborative competence, and learning motivation.

The review demonstrates that integrating language learning with subject content enables students to acquire linguistic skills in meaningful academic contexts while simultaneously strengthening conceptual understanding. This dual function positions CBI as a pedagogical approach that aligns closely with the competency-based orientation of Kurikulum Merdeka, which emphasizes critical thinking, problem solving, communication, and self-directed learning as essential graduate attributes.

Beyond instructional effectiveness, this study highlights the relevance of CBI at the curriculum level. By embedding competency development into everyday classroom practices through interdisciplinary and content-rich learning activities, CBI offers a practical mechanism

for translating curriculum objectives into operational teaching strategies. In this sense, CBI functions not merely as a language teaching methodology but as a strategic component of competency-based education reform.

However, the literature also reveals persistent challenges related to teacher preparedness, instructional resources, curriculum alignment, and assessment practices. Without systematic professional development and institutional support, the implementation of CBI risks remaining limited to isolated classroom initiatives rather than becoming a scalable and sustainable pedagogical model. These challenges are particularly relevant in the Indonesian context, where educational infrastructure and teacher training opportunities vary considerably across regions.

This study contributes to existing scholarship by synthesizing recent empirical evidence and conceptualizing the role of CBI within national curriculum reform, rather than focusing solely on classroom-level outcomes. Nevertheless, the findings are constrained by the scope of available literature and the absence of longitudinal empirical data from Indonesian educational settings.

Future research should therefore prioritize large-scale and long-term empirical investigations to examine how CBI influences student competencies across different educational levels and socio-cultural contexts in Indonesia. Further studies may also explore the design of curriculum frameworks and assessment systems that effectively accommodate content-language integration.

In conclusion, Content-Based Instruction represents a promising pedagogical approach for advancing the goals of Kurikulum Merdeka. When supported by coherent curriculum design, adequate teacher training, and appropriate learning resources, CBI has the potential to strengthen competency-based education and contribute to the development of students who are linguistically proficient, cognitively skilled, and prepared to meet the demands of contemporary society.

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