Research Article

Analysing The Implementation of Content and Language Integrated Learning (CLIL) in Senior High School in Indonesia
(A Systematic Literature Review)

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Abstract: This study reviews the implementation of Content and Language Learning (CLIL) in Indonesia senior high school through a systematic review. The review aim to identify research trends, report benefits, and key challenges of CLIL in Indonesia education context. Following the FRISMA guidelines, nine peer-reviewed studies published between 2021 and 2025 were selected from reputable academic databases. The analysis focuses in research design, learning outcomes, and implementation n issues, and it applies the CLIL 4Cs framework—Content, Communication, Cognition, and Culture— as the main analytical lens. The finding indicates that CLIL has appositive impact on student engagement, learning motivation, and better understanding of content and increased confidence in using English in academic context. CLIL also support active learning and encourages higher-order thinking skills. However, the review reveal several challenges that limit effective implementation. These include limited teacher readiness, insufficient English proficiency among teachers and students, lack of collaboration between subject teachers and English teachers, nd difficulties is assessing content and language learning simultaneously. Analysis the 4Cs framework show that Content and Communication are the most emphasized componet in current CLIL practices, while Cognition receives moderate attention and culture is rarely adressed explicitly. The study concludes that although CLIL is feasible and beneficialfor Indonesia senior high schools, its long-term succes depend on continues teacher professiional development, stronger institutional support, and clearer integration within the Merdeka Curriculum. Theis review provide useful insights for educators, researcher, and policemakers to improve bilingual and CLIL-based instruction in Indonesia.

Keywords: 4Cs Framework; Bilingual Education; CLIL; Indonesia; Senior High School.

1. Introduction

The growing worldwide connections have highlighted the value of knowing multiple languages, making Content and Language Integrated Learning (CLIL) a widely acknowledged educational method globally. CLIL originated in Europe to encourage language variety by employing a foreign language, typically English, to teach subjects unrelated to language (Affandi & Nurfadhillah, 2023). In contrast to immersion approaches, CLIL permits the continued use of local and national languages as students progressively build skills in a foreign language. It has been adopted in over 40 countries, and in various European countries, CLIL is officially part of national school programs (Khoiriyah, 2021).

In Indonesia, CLIL holds special significance given the nation's diverse languages and learning objectives. Students in Indonesia often learn regional languages before mastering the national language, Bahasa Indonesia, which sets a good base for acquiring more languages(Affandi & Nurfadhillah, 2023). Under the 2013 Curriculum, English is a required course, offering a solid structure for combining it with other academic areas (Affandi &

Nurfadhillah, 2023). Furthermore, Indonesia's goal to build internationally capable individuals, particularly amid regional issues like the Asian Economic Community (AEC), stresses the need for strong English abilities. The presence of bilingual training programs for teachers in Indonesian higher education institutions, created under the Rancangan Sekolah Berbasis Internasional (RSBI), shows ongoing support for CLIL, despite the RSBI program's end. These factors suggest that CLIL could greatly improve English education within the Merdeka Curriculum (Kholili et al., 2024).

Earlier research in Indonesia has examined CLIL application at various school stages and shown gains in language ability, reading and writing skills, and analytical thinking (Kholili et al., 2024). Studies have also verified the success of CLIL in high school settings, particularly for subjects such as math and science, which are taught in English. For instance, Kholili, Rachmajanti, and Wulyani (2024) observed a notable beneficial impact of CLIL on student performance under the Merdeka Curriculum. Likewise, Affandi and Nurfadhillah (2023) determined that CLIL is suitable for use in Indonesian Senior High Schools.

Even with these encouraging results, obstacles and areas for further study persist. Educators frequently worry about their own English skills and lack of knowledge about CLIL concepts, potentially causing stress in managing both subject knowledge and language growth (Kholili et al., 2024). Khoiriyah (2021) pointed out the importance of enhancing teacher skills and fostering teamwork between content and language instructors. Additionally, Idris, Said, and Sulaiman (2025) mentioned scarce data on CLIL's effects on particular aspects of writing abilities and called for better evaluation techniques (Idris, Ehsan, Said, Sulaiman, et al., 2025). Further issues involve restrictions in the curriculum, such as the 2013 Curriculum's failure to clearly link English with other fields, and students' inadequate English levels in advanced education (Affandi & Nurfadhillah, 2023).

Thus, this systematic review of literature seeks to fill these voids by offering an in-depth examination of CLIL use in Indonesian Senior High Schools. The research compiles insights on study features, application strategies, advantages noted, difficulties faced, and connections to the CLIL 4Cs Framework. Through this review, a better understanding of CLIL's strengths and weaknesses in Indonesia is achieved, and useful suggestions and guidance are provided for teachers and decision-makers to facilitate successful future applications and investigations.

2. Literature Review

The implementation of Content and Language Integrated Learning (CLIL) in Indonesian senior high schools, particularly when examined through a systematic literature review (SLR), is supported by several influential theories in language learning and educational psychology. At its core, CLIL is based on the principle that language acquisition becomes more effective when it is integrated with meaningful subject content rather than taught as an isolated component.

One of the primary theoretical foundations of CLIL is Vygotsky's Sociocultural Theory, which emphasizes the importance of social interaction and the Zone of Proximal Development (ZPD) in the learning process (Vygotsky & Cole, 1978). In CLIL classrooms, language functions as a mediating tool through which students construct understanding of subject matter by interacting with teachers and peers in the target language. Teachers support this process by providing scaffolding, such as simplifying language and offering guidance, enabling learners to cope with both content comprehension and language use simultaneously. This practice aligns with CLIL's emphasis on collaborative and active learning, which fosters both linguistic and cognitive development (Coyle et al., 2010).

Cummins's theory of Cognitive Academic Language Proficiency (CALP) also provides a strong foundation for CLIL. This theory distinguishes basic interpersonal communication skills from academic language proficiency required for formal learning contexts (Cummins, 1984). CLIL is designed to promote the development of CALP, as students are expected to process and communicate complex academic concepts through the target language. This aspect is particularly relevant for senior high school students who engage with abstract content and advanced disciplinary knowledge. Through content-based instruction, CLIL offers authentic contexts that facilitate the acquisition of academic language.

Krashen's Input Hypothesis further supports the implementation of CLIL. The theory proposes that language acquisition occurs when learners are exposed to comprehensible input that is slightly above their current proficiency level, known as i+1 (Krashen, 1985). In CLIL environments, subject content provides meaningful and context-rich input, encouraging learners to prioritize understanding meaning rather than focusing solely on linguistic forms.

This exposure enhances motivation and promotes natural language acquisition more effectively than traditional grammar-focused instruction.

In vocational education settings, theories related to English for Specific Purposes (ESP) are also relevant. ESP focuses on teaching language that is directly aligned with learners' academic or occupational needs (Hutchinson & Waters, 1987). In Indonesian vocational high schools, CLIL can be integrated with ESP principles to address language functions required for subject learning and workplace communication, thereby increasing the practicality and relevance of language instruction.

Moreover, the use of a systematic literature review as a research method is grounded in principles of methodological rigor, transparency, and replicability. By adhering to established guidelines such as PRISMA, SLRs aim to minimize bias and provide a comprehensive synthesis of existing research findings (Moher et al., 2009). This approach enables researchers to identify recurring themes, challenges, and research gaps related to the implementation of CLIL (Roberts et al., 2006).

Finally, the CLIL 4Cs Framework, which consists of Content, Communication, Cognition, and Culture, serves as a valuable analytical framework for evaluating CLIL practices (Coyle et al., 2010). This framework ensures that CLIL is implemented as an integrated educational approach in which subject knowledge, language development, cognitive skills, and cultural awareness are addressed in a balanced manner, rather than viewing CLIL merely as language instruction delivered through subject content.

3. Materials and Methods

This systematic literature review (SLR) aims to present a comprehensive examination of the implementation of Content and Language Integrated Learning (CLIL) in Indonesian senior high schools. The review is conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure methodological rigor, transparency, and clarity throughout the research process, as well as to enhance the replicability of the study (Moher, David, J et al., 2021).

Search Strategy and Study Selection

A systematic search was conducted across several reputable academic databases, including Google Scholar, ERIC, and Mendeley. To identify relevant studies, a variety of keywords were employed, such as "CLIL," "Content and Language Integrated Learning," "Indonesia," "Senior High School," "EFL," "implementation," "challenges," and "benefits." These keywords were combined using Boolean operators (AND, OR) to maximize the scope of the search results. Initially, no restrictions were applied to the publication year to capture a broad range of relevant literature. Subsequently, the screening process emphasized more recent studies to better reflect current trends, practices, and developments in CLIL research, in line with established procedures for systematic reviews (Roberts et al., 2006).
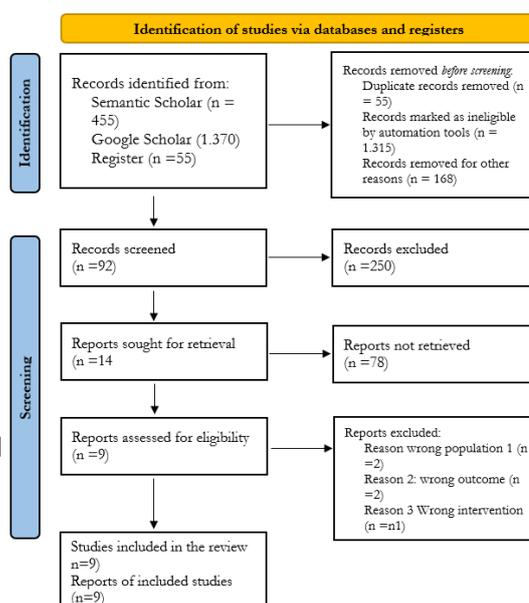

Figure 1. Frisma Flowchart.

The table below outlines the adapted inclusion and exclusion criteria formulated in line with the PRISMA 2020 guidelines. The terminology applied follows standard conventions in Systematic Literature Review (SLR) reporting and is appropriate for the Eligibility Criteria subsection. Furthermore, these criteria correspond to the key stages of the PRISMA flow diagram, namely identification, screening, eligibility, and inclusion (Moher, David, J et al., 2021).

Table 1. Eligibility Criteria for Study Selection.

PRISMA Domain	Inclusion Criteria	Exclusion Criteria
Population / Context	Studies conducted in Indonesia that explicitly examine CLIL implementation or its effects in educational settings	Studies conducted outside Indonesia or not addressing CLIL
Educational Level	Senior High School level; vocational or higher education studies with findings transferable to secondary education	Primary school–only studies without direct relevance to secondary education
Intervention / Phenomenon	Implementation of Content and Language Integrated Learning (CLIL) or analysis of its impacts	Studies focusing on non-CLIL pedagogical approaches
Study Design	Empirical research (qualitative, quantitative, mixed methods), systematic reviews, or conceptual studies with concrete analytical insights	Opinion articles, editorials, non-peer-reviewed conference papers, or book chapters without empirical data
Outcomes / Focus	Reports outcomes, challenges, benefits, or pedagogical implications of CLIL implementation	Studies lacking clear outcomes or analytical discussion related to CLIL
Publication Type	Peer-reviewed journal articles	Non-journal publications, unpublished manuscripts
Publication Year	Published between 2015 and 2025	Published before 2015 or after 2025
Language	Articles published in English or Indonesian	Articles published in other languages
Availability	Full-text accessible articles	Abstract-only or inaccessible full-text articles
PRISMA Domain	Inclusion Criteria	Exclusion Criteria

Data Extraction

For each selected study, relevant information was systematically collected and organized using a standardized data extraction form. The extracted data comprised a sequential study number, author(s), and year of publication, research design (including qualitative, quantitative, mixed methods, systematic review, conceptual paper, narrative inquiry, or synthesis research), research focus, key findings, reported benefits of CLIL, and identified challenges related to its implementation. This structured data extraction process facilitated a clear, comprehensive, and comparable analysis across all included studies, consistent with established systematic review methodologies (Roberts et al., 2006).

Table 2. The result of the selected journal.

No	Author/year	Research Method	Focus	Main Result	Benefit	Challenge
1	Akhmad Affandi, Auliyanti Sahril Nurfadhillah (2023)	Qualitative (Desk Research)	Feasibility of implementing CLIL in Indonesian Senior High Schools across four	It is concluded that CLIL can be implemented in the Senior High School level in Indonesia.	Students are free from national examination pressure, allowing focus on communicative	Institutional support from the government is a pivotal factor; teachers require pre-sessional and

No.	Author(s)	Method	Aim	Findings	Strengths	Challenges
			dimensions: education system, student assessment, teacher readiness, and parental perspectives.		competence; availability of prospective teachers; opportunity to apply Task-based learning.	in-sessional training.
	Muhammad Kholili, Sri Rachmajanti, Anik Nunuk Wulyani (2024)	Mixed Method (Exploratory Sequential Research)	The effect of CLIL on students' learning achievement in the Merdeka Curriculum at a senior high school in Gresik, East Java.	There was a significant positive effect of CLIL on students' learning achievement.	CLIL was engaging and motivating, improving both content understanding and language skills; students could express complex concepts better; encourages self-regulation.	Initial difficulty in understanding content (biology) and using academic English; persistent challenges in academic writing and communication.
	Faisal Idris, Nur Ehsan Mohd Said, Nur Ainil Sulaiman (2025)	Mixed-methods (Quasi-experimental)	The efficacy of CLIL in enhancing writing accuracy and language learning motivation in a vocational high school in Aceh, Indonesia.	The study found a minimal, non-significant difference in writing accuracy after the intervention.	CLIL is a pedagogically sound alternative that creates an interactive and cognitively enriching learning environment.	Writing accuracy is a persistent challenge; low student motivation and non-engaging conventional methods impede proficiency.
2	Khoiriyah (2021)	Systematic Literature Review	To provide an overview of CLIL implementation in the Indonesian context based on recent empirical studies.	CLIL is used as a framework for material development, its effects are researched, and it's often combined with other approaches like project-based or task-based learning.	The body of research on CLIL in the Indonesian EFL setting is growing significantly.	Key pedagogical needs include improving teacher competence, fostering cooperation between content and language teachers, and boosting student motivation.
3	Faisal Idris, Nur Ehsan Mohd Said, Nur Ainil Sulaiman (2025)	Systematic Literature Review	The impact of CLIL on the acquisition of EFL writing skills in secondary education, based on 43 articles from 2015-2023.	CLIL shows a dynamic gain and positively impacts all outcomes of writing measurement.	CLIL positively influences all measured aspects of writing skills.	There is a lack of knowledge on its impact on specific elements of writing; future studies need better measurement techniques for discipline-specific content.
	Rina Wahyu Setyaningrum & Khoiriyah (2022)	Exploratory Study	Implementation of adapted CLIL in Indonesian primary schools to support Teaching English to Young Learners (TEYL).	Teachers successfully performed some core features of CLIL, including multiple foci, active learning, scaffolding, and cooperation.	Core features of CLIL were being applied in day-to-day classes.	Cooperation between content and language teachers needs improvement; teachers require more training to enhance their competence in CLIL practices.
4	Hertati Mukadimah	Conceptual Paper	Embedding CLIL into the English for	The paper proposes a	CLIL is an effective tool for	The application and

	Author/year	Research Method	Focus	Main Result	Benefit	Challenge
	& Wening Sahayu (2021)		Specific Purposes (ESP) curriculum for Indonesian vocational high schools.	framework for integrating CLIL and ESP, highlighting its suitability for vocational education.	building both content and language knowledge in specific vocational areas.	implementation of CLIL can vary significantly from one place to another.
	Rima Nabilah Nuzula, Muhammad Aminuddin, Sajidin (2024)	Narrative Inquiry	Investigating CLIL implementation and its effectiveness in stimulating student engagement in an Indonesian EFL senior high school.	Students with high motivation demonstrate strong engagement in learning activities within the CLIL approach.	CLIL can provide hands-on learning materials and strengthen student engagement.	Current classroom activities can be monotonous and lack student involvement without effective implementation.
5	Marhamah (2024)	Synthesis Research	The implementation of CLIL in Indonesian higher education, focusing on its benefits and pitfalls.	CLIL improves students' language skills, subject knowledge, and motivation, but faces significant implementation challenges.	Improves student language skills, subject knowledge, and motivation; offers professional development for educators.	Students' limited English proficiency, shortage of well-trained instructors, difficulty integrating content and language, and lack of appropriate assessment methods.
6	Author/year	Research Method	Focus	Main Result	Benefit	Challenge
7	Akhmad Affandi, Auliyanti Sahril Nurfadhillah (2023)	Qualitative (Desk Research)	Feasibility of implementing CLIL in Indonesian Senior High Schools across four dimensions: education system, student assessment, teacher readiness, and parental perspectives.	It is concluded that CLIL can be implemented in the Senior High School level in Indonesia.	Students are free from national examination pressure, allowing focus on communicative competence; availability of prospective teachers; opportunity to apply Task-based learning.	Institutional support from the government is a pivotal factor; teachers require pre-sessional and in-sessional training.
8	Muhammad Kholili, Sri Rachmajanti, Anik Nunuk Wulyani (2024)	Mixed Method (Exploratory Sequential Research)	The effect of CLIL on students' learning achievement in the Merdeka Curriculum at a senior high school in Gresik, East Java.	There was a significant positive effect of CLIL on students' learning achievement.	CLIL was engaging and motivating, improving both content understanding and language skills; students could express complex concepts better; encourages self-regulation.	Initial difficulty in understanding content (biology) and using academic English; persistent challenges in academic writing and communication.
9	Faisal Idris, Nur Ehsan Mohd Said, Nur Ainil Sulaiman (2025)	Mixed-methods (Quasi-experimental)	The efficacy of CLIL in enhancing writing accuracy and language learning motivation in a vocational high	The study found a minimal, non-significant difference in writing accuracy after the intervention.	CLIL is a pedagogically sound alternative that creates an interactive and cognitively	Writing accuracy is a persistent challenge; low student motivation and non-engaging conventional

| | school in Aceh, Indonesia. | enriching learning environment. | methods impede proficiency. |

Integration of the CLIL 4Cs Framework

This review employs the CLIL 4Cs Framework Content, Communication, Cognition, and Culture as its primary analytical lens. Developed by Coyle (2015), the 4Cs Framework provides a comprehensive model for examining effective CLIL teaching and learning practices. Content refers to the subject matter being taught, such as Biology or Mathematics. Communication highlights the role of language as a medium for learning and meaning-making. Cognition addresses the development of learners' thinking processes and higher-order skills throughout instruction. Culture focuses on fostering intercultural awareness and global citizenship. The use of this framework enables a balanced evaluation of both subject learning and language development within CLIL implementation (Coyle, 2015).

Mapping SLR Findings to the CLIL 4Cs Framework

Following the data extraction stage, the findings, benefits, and challenges identified in each study were systematically classified according to the CLIL 4Cs Framework. Aspects related to subject knowledge were categorized under Content, reported improvements in language skills were assigned to Communication, the enhancement of critical and higher-order thinking skills was linked to Cognition, and findings connected to Indonesia's multilingual and multicultural context were grouped under Culture (Coyle, 2015). This analytical mapping facilitated the identification of the most frequently discussed CLIL components, areas where positive outcomes were most evident, and aspects where significant challenges persist in Indonesian senior high schools. Through the consistent application of the 4Cs Framework, this review provides a more nuanced understanding of the pedagogical impact of CLIL, extending beyond language learning alone (Coyle, 2015).

4. Results and Discussion

Findings and Results

This section presents the principal findings of the systematic literature review and organizes them to provide a comprehensive overview of CLIL implementation in Indonesian senior high schools.

Characteristics of the Selected Studies

This review analyzed nine studies published between 2021 and 2025, indicating a growing scholarly interest in CLIL within the Indonesian educational context. The selected studies employed diverse research designs, including qualitative desk research, mixed-method studies with quasi-experimental designs, systematic literature reviews, exploratory research, conceptual analyses, narrative inquiry, and synthesis research (Affandi & Nurfadhillah, 2023; Idris, Ehsan, Said, & Sulaiman, 2025; Kholili et al., 2024). This methodological diversity reflects a comprehensive effort to examine CLIL from multiple perspectives, encompassing theoretical foundations, classroom implementation, and empirical learning outcomes.

Regarding educational settings, the reviewed studies investigated CLIL across various levels, including senior high schools, vocational high schools, primary schools with implications for Teaching English to Young Learners (TEYL), and higher education. Despite these contextual variations, all studies offered insights relevant to CLIL implementation in Indonesian senior high schools, contributing to a broad yet focused understanding of CLIL practices in Indonesia (Khoiriyah, 2021)

Models of CLIL Implementation

The reviewed literature reveals that CLIL has been implemented in Indonesian educational contexts through several models and instructional approaches.

First, several studies suggest that CLIL is often employed as a framework for developing instructional materials. In this model, English is integrated with subject content through CLIL-based lesson plans and learning resources, including e-modules aligned with the national curriculum (Affandi & Nurfadhillah, 2023; Idris, Ehsan, Said, & Sulaiman, 2025; Khoiriyah, 2021). This approach enables teachers to align content objectives with language learning goals systematically.

Second, CLIL has been incorporated into existing curricula, particularly within the Merdeka Curriculum, to enhance students' learning outcomes (Kholili et al., 2024). In vocational high schools, CLIL has also been integrated with English for Specific Purposes (ESP) programs to address subject-related language needs relevant to students' future professional contexts (Padmadewi & Artini, 2020)

Third, several studies report that CLIL is often combined with complementary pedagogical approaches, such as bilingual education, project-based learning, task-based learning, and genre-based learning (Cummins, 2001). Notably, Affandi and Nurfadhillah (2023) emphasize the potential of task-based learning within CLIL classrooms at the senior high school level, as it promotes active language use through meaningful tasks.

Finally, an adapted version of CLIL has been implemented at the primary school level to support TEYL. This adaptation maintains core CLIL principles while simplifying content and language complexity to accommodate younger learners' cognitive and linguistic development (Khoiriyah, 2021).

Reported Benefits of CLIL Implementation

The reviewed studies consistently report several key benefits of CLIL implementation in Indonesian educational settings.

First, CLIL is widely recognized as an engaging and motivating instructional approach that enhances both subject learning and English language development. The literature indicates that CLIL helps students develop a deeper understanding of subject content while enabling them to express complex ideas more effectively in English. Additionally, CLIL fosters learner autonomy and supports students' academic and career preparation (Khoiriyah, 2021; Kholili et al., 2024; Tukur et al., 2024).

Second, CLIL demonstrates positive effects on students' language proficiency, particularly in vocabulary development as well as receptive and productive skills. Several studies report improvements in interactive writing activities and measurable gains in students' writing performance across multiple dimensions (Idris, Ehsan, Said, & Sulaiman, 2025; Kholili et al., 2024).

Third, CLIL contributes to the development of critical thinking skills and deeper knowledge construction. Through interactive learning and meaningful tasks, students are encouraged to engage cognitively and reflect critically on learning content (Kholili et al., 2024).

In addition to student-related outcomes, CLIL implementation supports teachers' professional development by enhancing their English proficiency and instructional competence. This professional growth contributes to more effective teaching practices in bilingual and CLIL-based classrooms (Idris, Ehsan, Said, Sulaiman, et al., 2025).

Overall, CLIL is regarded as a pedagogically effective alternative to traditional language teaching approaches, as it promotes an interactive and cognitively rich learning environment by integrating language use with meaningful content rather than emphasizing isolated grammar instruction (Affandi & Nurfadhillah, 2023).

Alignment with the CLIL 4Cs Framework

The reviewed studies demonstrate varying degrees of alignment with the CLIL 4Cs Framework, which includes Content, Communication, Cognition, and Culture (Coyle et al., 2010).

With respect to Content, most studies address this component either explicitly or implicitly. Given that CLIL involves teaching subject matter through an additional language, content learning naturally emerges as a central focus. Several studies report improved subject comprehension, suggesting that CLIL effectively supports content learning in English-medium contexts (Affandi & Nurfadhillah, 2023).

The Communication component is strongly emphasized across the literature. Many studies document improvements in students' language skills, including enhanced interactive writing, increased confidence in using English, and greater ability to express complex academic concepts (Affandi & Nurfadhillah, 2023; Khoiriyah, 2021). However, communication-related challenges are also frequently reported, particularly students' limited English proficiency and persistent difficulties in academic writing (Khoiriyah, 2021; Kholili et al., 2024).

The Cognition component receives moderate attention. Several studies indicate that CLIL promotes critical thinking and creates a cognitively stimulating learning environment through problem-solving and discussion-based activities (Cole & John-steiner, 1978). Core CLIL practices such as active learning and scaffolding are also observed, supporting students' cognitive development and higher-order thinking skills (Mehisto et al., 2008) .

In contrast, the Culture component receives the least explicit attention. Although CLIL is implemented within Indonesia's multilingual context and is often associated with preparing globally competent learners, intercultural learning outcomes are rarely discussed in depth (Arif et al., 2025). This suggests that cultural dimensions are present implicitly but are not systematically addressed in CLIL research at the senior high school level.

Overall, the findings indicate that CLIL implementation in Indonesian senior high schools prioritizes Content and Communication, provides moderate attention to Cognition, and places limited explicit emphasis on Culture within the 4Cs Framework.

Summary of Key Findings

In summary, the reviewed studies indicate that CLIL has strong potential as an effective instructional approach in Indonesian senior high schools. CLIL enhances student engagement and learning motivation while supporting the integrated development of subject knowledge and English language skills (Coyle et al., 2010; Mehisto et al., 2008). Furthermore, CLIL aligns with Indonesia's educational goals, particularly in fostering multilingual competence and preparing students for global academic and professional contexts (Hu et al., 2023).

However, successful and sustainable CLIL implementation depends on addressing several critical challenges. The literature consistently highlights limited teacher readiness, particularly in balancing content mastery with English proficiency and CLIL-specific pedagogical skills (Saksono et al., 2024). Insufficient collaboration between subject teachers and English teachers further constrains instructional effectiveness (Mehisto et al., 2008). Additionally, the lack of context-sensitive assessment systems capable of evaluating both content learning and language development remains a significant concern (Kholili et al., 2024). Without systematic efforts to address these issues, the broader adoption of CLIL in Indonesian senior high schools may remain limited (Khoiriyah, 2021).

Discussion and Implications

Implications of the Findings

The findings of this review reveal several important implications for CLIL implementation in Indonesian senior high schools. First, consistent evidence demonstrating improvements in students' academic achievement, learning motivation, and English proficiency suggests that CLIL is both pedagogically effective and aligned with the objectives of the Merdeka Curriculum (Khoiriyah, 2021; Kholili et al., 2024). By fostering interactive and cognitively engaging learning environments, CLIL helps address common classroom challenges such as passive learning and limited student participation (Affandi & Nurfadhillah, 2023), thereby supporting broader educational reform and global competence development (Coyle et al., 2010).

Second, the challenges identified, particularly those related to teacher competence and students' English proficiency, highlight the complexity of CLIL implementation. Effective CLIL instruction requires teachers to manage subject content and language instruction simultaneously, a skill that demands substantial pedagogical and linguistic preparation (Affandi & Nurfadhillah, 2023; Peeter Mehisto, 2008). Limited curriculum integration and insufficient collaboration between content and language teachers further reduce instructional effectiveness (Khoiriyah, 2021; Setyaningrum et al., 2022). These findings underscore the need for strong institutional and professional support at the school level.

Third, the uneven alignment with the CLIL 4Cs Framework suggests that the full pedagogical potential of CLIL has not yet been fully realized. While Content and Communication receive considerable attention, Cognition and especially Culture remain underemphasized (Coyle et al., 2010). This limits opportunities to develop students' critical thinking skills and intercultural awareness, both of which are essential for global citizenship (Khoiriyah, 2021). Additionally, limited improvement in specific language skills, particularly writing accuracy, indicates the need for more targeted instructional strategies within CLIL contexts (Affandi & Nurfadhillah, 2023; Kholili et al., 2024).

5. Conclusion and Recommendation

Conclusion

This systematic literature review examined the feasibility and effectiveness of CLIL in Indonesian senior high schools by synthesizing nine studies published between 2021 and 2025. The findings confirm that CLIL is both feasible and pedagogically effective in the Indonesian context. CLIL positively influences students' academic achievement, learning motivation, and classroom engagement while supporting the integrated development of subject knowledge and English language skills (Coyle et al., 2010; Khoiriyah, 2021).

Furthermore, CLIL aligns well with Indonesia's multilingual educational context and current policy direction under the Merdeka Curriculum. By integrating language learning with subject instruction, CLIL creates an interactive and cognitively engaging learning environment that addresses common limitations of traditional English instruction.

Nevertheless, several challenges hinder effective and sustainable CLIL implementation, including limited teacher English proficiency, insufficient professional training in CLIL pedagogy, weak collaboration between content and language teachers, and difficulties in assessing content and language learning simultaneously (Affandi & Nurfadhillah, 2023; Setyaningrum et al., 2022). In addition, evidence related to the development of specific language skills, particularly academic writing, remains limited and inconsistent (Kholili et al., 2024). Without systematic interventions, the full potential of CLIL in Indonesian senior high schools may remain underutilized.

Recommendations

To ensure effective and sustainable CLIL implementation, several recommendations are proposed. First, teacher competence should be strengthened through continuous professional development focusing on English proficiency, CLIL pedagogy, material development, and scaffolding strategies (Affandi & Nurfadhillah, 2023; Mehisto et al., 2008) .

Second, schools should establish formal mechanisms to promote collaboration between subject teachers and English teachers, including joint curriculum planning, lesson design, and assessment development (Setyaningrum et al., 2022).

Third, contextually relevant CLIL materials and assessment tools should be developed in alignment with the national curriculum and students' language proficiency levels. Assessment practices must balance content mastery and language development transparently (Kholili et al., 2024).

Fourth, stronger institutional and policy support is required through clear guidelines, adequate resource allocation, and explicit integration of CLIL principles within the Merdeka Curriculum (Khoiriyah, 2021).

Finally, future research should focus on improving assessment strategies and examining the development of specific language skills, particularly academic writing, through CLIL instruction. Longitudinal studies are also recommended to explore the long-term impact of CLIL on students and teachers in Indonesian senior high schools (Kholili et al., 2024).

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