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Content and Language Integrated Learning Activities and Vocabulary Learning for Young Learners

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Abstract: CLIL (Content and Language Integrated Learning) incorporates content acquisition and language instruction, allowing students to develop linguistic competencies while engaging with particular topics. This research aims to investigate the effectiveness of CLIL activities in enhancing students' vocabulary, as well as to explore students' views of engaging in CLIL activities for their learning process. The participants consisted of 21 primary school students with diverse levels of English ability. The study employed a mixed-methods research approach, combining a quasi-experimental study (one-group pre-test and post-test) with a survey. The results indicated that CLIL activities notably improved students' vocabulary mastery, with post-test scores (Mean: 60,38) surpassing the average pre-test scores (Mean: 58,28). In response to the students' perceptions of their experiences, among 21 students, 15 (71%) indicated that CLIL activities enhanced their interest in English and science. In this study, CLIL activities were carried out by incorporating singing, engaging in games such as flashcards and QNA, and facilitating group discussions. The CLIL activities offer significant contexts for language application, facilitating the effective acquisition of new vocabulary for students. The students demonstrated enhanced vocabulary test scores as a result of the learning activities. The findings indicate that CLIL-based learning significantly enhances students' vocabulary, and students express a favourable perception of this approach. Educators should incorporate CLIL activities into their instructional methods to create a vibrant and engaging learning environment. Future investigations could delve into the implementation of CLIL across various educational settings and disciplines to fully harness its potential advantages.

Keywords: CLIL activities, CLIL for young learners, Merdeka curriculum, teaching vocabulary, Indonesian EFL learners, primary school.

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Introduction

English stands as a prominent language in contemporary society, serving multiple functions such as in commercial activities, communication, and education. It is recognized as the most spoken language worldwide, consistently ranking first among the top five most spoken languages (Chang, 2025; Islam & Stapa, 2021; Zhang & Wang, 2023). As noted by Nguyen et al. (2022), current English language teaching in non-English countries is demanded to adapt more effective approaches, methods, and strategies to foster a more effective English learning environment. In parallel, in the Indonesian EFL (English as Foreign Language) setting, Husna et al. (2025) underscored the indispensability of English proficiency, highlighting its status as a compulsory subject within Indonesian schools. Attaining proficiency in English necessitates the systematic development of four fundamental skills, including listening, reading, speaking, and writing (Almelhes, 2024; Ruegg et al., 2024). Notably, vocabulary is essential for mastering language skills, as it directly impacts students' ability to understand and produce language effectively.

Several previous studies have indicated that many students may struggle with vocabulary acquisition, often finding it challenging to learn and comprehend (Hao et al., 2021; Jafarigohar et al., 2022; Shi & Tsai, 2024). In some cases, students remain silent when asked to answer questions due to a lack of vocabulary knowledge (F. Huang et al., 2025). Several factors contribute to this issue. Teachers might overlook students who struggle to keep up with lessons, focusing instead on delivering content (Tomlinson, 2017). Some instructional methods prioritize content delivery without adequately assessing students' understanding (Ismailov et al., 2025). Therefore, to address the problem, the researchers attempted

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to explore one of the techniques to improve students' skills in understanding vocabulary. One of which is by implementing Content and Language Integrated Learning (henceforth CLIL).

CLIL represents an instructional methodology that integrates language acquisition with the teaching of specific content areas, exposing students to context and immersive vocabulary learning. According to Al Hajri et al. (2021) CLIL proves to be an efficacious approach for promoting students' vocabulary retention and motivation. Mirzayev and Oripova (2022) identify and discuss several advantages of CLIL in vocabulary acquisition. First, it provides contextualized learning by connecting instruction in languages to topics such as history, geography, and science, which makes the vocabulary acquisition more meaningful (Dourda et al., 2014). Second, it exposes students to a profusion of vocabulary, with new terms focused on specific subjects that will deepen knowledge of that topic, as well as overall vocabulary knowledge (Vraciu & Marsol, 2023). Third, CLIL promotes better retention, particularly when learning vocabulary in context, as opposed to rote Memorization, which promotes scores on standardized tests, but de-emphasizes long-term memory retention (Lai, 2024). Fourth, it helps to create a meaningful language practice, since students can use the language in discussions and presentations (Ginting, 2021). Last, CLIL promotes cognitive development by providing learners with subject area content in a language other than their mother tongue, which encourages critical thinking, cognitive flexibility, and deeper vocabulary acquisition (Tagnin & Ní Ríordáin, 2021).

Although CLIL has its advantages, its practice also brings challenges. Some learners might experience anxiety because they are not very proficient in the target language. Nonetheless, research indicates that CLIL students outperform in drills and have a higher procedural competence in disciplines (Azpilicueta-Martínez & Lázaro-Ibarrola, 2023). Other studies have highlighted the beneficial impact of CLIL on vocabulary acquisition. Notably, Olsson and Sylvé (2015) provided evidence of differential L2 (Second Language) educational vocabulary acquisition among CLIL and non-CLIL learners. In addition, Y.-C. Huang (2020) demonstrated that CLIL encourages motivation, positive opinions toward languages, and improved confidence in learners. Fitriawati et al. (2023) also claim that CLIL-oriented reading tasks enhance students' understanding and vocabulary acquisition. Likewise, Kalay (2021) reinforced the current benefits of CLIL by revealing a high correlation between vocabulary and understanding of material output. Moreover, a meta-analysis of CLIL studies (Cimermanová, 2020) supports the notion that CLIL, providing more input in an international language, especially in areas such as meaningful experience and multimodal learning, is highly beneficial for vocabulary acquisition. However, further studies are required to analyze the comparative effects of content learning and language learning through CLIL.

In this case, there are vast research gaps in investigating the improvement of students' vocabulary building through the implementation of CLIL as a teaching approach. Recent findings suggest that CLIL has a positive influence on vocabulary development, enabling students to interact with a language in contextually meaningful and relevant ways. Nevertheless, there is a lack of studies on applicable and replicable CLIL activities for general subject areas, which hinders vocabulary retention. This research was conducted in Indonesia, where English is taught as a foreign language in most educational institutions. The study focused on Indonesian EFL students, emphasizing how CLIL can be effectively integrated into the national curriculum to enhance vocabulary learning. Considering Indonesia's multilingual context, the implementation of CLIL offers an innovative approach to integrating subject content with English instruction, thereby supporting the government's efforts to enhance English proficiency among learners. This study aims to develop a comprehensive portrait of potentially successful approaches to CLIL in foreign language education. The study has provided direction for effective methods in the context of teaching languages, with reference to previous research that provides data regarding the efficiency of CLIL activities, which can be applied in language teaching. Specifically, two research questions were formulated as follows:

1. Does the implementation of CLIL activities influence the students' vocabulary retention?
2. How is the students' perception regarding the implementation of CLIL activities in their EFL classes?

This research is expected to contribute to the development of scientific studies on the implementation of CLIL, facilitate innovation in language teaching, provide research opportunities, and serve as a basis for the development of integrated learning-facilitating resources.

Literature Review

Teaching Vocabulary

Vocabulary mastery is the most important aspect in learning English for students to support their speaking and writing abilities (Permana, 2020). Indonesian students' English proficiency, however, remains low, ranking 74th out of 100 countries on the 2020 English Competency Index, with a score of only 453. The use of grammar-intensive programs is one of the major problems (Uysal & Bardakci, 2014), as successful communication requires greater vocabulary knowledge. Previously, traditional translation-based approaches have failed to expand the vocabulary scale because, although they can aid recall, they cannot achieve implicit contextual learning. In particular, interactive and engaging characters, combined with visual aids, games, and music, are more effective in improving vocabulary retention and comprehension, especially among young learners (Cahyati & Madya, 2019). In addition, the researchers reveal that songs are effective in teaching vocabulary, as they help improve pronunciation and understanding of words (Ma'rifat, 2017;

Pavia et al., 2019). Hence, teachers need to employ creative and interactive teaching methods to foster vocabulary development and create an engaging learning environment.

Content Language Integrated Learning

CLIL represents an educational methodology that emphasizes the simultaneous acquisition of language skills and subject matter knowledge through instruction in a second or foreign language, commonly in English (D. Coyle et al., 2010; Pipit, 2018). Studies suggest that embedding language in subject-based instruction results in more effective language acquisition and academic success compared with learning the language as a separate subject (Kreijkes & Grooten, 2024; Lizarte Simón et al., 2024). Through CLIL, learners can consolidate previous knowledge through their native language and learn new content in English in areas like the sciences and mathematics (Navarro-Pablo & López Gándara, 2020). CLIL is structured through the 4Cs: Content, Communication, Cognition, and Culture, with a focus on critical thinking and problem-solving rather than memorization. A significant aspect of this naturalism is its motivation for students, as they need to understand the concepts presented to them in the target language. Furthermore, consistent use of time-based vocabulary aids in the learning process of the target language and supports both meaningful communication and cognitive development. In fact, CLIL allows knowledge to be actively constructed through collaboration, making learning both in and out of the classroom flexible (Aikawa et al., 2021; Cupchik, 2001; Hemmi & Banegas, 2021).

Content Language Integrated Learning for Young Learners

Usually have 7- to 12-year-old learners, this group of learners has characteristics like imaginative, energetic, and a lack of attention (Cahyati & Madya, 2019). Young learners' English instruction falls under the umbrella of the Merdeka Belajar scheme of learning, which is structured around six language skills which are presenting, writing, watching, speaking, reading, and listening (K. Baten et al., 2020). With a focus on effective communication across contexts, the CEFR encourages learners to acquire the necessary life skills (Hemmi & Banegas, 2021; Jäppinen, 2005). Halliday and Matthiessen (2013) proposes a genre-based teaching that reaps the systematically designed learning of a language, avoiding chaos and confusion through four major stages: Building Knowledge of the Fields (BKOF), Modelling of the Text (MOT), Joint Construction of the Text (JCOT), and Independent Construction of the Text (ICOT), which implies against any random sentences produced by a learner. Early English instructions may help kids improve their social and cognitive abilities, provide them access to a range of digital resources, and allow them to engage in meaningful relationships with one another (Sepyanda, 2017; Sukmawati & Pujiani, 2024). CLIL is considered a rather careful preparation activity for young learners because, during classroom practices, some effective teaching tools help maintain the students' classroom focus (Banegas et al., 2025; Y. Coyle & Roca de Larios, 2020; Novitskaya et al., 2025; Tai & Wei, 2024). In summary, CLIL is a complex approach that enhances both language and subject learning, fosters critical thinking, promotes cultural awareness, and equips learners for future academic and professional endeavors.

Content Language Integrated Learning Activities

A popular method is CLIL, an instructional methodology, utilized globally, where subject content is delivered in an international language. This enables students to learn subjects such as mathematics, science, and history through another language, thereby promoting both content learning of the subject and language acquisition (Bower, 2020; Bower et al., 2020; D. Coyle et al., 2010; Darvin et al., 2020). CLIL can be particularly effective in terms of vocabulary learning since learners typically can connect a new term to an academic context, which helps them retain the information (Dalton-Puffer et al., 2022). While CLIL offers numerous advantages, it presents certain difficulties. Educators must navigate the delicate equilibrium between imparting content and language, all while ensuring that students grasp both aspects effectively. By providing scaffolding, engaging students in differentiated instruction and peer collaboration, and using multimedia resources, students can navigate these barriers, and learning can take place in an integrated learning environment (Y. Coyle & Roca de Larios, 2020; Ismail & Al Allaq, 2019). Effective CLIL activities encourage students to use the target language meaningfully while engaging with subject content. Those CLIL activities can vary based on the students' needs such as *Project-Based Activities*, *Role Plays and Simulations*, *Content-Based Reading and Writing*, *Interactive Discussions*, *Multimedia and Digital CLIL Activities*, and *Content-Based Games and Quizzes* (D. Coyle et al., 2010). The role of CLIL is ever-growing as more and more institutions are adopting bilingual education to embrace cognitive development, student engagement, and better educational performance, thus reinforcing the strength of this teaching method (Y. Coyle & Roca de Larios, 2020; Dalton-Puffer et al., 2022).

Methodology

Research Design

This research employed a mixed-methods approach, incorporating both quantitative and qualitative data collection methods. To evaluate the effect of CLIL on vocabulary learning, a quantitative study with a quasi-experimental one-group pre- and post-test design was conducted among the participants of this research. The inability to randomly assign individuals is a common problem in educational research; therefore, a quasi-experimental technique was employed

(Idris, 2010; Mills & Gay, 2019), [Click or tap here to enter text.](#) as it reflects the authentic classroom context. It consists of a preliminary assessment, an intervention phase, and a post-assessment to evaluate variations (Creswell & Creswell, 2018). A survey using a structured questionnaire featuring five Likert-scale items was employed to explore the students' perceptions and engagement with CLIL activities, yielding descriptive qualitative insights.

Research Context and Participants

This research utilized a pre-and post-test quasi-experimental approach (Fraenkel et al., 2012), to investigate the effects of CLIL on the English vocabulary development of young learners. It involved 21 students (11 males, 10 females) from the sixth grade of one of the private primary schools in Malang Regency, East Java, Indonesia. All learners participated in a treatment that incorporated CLIL-based activities during their classes.

Data Collection, Instrument, and Procedure

Data were collected in order to address the study objectives by finding intended participants, getting their permission, and using a systematic approach to data collection (Creswell & Creswell, 2018). The experimental method consisted of a pre-and post-test procedure conducted in controlled classroom conditions to assess the impact of CLIL activities on students' vocabulary learning (Goris et al., 2019). This method was used to investigate the effectiveness of CLIL and to gather students' perspectives on its implementation. Measurable assessments, such as vocabulary pre-and post-tests, were included to determine students' understanding of the material pre- and post-instruction based on the CLIL-based instruction, and to provide objective data demonstrating its effects. The vocabulary test was developed by the researchers based on the syllabus and the content taught during the intervention. In addition, a qualitative survey using a closed-ended five-point five-Likert-scale questionnaire, consisting of five statements, was given to analyze their perceptions on CLIL activities to provide standardized, efficient, and accurate data collection (Taherdoost, 2022). To ensure the questionnaire's validity, two experts reviewed the items, followed by a pilot project that examined the items with a small group of students.

Procedure of data collection

Pre-treatment Process

The Pre-treatment process includes conducting a needs analysis to identify students' vocabulary knowledge and learning preferences, designing lesson plans that combine material and language goals, and selecting appropriate instructional resources. Additionally, students are introduced to the objectives and structure of CLIL activities to familiarize them with the integrated learning approach, ensuring they are engaged and motivated to participate in the subsequent treatment sessions.

Treatment Process

The researcher conducted five treatment sessions, each lasting 70 minutes, following a structured format: an opening, a pre-test, a material presentation, and a post-test, to ensure clarity and consistency in assessing students' vocabulary progress. In this phase, the researcher served as the teacher in the class to implement the intervention. The opening phase (10 minutes) involved greetings, reviewing objectives, and a warm-up activity to activate prior knowledge and set a positive tone. The pre-test phase (10 minutes) assessed students' baseline vocabulary knowledge using short questions or LKPD, aligned with CLIL themes like science, art, or daily activities. The material presentation phase (30 minutes) introduced new vocabulary through CLIL-based activities, such as group discussions, fostering active learning and engagement.



Figure 1. Treatment Process

Table 1. Lesson Plan Overview

Topic	Subject Goal	Linguistic goal	Activities
Where are your organs (Unit 1 A)	1. To identify and locate some internal organs. 2. To revise known parts of the body.	Bladder, brain, chest, heart, intestine, kidneys, liver, lungs	Sing A song
What do your organs do (Unit 1 B)	1. To understand the functions of the main body organs	Breathe, hold, move, process, pump, send,	Games
What can I do with My Body	1. To learn the location and main functions of the body's main muscles. 2. To revise known parts of the body.	store, support, blood, chemicals, oxygen	Give out the Activity sheets and ask the students to look at Activity 1
Animal, Plants and their habitats: Where do they live	1. To establish links between different animals, plants, and habitats.	Biceps, muscles, triceps	Sing A song and Ask Where they live. Why? What do they do? What do they eat?
What can you find around here	1. To observe conditions in a local habitat and record the animals seen. 2. To learn that animals are suited to their environments. 3. To understand the difference between vertebrates and invertebrates.	bumble bee, camel, cow, crab, dessert, duck, elephant, farm, fish, fox, frog, hen, horse, insect, kangaroo, land, monkey, mouse, owl, parrot, pig, plant, polar bear, pond, rainforest, sea, shark, sheep, snake, spider,	Display the pictures of insects and talk about those found in your area.

Post-Treatment Process

This phase involved administering a comprehensive vocabulary test covering all the materials taught during the treatment sessions. The session concluded with the post-test, which took approximately 10 minutes. To determine progress and retention of the new vocabulary, students completed another vocabulary, or LKPD, question that was designed in the same way as the pre-test. It was a test of students' retention and understanding of the vocabulary they had learned. In addition to the pilot training, the students participated in a structured feedback session, documenting their learning experience and suggesting which activities had been most beneficial and engaging. The feedback session was led by the teacher. The findings of the post-treatment assessment and the feedback were analyzed to evaluate the effect of the CLIL activities and identify several areas for improvement in their future implementations.



Figure 2. Post Treatment

Lastly, after becoming involved in post-treatment, the students were asked to complete a survey. The survey was distributed to the participants to answer the second research question. The survey items comprise five closed-ended questions designed to explore students' perceptions of the implementation of CLIL activities in their class.

Analyzing the Data

Processing and interpreting data involves a series of stages: familiarization and organization; coding and reduction; and interpretation and representation (Ary et al., 2009). The steps of data analysis in quantitative research are as follows:

1. Data preparation (Collection and examination of data)
2. Data interpretation to determine pre-test and post-test results is followed by data visualization, such as making graphs or bar charts to depict the distribution and comparison of pre-test and post-test data.
3. Statistical interpretation of data results to draw validation of findings (R. A. Baten et al., 2020)
4. Writing structured analysis results reports that include data preparation, data interpretation, and visualization of data results (Hemmi & Banegas, 2021).

Findings

The students' vocabulary learning was assessed using a pre-test and a post-test, following the application of different kinds of CLIL activities during the learning process. The analysis aimed to determine whether there was a notable enhancement in students' vocabulary following the intervention, utilizing the paired sample t-test methodology.

The Result of Implementing CLIL Activities in Increasing Students' Vocabulary

Five structured sessions (each 70 minutes) assessed vocabulary through pre-tests, CLIL-based activities, and post-tests. The outcomes of both assessments are presented in the table below.

Table 2. Paired Samples T-Test

Measure 1		Measure 2	W	z	df
Students Vocabulary Pretest	-	Students Vocabulary Posttest	97.000	-.643	.531

Note. Wilcoxon signed-rank test

Regarding the data in Table 2, the Wilcoxon signed-rank test was applied instead of the paired samples t-test because the assumption of normality was not met. Before conducting the analysis, the normality of the pre-test and post-test scores was checked using the Shapiro-Wilk test, which indicated that the data were not normally distributed ($p < 0.05$). After conducting the analysis using the Wilcoxon signed-rank test, it can be concluded that there is no significant difference between the students' vocabulary pre- and post-test scores ($p > 0.01$), with a significance level of 0.01%.

Table 3. Descriptive Plots Students Vocabulary Pretest - Students Vocabulary Posttest

	N	Mean	SD	SE	Coefficient of variation
Students Vocabulary Pretest	21	58.286	16.447	3.589	.282
Students Vocabulary Posttest	21	60.381	16.645	3.632	.276

Regarding Table 3 of the descriptive analysis above, it can be summarized that, based on the mean value, the posttest score is higher than the pretest score, but does not show a statistically significant difference. This means that student vocabulary tends to remain almost the same before and after receiving CLIL treatment. As shown in the raincloud plots below, some subjects experienced a slight increase, while others experienced a decrease in post-test scores.

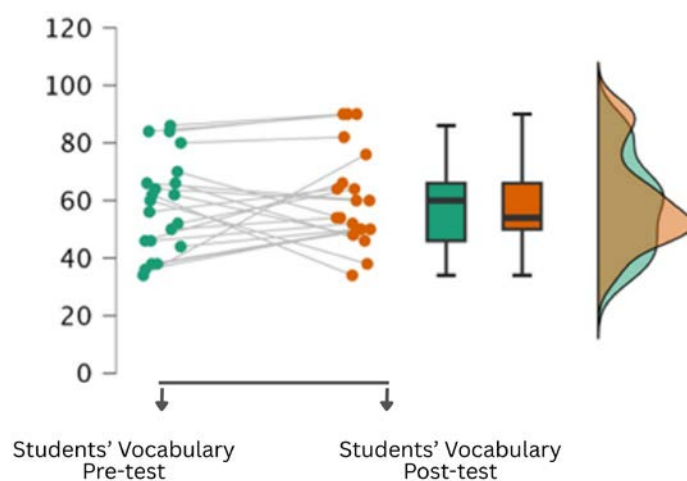


Figure 3. Raincloud Plots students' Vocabulary Pretest - Students' Vocabulary Posttest

Based on the Figure 3 raincloud plot, the results show an improvement in learners' vocabulary scores after the intervention, albeit with inter-individual variations. On the scatter plot, the green dots representing the pretest scores mostly moved upwards as they transitioned to the orange dots on the posttest, indicating an increase in scores for the

majority of students. However, some students did not experience significant changes, and some even experienced a slight decrease. The boxplot indicates that the median posttest score is higher than the pretest score, although the interquartile range (IQR) remains stable, suggesting that the variation in scores has not changed significantly. Meanwhile, the density plot shows a shift in the distribution of posttest scores towards higher values, but still has an even pattern, indicating that the intervention effect did not impact all students equally. Despite the descriptive increase in scores, the Wilcoxon test outcomes demonstrate that this disparity was not statistically significant ($p = .531$). This suggests that the increase in scores was likely due to chance and not a result of the intervention.

The Students' Perception regarding the Implementation of CLIL Activities in their Classes

The results show an overall positive view towards the implementation of CLIL activities. Students experience that CLIL serves as a method to enhance the engagement and relevance of the learning experience, making language study relevant to content, and helping them discover the real-world applications of language structures and terminology. CLIL provides exposure to English in authentic contexts, aiding the comprehension, retention, and application of new vocabulary and ideas. Moreover, individuals experience heightened motivation and confidence in acquiring the target language, specifically English vocabulary, as they engage with it in a more integrated and meaningful manner. However, some students may also express challenges, such as difficulty grasping complex content in a foreign language, which requires additional support from the teacher. This might be due to the students needing more time to comprehend the content, as they expected more explanation from the teacher. Overall, according to the students' perception, CLIL is viewed as a beneficial approach that enhances language skills and improves content comprehension, thereby enriching the educational experience for many students. The outcomes of both tests are displayed in the following table:

Table 3. Student Perception regarding the Implementation of CLIL activities in their Classes

Items	Response	N	%
1. CLIL activities raise my interest in English and science learning	SD	1	4
	D	0	0
	N	5	32
	A	13	52
	SA	2	12
2. CLIL activities enhance my motivation to understand the learning materials, both English and science.	SD	0	0
	D	2	8
	N	3	16
	A	14	64
	SA	2	12
3. CLIL activities help me understand English and science materials better.	SD	1	4
	D	1	4
	N	4	16
	A	11	44
	SA	4	32
4. I like the CLIL activity	SD	1	4
	D	0	0
	N	5	26
	A	6	29
	SA	9	37
5. I want to have more CLIL activities in the future	SD	4	12
	D	0	0
	N	2	6
	A	8	50
	SA	7	32

Note. SA: Strongly Agree; A: Agree; N: Neutral; D: Disagree; SD: Strongly Disagree

Table 3 presents the results of the participants' responses to the CLIL questionnaire, examining the students' perceptions regarding the implementation of CLIL activities in their classes. The statistical results of the participants' answers to the five closed questions are given in Table 3. Out of 21 students, 15 students (64%) thought that CLIL activities raise their interest in English and science learning, 16 students (78%) felt that CLIL activities enhance their motivation to understand the learning materials of both English and science, 15 (56%) felt that CLIL activities help them to understand English and science materials better, 15 students liked CLIL activities, and 15 (50%) felt that the program helped them understand English and science materials better. Fifteen students (50%) felt that I should incorporate more CLIL activities in the future. Overall, the participants believed that the CLIL activities technique effectively improved vocabulary.

Discussion

The present study explored whether students can effectively learn academic content (e.g., science) and a foreign language simultaneously, with satisfactory outcomes. The findings concluded that the CLIL method enables partial improvement in students' vocabulary, as evidenced by the outcomes of the pre- and post-tests with a five-meeting treatment.

Regarding the initial research question, which investigated whether CLIL activities could enhance learners' vocabulary, particularly during CLIL approach sessions, the findings indicated that the average scores on the post-test (Mean = 60.38) were higher than those on the pre-test (Mean = 58.28). This underscored the fact that learners performed better on the post-test after participating in CLIL classroom activities. It can be interpreted that students performed better on the post-test after having a CLIL classroom. The findings of this study align with a wide range of earlier research regarding the enhancement of vocabulary ability (Reynaert et al., 2019). This study presents a distinct approach compared to earlier research, as it emphasizes enhancing vocabulary through the development of listening competence.

The implementation of CLIL activities varied, including the integration of vocabulary exercises within subject content and the use of games. For example, students were exposed to day-to-day activities where key terms are introduced and applied in real-time. The active use of language in these subject-specific contexts was shown to lead to deeper retention of vocabulary, as Dalton-Puffer et al. (2022), which was described as being in a more native language that is connected to the structures of things we do every day. Moreover, some studies, such as Y. Coyle and Roca de Larios (2020), indicate that, through these approaches, their opportunities for language exposure and practice were maximized, significantly improving, in ways that conventional approaches did not, their lexical knowledge. The results highlight the impact of CLIL activities in providing such immersive, language-rich environments that promote content learning and vocabulary acquisition.

Additionally, CLIL facilitates students' vocabulary acquisition by introducing new vocabulary elements through the subject matter content. For example, vocabulary for body parts must be matched to their names in connection to a topic, allowing for deeper language retention through experience. This is in line with Dalton-Puffer et al. (2022), and their discussion of meaningful contexts in the learning of vocabulary in a CLIL context. As another example (Y. Coyle & Roca de Larios, 2020) argue that CLIL provides the best exposure for students to the language and offers active learning strategies, such as collaborative discussions and project-based learning, that encourage students to use and retain new vocabulary. These findings mirror earlier studies, such as (Lasagabaster & Sierra, 2010), which emphasizes that CLIL's immersive approach surpasses traditional rote memorization techniques by embedding language learning within authentic, content-driven activities.

Regarding the second research question, this research investigated the students' perceptions of implementing CLIL activities in their classes. The result revealed that out of 21 students, 15 students (64%) thought that CLIL activities raised their interest in English and science learning. Meanwhile, 16 students (78%) felt that CLIL activities enhanced their motivation to understand the learning materials of both English and science, and 15 students (56%) felt that CLIL activities helped them understand English and science materials better. Additionally, 15 students enjoyed CLIL activities, and 15 (50%) felt that the program helped them better understand English and science materials. Lastly, 15 students (50%) felt that they should incorporate more CLIL activities in the future.

The results showed that students perceived CLIL activities as a highly effective method for improving their vocabulary acquisition. Students reported that vocabulary learning integrated into subject-specific tasks helped them better understand and remember new words. This is consistent with Dalton-Puffer et al. (2022) which states that when learners practice vocabulary in a meaningful context, they are better able to recall those words. The students' feedback is positive, indicating that combining subject matter with language learning facilitates the formation of vocabulary memories in a meaningful and sustainable way.

Given that students perceive CLIL activities as helpful to the vocabulary process, it is argued that these activities share a connection between language learning and meaningful input (primarily subject matter) in a way that integrates and reinforces usage. Many may share this perception similarly Dalton-Puffer et al. (2022) found that "when language is used within content-rich contexts, students learn and retain more vocabulary." Similarly, D. Coyle et al. (2010) students who are involved in tasks related to CLIL tend to develop an intrinsic desire to learn due to the link between language and practical usage in the real world. The results here are consistent with those of Lasagabaster and Sierra (2010), who reported that CLIL encourages active and autonomous learning, which fosters taking responsibility for language development within content-driven frameworks. Such similarities are a powerful indicator of the effectiveness of CLIL activities when it comes to vocabulary enhancement whilst maintaining a positive perception of a (target) language learning, which manifests as relevant and pertinent to their future.

These findings suggest that CLIL activities facilitate vocabulary learning to a greater extent than conventional methods, as they enable vocabulary to be learned in a contextualized manner. Task-based language learning through content not only motivates students but also enables them to gain a deeper understanding of vocabulary, allowing them to practice the new words they have learned in real-life situations. Similarly, interactive approaches have been shown to foster collaborative engagement with the content before (D. Coyle et al., 2010; Dalton-Puffer et al., 2022). However, there are

drawbacks, such as time constraints and students' various language ability levels, which may reduce CLIL's overall efficacy in vocabulary growth. Furthermore, the research was conducted in only one school environment, which limited the broad applicability of the outcomes. The long-term effects of CLIL on vocabulary retention and its flexibility across age groups or language skill levels might be investigated in future studies.

Conclusion

Based on the research conducted, two conclusions can be drawn. First, it can be concluded that using CLIL activities partly significant to increase the students' vocabulary. The pretest and posttest analysis results showed an increase in students' vocabulary after CLIL treatment. Thus, CLIL activities can effectively improve students' vocabulary. Through activities such as singing a song, playing games, and engaging in group discussions, students learn new terms and phrases in a real-world context, making vocabulary learning more effective and easier to understand and remember.

The second conclusion is that students highlight their positive perception of using CLIL activities. The survey results showed that participants felt that CLIL activities made the learning process more interesting and enhanced their learning motivation, and they expressed a desire for more CLIL activities in the future. This positive perception arises because CLIL activities involve various active learning methods, such as singing songs, playing games, and engaging in group discussions, that support a more profound understanding.

Recommendations

Teachers should be able to pay attention to interesting learning activities during the lesson, such as by implementing CLIL approach. In this study, it was found that students were more enthusiastic and interested in English lessons due to the activities provided by the researcher during the lessons. Teachers must be able to provide positive affirmations and engaging learning materials so that this lesson does not become intimidating for them, as it involves a foreign language. This can impact the tasks assigned to students, allowing them to perform them effectively. Students should be actively engaged in class and not rely solely on the teacher as their primary source of learning. They must be able to think creatively according to their needs, as this can improve their performance in tasks they will undertake later.

Furthermore, these suggestions are intended for future researchers. First, future researchers are expected to spend more time conducting similar research to broaden the scope of the study and improve their ability to learn English learning vocabulary. Additionally, researchers should conduct further studies with a larger sample of students to determine whether the comparison remains effective after multiple treatments. Researchers can also conduct intensive research to ensure that the results are reliable, valid, and accountable.

Limitations

This study has several weaknesses. First, the researcher encountered difficulties in guiding and motivating students to learn using the CLIL method. Thus, in some learning processes, students attempted to imitate the examples the researcher provided in front of the class by simply changing the words. Additionally, the limited time in class also might impact the learning.

Ethics Statements

In this study, ethical considerations were thoroughly addressed to guarantee that participant rights, privacy, and well-being were prioritized throughout the research process. The researcher systematically facilitated access, obtained informed consent, and ensured anonymity. Formal approval to conduct the study was obtained from the university's rector. Informed consent was gathered from all participants, who were provided with detailed information regarding the study's aims, procedures, and their rights. Confidentiality was upheld by assigning codes to participants, storing data securely, and utilizing responses solely for research purposes.

Generative AI Statement

As the author of this work, I utilized ChatGPT-4 to enhance the clarity and accuracy of the English language in this research paper. After using this AI tool, I carefully reviewed and verified the final version of the manuscript. I take full responsibility for the content and accuracy of this published work.

Authorship Contribution Statement

Sari: Conceptualization (supporting), methodology (lead), writing – original draft (supporting), review, (supporting) editing (supporting). Khoiriyah: Conceptualization (lead), methodology (supporting), writing – original draft (lead), review (lead), editing (lead).

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