

Exploring Indonesian Students' Socio-Affective Perceptions towards CLIL (Content and Language Integrated Learning) in a High School Science Class

Rosiana¹, Mil'ul Hana², Titis Sulistyowati³, Diah Kurniati⁴

Universitas Muria Kudus, Indonesia

rosiana.adilatief01@gmail.com¹, hanabiel13@gmail.com², titis.sulistyowati@umk.ac.id³,
diah.kurniati@umk.ac.id⁴

Abstract: CLIL (Content and Language Integrated Learning) is an innovative teaching approach that combines content subject with language learning. It is essential to explore students' socio-affective perceptions of the implementation of this approach because these perceptions can influence their learning experience and outcome. This study aims to explore students' socio-affective perceptions of 11th grade senior high school students at a Senior High School (Madrasah Aliyah) in Kudus regarding the use of CLIL in science class. In this study, researchers used qualitative methods with open-ended questionnaires and semi-structured interviews. The participants were 27 students in the 11th grade in Kudus. The results show that students' attitudes in CLIL-based Science class, such as confidence, comfort, motivation, and participation, are influenced by their English proficiency. Those with higher English proficiency tend to feel more confident, motivated, and participative in the classroom, while those with lower proficiency have more challenges and participate less. Despite these challenges, most students had a positive perception of the use of the CLIL approach. They believe that it helps enhance their English skills, significantly improving their vocabulary. As one of the few studies that specifically focuses on students' socio-affective perceptions of CLIL, this study provides new insights into the emotional, motivational, and social impacts of CLIL in science classes. These findings have implications for improving CLIL strategies to better support students with diverse levels of English proficiency. They help create supportive learning atmosphere, enhancing students' engagement and performance.

Keywords: CLIL (Content and Language Integrated Learning), perception, socio-affective factors

INTRODUCTION

Content and Language Integrated Learning (CLIL) has been popular in education as an approach that integrates content subjects and language learning (Amor et al., 2023). Its main objective is to enhance students' language proficiency and understanding of subject-specific knowledge (Banegas, 2020). CLIL employs a target language as the medium of instruction for content subjects such as arts, science, mathematics, or history. This approach focuses on dual outcomes where students not only learn about the subject matter but also acquire language skills. By combining these elements, it offers a more holistic educational experience. Teachers design lesson plans that integrate language objectives alongside content objectives, making language learning contextual and meaningful. By using language in meaningful context, this approach can boost students' linguistic and academic growth (Amor et al., 2023).

According to Amengual-Pizarro and Prieto-Arranz (2015), the socio-affective factors in CLIL (Content and Language Integrated Learning) have an impact that is utterly significant. The most common socio-affective factors are motivation, communication, fear and participation (Macías & Judit, 2020). Factors like motivation and self-esteem play a big role in determining the students' achievement in a CLIL environment. Motivation enables the students to engage with the language more efficiently as well as the content. If the students have high self-esteem, then are willing to take risks and participate actively, which fosters new language

learning. However, anxiety and low self-esteem can hinder language learning and content learning (Amengual-Pizarro and Prieto-Arranz, 2015). Therefore, it is needed to create the supportive socio-affective learning environment for the successful implementation of CLIL among and for the students. This will enable all the students to do well in school and in other aspects as well.

In Indonesia, some primary and secondary schools have implemented CLIL approach, commonly recognized as bilingual or international schools (Khoiriyah, 2021; Daraini et al., 2021). These schools use both English and Indonesian in teaching content subjects, such as science, arts or others. One of the schools that has implemented this approach is one of Madrasah in Kudus, which has been using it for years in its bilingual classes, particularly in science. However, the school has not deeply understood how the students feel and experience about it in more detail. Therefore, it is important to explore the students' socio-affective perceptions so that CLIL program can be implemented effectively. Socio-affective factors, such as confidence, motivation, and anxiety, play a significant role in how students participate and engage with and benefit from bilingual education. Without this understanding, schools may struggle in designing supportive learning atmosphere that meets students' diverse needs.

Previous studies have largely emphasized teachers' perception of CLIL. For instance, studies by Amor et al. (2023), Waloyo et al., (2021) and Anggraini et al. (2023) found that teachers had positive views about CLIL. They observed that this approach enhanced students' language proficiency and facilitated deeper content understanding simultaneously. Similarly, Campillo et al. (2019), Villamarín-Guevara & Fajardo-Dack (2022) and Szczesniak & Luna (2022) also found that there is the dual benefits of CLIL in improving language skills and content knowledge, noting its potential in preparing students for future global challenges.

While some studies have investigated the students' perceptions, their focus has been predominantly on cognitive and academic outcomes. Zaroni (2021), Hidayat (2024) and Filice, (2021) noted that students viewed CLIL as positive approach due to its dual learning benefits. Nevertheless, Macías & Judit (2020) found that students with lower English proficiency struggled to understand the content subject, leading to less participation and engagement in CLIL class. Previous studies reported that although students had positive effects from CLIL. However students with lower English proficiency struggled to understand the instruction and the content subjects which effected the motivation, engagement, participation and learning achievement. Based on this research gap, this study brings the issues of socio-affective learning to evaluate how students to work in groups and how some emotional aspects influence their learning. This study highlighted the importance of examining socio-affective factors, such as emotional aspects (confidence and anxiety), fear of using the language and its impact, motivation to participate in class, and peer collaboration. These factors give a holistic understanding of the emotional and social responses of students (Virdia, 2022). Despite its significance, research on socio-affective factors in CLIL remains limited. Further exploration is needed to better understand students' challenges and design the effective strategies to support their diverse needs to create an effective learning environment.

This study aims to investigate the socio-affective perceptions of students in the XI_5 bilingual class in Kudus regarding the implementation of CLIL in science class. By understanding these perceptions, it helps create supportive learning atmosphere that enhance students' engagement and performance. This study informs better teacher training, policy-making, and education quality, making a significant contribution to the field. This will make

CLIL program can be more effective and better fulfill the diverse needs of students with different levels of English proficiency.

RESEARCH METHOD

This study employed a qualitative descriptive approach to explore senior high school students' socio-affective perceptions of Content and Language Integrated Learning (CLIL) in science class. The choice of this approach was triggered by the need to gain a deeper understanding of students' experiences and perceptions (DeJaeghere et al., 2020). It allows for the collection of complete and detailed data that can capture the intricacies of emotions and social interactions, which are central to socio-affective perceptions. The case study design was chosen to explore a specific program, event, activity, or process in detail, often focusing on a single person or group (Cresswell et al., 2003). It was selected to provide an in-depth exploration of a specific program (CLIL) within its real-life context. It is effective for understanding complex phenomena within the natural settings, allowing for a comprehensive understanding of the emotional, motivational and social impacts on students. By focusing on a single group (senior high school students) and a specific subject (science), the study aims to uncover detailed insights that might be missed by broader, more generalized research methods. This study was conducted from October until December 2024.

The participants were selected purposefully based on the specific needs of the study, ensuring they represent individuals engaged in CLIL-based science instruction. This purposeful sampling strategy is consistent with qualitative research practices, allowing for a focused exploration of the target population (Daraini et al., 2021). Specifically, the participants were 27 students in 11th grade of XI-5 at a state of Islamic senior high school in Kudus that used English and Indonesian for science learning. This school was chosen because of its consistency in applying bilingual instruction during learning. The sample size was chosen based on iterative data collection and analysis, ensuring that the researchers gathered sufficient detailed information to fully understand the socio-affective perceptions of CLIL in science class. According to Morse (2000), sample size in qualitative research should be flexible and determined by the study's goals and the richness of the data obtained.

The researchers collected the data by using open-ended questionnaires and semi-structured interviews. The questionnaire, consisting of eight questions in Indonesian, was distributed to twenty-seven students via a class WhatsApp group using a Google form survey. To ensure the validity and reliability of the instruments, expert validation was conducted by involving two language experts to review. This process is crucial because it involves having specialists to review and assess the instruments, ensuring that they are appropriate for the study (DeJaeghere et al., 2020) and to ensure the classification of the socio-affective factors. Then, the researchers interpreted the data that had been collected. To gather more in-depth insight, then the researcher conducted face-to-face semi-structured interviews with three students. These were undertaken in Indonesian to make them feel more relaxed and able to provide more detailed explanations. Each interview consisted of six questions and took about fifteen to twenty minutes for each student. The instruments for both the questionnaires and semi-structured interviews were adapted and modified from Macías & Judit (2020). Interviews were conducted in order to gather detailed and comprehensive information (Phellas et al., 2011).

Then, the data collected from open-ended questionnaires and interviews were analyzed by the steps suggested by Cresswell et al. (2003) to conduct descriptive analysis. The process begins with preparing the data, reading and understanding the collected data, classifying it,

interpreting the findings, and drawing conclusions. It allows the researchers to effectively interpret the key characteristics of the issue (Kabir, S.M.A., 2024)

RESULTS AND DISCUSSION

The collected data were analyzed, organized and presented based on four key socio-affective factors: 1). Emotional Aspects: Confidence and Anxiety, 2). Fear of Using the Language and Its Impact, 3). Motivation in Class Participation, 4). Peer Collaboration. After analyzing 27 responses, the students' perceptions are presented in the following table.

Table 1. The students' responses to the open-ended questionnaire

Aspects	Key Findings	Percentage
Emotional Aspects: Confidence and Anxiety	1. Some students view the CLIL approach as positive and exciting for improving English and content subject	40.7%
	Others felt neutral or even negative due to difficulties in understanding the content subject	59.3%
	2. Students had higher confidence in CLIL-based Science class	44.5%
Fear of Using the Language and Its Impact	Students were less confident	55.5%
	3. Students feared using English, they admitted it is easier to understand science or communicate in Indonesian.	74.1%
	Students did not have problems in using English in Science class	25.9%
Motivation in Class Participation	4. Students felt that language barriers caused discomfort, reluctance, or even fear.	92.6%
	5. Students were motivated in participating CLIL-based Science class in English.	40.7%
	Students had a lack of interest and motivation because of language barriers	59.3%
Peer Collaboration	6. Students admitted that the CLIL approach could gradually enrich their English vocabularies.	92.6%
	Students did not provide an answer	7.4%
	7. Students agreed that peer collaboration helped them feel comfortable in discussing and understanding content. They often relied on peers to translate and simplify explanations in Indonesian which helped reduce the language barrier	96.3%
Suggestion	Students did not provide answers	3.7%
	8. Students suggested using more visual aids, discussion in groups with peers, as	92.6%

well as the use of Indonesian more often to provide clearer explanations and support engagement	7.4%
Others did not give any suggestion	

Emotional Aspects: Confidence and Anxiety

In this aspect, the researchers asked about students' perceptions, their comfort and confidence when learning through this approach. There are two questions, the first is “what is your view on the CLIL approach in Science class? The results showed that students had mixed feelings about the CLIL approach in their science class. On one hand, 40.7% of participants said that the approach was positive and exciting. This suggests that they appreciate the benefits of learning both English and science. This finding aligns with the previous study conducted by Daraini et al., (2021), revealing that students' perceptions of CLIL approach was positive due to its benefits. It offers significant advantages for students in enhancing a second language proficiency and understanding the content subject. This finding was also supported by Filice (2021), showing that students' perceptions of the CLIL implementation were also positive. It not only improved both language skills and content knowledge, but also being beneficial for their future career. However, 59.3% felt neutral or negative about this approach. These students struggled in understanding the content subject delivered in English, making it hard for them to engage with the material fully. This is in line with the result in Zanoni (2021), which found that students had negative opinion about CLIL implementation as it was difficult to understand the CLIL lesson fully. As a result, they did not perceive any improvement in their language skills or content knowledge.

The second is “How confident are you in CLIL-based science classes?”. According to Burton & Plats (2006), self-confidence is a significant aspect of personality. It influences both how one thinks and feels, as well as one's efforts to take on the challenges they face. It involves the ability to take appropriate and effective action in any situation, however challenging it may be.

Based on the result in Table 1, it is shown that 44.5% had higher confidence level during the implementation of CLIL program. They stated that English is easy, so they can understand the subject knowledge well although it was delivered in English. In this study, students with this capability are categorized as students with “higher English proficiency level”. This result is in line with the study conducted by Hidayat (2024), which found that students with higher capability in English, such as understanding the content subject and communicating in English without worry, exhibited greater confidence and motivation in learning. While 55.5% participants were less confident. Their low confidence is due to their limited English skills. In this study, students with this capability are categorized as students with “lower English proficiency level” which can hinder effective learning in CLIL-based science class. Hidayat (2024) also stated that when CLIL is used with students who have weak English skills, they tend to have less confidence and more difficult to understand the content subject delivered in English, leading to demotivation in learning. It aligns with the result in by Akbari & Sahibzada (2020) which found that students' self-confidence impacted the learning effectiveness. This underscores the importance of building a supportive environment that boosts their confidence.

From these findings, it can be seen that the effectiveness of CLIL improves both language learning and content understanding simultaneously. This results in different outcomes where students with higher English proficiency level earn the advantages while others, find it difficult. This finding also strengthens the outcome of Hidayat's (2024) study which claimed

that the students within the higher English proficiency level were more confident and motivated in their learning. Nonetheless, it expands the discussion by paying attention to the issue of adjustment with low English proficient students.

In addition, the study of Akbari & Sahibzada (2020) puts forward the significance of self-confidence in learning effectiveness, making clear the need to create a suitable environment where students confidence is allowed to grow. These findings provide additional support by showing that students who are not good at English language and have confidence often tend to suffer more in the CLIL based science classes. Hence, it becomes important for teachers to design interventions which meet these students' needs. One such program is helping students with limited English proficiency with, for example, extra English lessons or English tutorials. Furthermore, it is necessary to provide training to teachers in the proper application of the CLIL model and in addressing the socio-affective needs of the learners.

Fear of Using the Language and Its Impact

There are two questions in this aspect, and the first is, “Do you feel afraid to use English in science class? Please explain!” Based on the result shown in Table 1, it was found that 74.1% of students feared using English. They perceived that understanding both subject content in English is difficult. It was easier to understand the subject or communicate in Indonesian. Furthermore, they were afraid to ask questions in CLIL class as they feared making mistakes when using English. They perceived that understanding content subject in English is difficult. On the other hand, 25.9% of students did not have problems using English in Science class. They could understand the lesson better and apprehended that they were comfortable using English.

It reflects the diverse levels of language proficiency among the students. Most of the students preferred using their mother tongue for this subject, indicating that the cognitive load of learning in English was relatively high. They reported struggling with understanding content due to the limited language proficiency. Banegas et al., (2020) stated that students' English proficiency is highlighted as an issue when implementing the CLIL approach, which is essential for making teaching and learning process learning effective. In addition, the students' fear of using English can hinder their ability to engage with this approach. Helali & Alsobie (2023) suggest that sometimes it is beneficial to use the mother tongue in CLIL-based Science class, as it can lead to a better understanding of the subject content.

The second question is, “Do language barriers cause discomfort and hesitation in asking or answering questions in English during science classes?”. It was found that 92,6% of students basically felt uncomfortable in participating in class due to the language barriers. In contrast, 7.4 % of students did not provide an answer. This result is in line with the study conducted by Skinnari (2020), indicating that there is a significant challenge in the use of CLIL, particularly language barriers that can create a stressful learning atmosphere, emphasizing the need for strategies to solve this problem. Anggraini et al.,(2023) also found that one of the key issues that needs attention is language skills. Students with prior English proficiency might participate better, whereas those without such proficiency would discover it challenging to understand the content subject and follow instructions. To help the students better understand the instructions, the teacher should occasionally simplify the instructions.

It can be inferred that there are roles of language as a medium of instruction in CLIL by bringing to light the significance of language ability in learners' learning processes. First, the student's anxiety and discomfort of speaking English in Science classes reveals the necessity to

create some approaches which foster language development in CLIL. These theoretical assumptions are also supported by Banegas et al., (2020) and Helali & Alsobie (2023) who also point out the favorable consequences of language ability on the implementation of CLIL. Moreover, there is the great impact on teachers. Teachers should also be taught how to identify the different levels of language skills of the learners. The training activities may also be targeted at enabling them to help and protect learners by creating fewer threatening environments where students feel comfortable and confident using the English language

Motivation in Class Participation

There are two questions in this aspect, and the first is, “Are you motivated to participate in CLIL-based science class in English?”. It was found that 40.7% of students were motivated to participate in CLIL-based Science class. They believed that they could enhance their language capability and subject content simultaneously after learning through the CLIL approach. It aligns with the findings of some studies, revealing that this approach could help enrich both language skills and content knowledge (Campillo et al., 2019; Villamarín-Guevara & Fajardo-Dack, 2022; Szczesniak & Luna, 2022). However, 59.3% of students had a lack of interest and motivation due to language barriers. This result aligns with Skinnari (2020), who stated that the language barrier was a significant challenge in the CLIL approach for both teacher and students. English capability can shape students’ motivation. If their English capability is higher, they are more motivated to learn through the CLIL approach. If their English capability is lower, they lack interest and motivation (Huang, 2020; Virdia, 2022). Furthermore, as stated by Rosi et al., (2023), students’ motivation towards the subject seems to be a key factor in the effectiveness of CLIL.

The second question is “Does the CLIL approach gradually enrich your English vocabulary?”. The study found that 92.6% of students admitted that the CLIL approach could gradually enrich their English vocabularies. Most of the students responded that there are long-term benefits of the CLIL approach, especially in improving vocabularies. This result is consistent with Waloyo et al., (2021) and Guntur et al., (2023), who stated that CLIL approach had a positive impact on students’ English skills, subject knowledge, and attitude toward learning. Although most of the students found it challenging, they acknowledged that this approach helps enhance their vocabulary acquisition.

It can be interpreted that the CLIL approach is effective depending on students' language skills and language motivation. These findings also fit with the existing literature about the critical success factor of language proficiency in CLIL (Skinnari, 2020) and extend the conversation on issues by enhancing the role of motivation as stated by Rosi et al., (2023). As a result, this means that in practice, the teachers need to pay attention to different levels of language proficiency and its motivation among students. These set of requirements for these educators entails professional development training that will prepare teachers on how to help learners with language anxiety and create positive classroom environment. Students with language deficiency can benefit from language-based activities and classes offered. More so, some use of the first language can be tolerated to achieve better understanding and engagement to the content subject

Peer Collaboration

There is one question in this aspect “Does peer collaboration help you feel comfortable discussing and understanding content?”. The result showed that 96.3% of students perceived

that peer collaboration made them feel comfortable in discussing and understanding content subject. While 3.7% did not provide answers. The result is consistent with the study conducted by Ramadan Elbaoui Shaddad & Jember (2024) that highlighted the significant role of peer collaboration in alleviating language difficulties and enhancing comprehension. This statement is also in line the study conducted by Villamarín-Guevara & Fajardo-Dack (2022), who states that collaborative work strategies can facilitate a greater learning dynamic in a CLIL classroom setting. The findings suggest that when students work together, they become more engaged in learning content subject and understand it better. Peer collaboration also enhances their communication skills. By fostering communication and collaboration, CLIL class becomes an active place of learning.

The results indicate that students can actively participate more when they are paired with other learners as it promotes communication skills. There is better involvement in the content subject with the help of peers and thus the CLIL class becomes a purposeful learning environment. This confirms the complementary theoretical background which advocates for collaborative learning in order to improve the language skills together with subject understanding. The outcome of the study contributes to the existing body of literature as it proved that peer collaboration is one of the elements that determines the effectiveness of CLIL programs. In practice, this means that teachers have to plan for collaborative activities in learning and teaching processes in a CLIL context. Some professional development courses should prepare teachers on how to organize peer collaboration effectively for the benefit of all learners.

Suggestions for Improvement

This aspect asks for the students' suggestions related to CLIL-based Science class. It is stated that 92.6% of students suggested that teachers should use Indonesian more frequently to provide more precise explanations and use visual aids to make the content easier to understand. This feedback shows that teacher need to use her mother tongue to help the students comprehend the content subject while also developing their language skills gradually (Helali & Alsobie, 2023)

Students' socio-affective perceptions of the CLIL approach in science classes show that those who feel English is difficult find it is still challenging due to language barriers, which affect their comprehension, confidence, and motivation. They prefer using Indonesian during the class activity. On the other hand, students who are comfortable with English view that CLIL gives them some benefits, such as increasing both language skills and subject knowledge, feeling more confident as well as motivated in learning. Fulfilling these diverse needs with flexible language use, visual aids, and collaborative learning makes the CLIL approach more effective and inclusive. Villamarín-Guevara & Fajardo-Dack, (2022) also stated that peer collaboration, learning tools, and better adapted materials can create a dynamic and active learning environment.

These results reveal that the success of the CLIL approach, in theory, depends on the students' language skills and socio-affective needs. This is consistent with the ideas of Villamarín-Guevara & Fajardo-Dack (2022) who assert that students' readiness and collaborative efforts should be prioritized in CLIL classes. These findings broaden the conversation by showing how the use of the students' first language and visual materials is essential for students who are not proficient in English. Thus, educators should develop strategies that allow for the switching of code between Indonesian and English because learners

would be more comprehensible and engaged in class English discussions. The use of the first language combined with the use of different instructional aids is one which must be implemented by educators and policy makers. The evidence from the study suggests a need for such policy changes. Teachers' trainings need to be holistic so that educators can use visual materials and collaborative techniques that all students can benefit from through the CLIL strategy. In doing so, teachers can ensure that all students are provided with a positive and welcoming school setting where they can break language barriers and improve their learning on the language.

After analyzing and discussing the data from the open-ended questionnaires, the researchers conducted face-to-face semi-structured interviews to gain more insights, consisting of six questions. The researchers interviewed with three students in the 11th grade of XI-5 at MAN 2 Kudus. The responses to interviews are categorized into four key socio-affective factors; 1). Emotional Aspects: Confidence and Anxiety, 2). Fear of Using the Language and Its Impact, 3). Motivation in Class Participation, and 4). Peer Collaboration.

Emotional Aspects: Confidence and Anxiety

In this aspect, one question was posed to the students: "Are you comfortable and confident in learning? Why?". It was found that they were comfortable and confident in CLIL-based science class. They admitted that this approach could enhance both English skills and content knowledge. This result aligns with the study conducted by Guntur et al., (2023) and Filice (2021), emphasizing the dual benefits of CLIL both in target language and content knowledge. These studies underscore that this approach not only improves English skills but also boosts students' confidence and engagement in learning, leading to more immersive and effective learning atmosphere. These factors foster a positive perception of the students in the CLIL classes, which can be attributed to a combination of a supportive environment and active learning through the employed learning strategies. Students who can speak English better tend to acquire the language without related anxiety; as a result, the students' receptiveness is enhanced towards learning. These perceptions may not apply to all students, particularly the ones with relatively lower English proficiency at the beginning level. This requires particular attention to differentiated instruction. Effective preferred practice is required to maintain this kind of partial student engagement. The results point to the necessity of continuous development and maintenance so that all students benefit from CLIL.

Fear of Using the Language and Its Impact

There are two questions in this aspect, and the first is, "Do you feel afraid to use English in science class?" It revealed that two students feared using English in CLIL class because it is easier to understand the content subject or communicate in Indonesian. Meanwhile, one student felt that she had no problem in using English in Science class. This challenge aligns with Skinnari (2020), who found that the language barrier is one of the challenges that should be addressed in bilingual teaching.

The second question is, "Have you faced challenges in learning science in English? Please explain". It was found that the students had challenges in CLIL class related to language barriers. A student sometimes had trouble understanding the sentences, while others struggled with translating technical terms in science. They had to translate them to understand the meaning. The study conducted by Banegas & del Pozo Beamud (2022) also found that the language barrier is one of the issues that needs to be considered in CLIL class as it makes the teaching and learning process more effective.

The lack of competency in the language actively hinders learners' self-esteem and understanding in CLIL classrooms. This implies English language anxiety and content comprehension problems that require appropriate attention. Employing visually-rich instructional materials, helping learners with glossaries, and at times allowing them to use their first language can provide effective solutions. Most importantly, these approaches can foster a more positive and inclusive classroom environment to all students in CLIL.

Motivation in Class Participation

One question was posed to them, "Does the CLIL method affect your motivation in participating the CLIL-based Science class? Why?". It is shown that CLIL approach positively influences a student' motivation in participating in CLIL class. She felt more challenged and enthusiastic about mastering both science knowledge and English. At the same time, two students had a lack of motivation due to the language barriers. According to Rosi et al. (2023), a lack of motivation towards learning presents a particular challenge in the CLIL approach. A low level of motivation can hinder students from engaging in the learning process fully. It also affects attitude toward learning, making it difficult in to understand the content subject in a bilingual educational setting.

The mixed impact of student motivation in the CLIL approach illustrates the intricate relationship between the language and subject matter. For the CLIL motivated student, the respondent was able to enjoy a subject because of the enrichment dual learning experience provided to them. This also supports the idea that moderately demanding tasks can enhance motivation because learners have a sense of achievement and progress in their studies. On the contrary, the two respondents who were low in motivation due to insufficient language ability highlight an important challenge: the level of language skill can promote or constrain participation in CLIL classes. The learners' language proficiency has a direct bearing on their cognitive engagement and, if poorly managed, can lead to frustration and disengagement.

Peer Collaboration

One question in this aspect is, "Does peer collaboration help you feel comfortable discussing and understanding content?" The results showed three students felt more comfortable when working with their friends. Peer collaboration made the learning process more engaging. When faced with difficulties, two students asked for help from their friends and teacher, while another student relied on the teacher for clarification. It indicates that discussion is a key for improving understanding of the content knowledge and enhancing the English skills. This finding aligns with studies from Ramadan Elbaoui Shaddad & Jember (2024) and Villamarín-Guevara & Fajardo-Dack (2022), who stated that peer collaboration could effectively reduce anxiety and improve speaking skill as students feel relaxed when discussing with their peers using English.

Peer collaboration emphasizes the importance of interactive learning techniques in CLIL classes, as it helps boost the comfort and engagement of students. Such interactions help reduce anxiety because students know that there is no judgement in such sessions. These interactions also support social constructivist theories on cognitive development and learning as they place great emphasis on social interactions. In addition, the dependence on peers and teachers for clarification suggests that these students do have a balanced way of learning. Peer support deepens the collaborative culture of the classroom while guidance from the teacher makes sure that a student's attention is related to accurate and meaningful information within and outside the classroom

Suggestion for improvement

Students were posed one question in this aspect: “What are your suggestions regarding the CLIL method?” It was found that students recommended some modifications in implementing of CLIL in science class. They suggested teacher to use a more balanced mix of languages and more visual aids to help them understand the content subject easily. This finding was supported by Wang (2023), who stated that by using balanced language, encouraging collaboration, and incorporating multimodal resources, CLIL class can become more supportive and inclusive. These strategies ensure that students, regardless of their language competence or learning style, can engage in their learning.

The observations made by students underscore an important feature of CLIL method: the ability to be flexible when it comes to the students learning. Teachers who use a balanced mix of languages can ensure that all students regardless of their language proficiency are able to keep up with and understand the topic. This strategy can help alleviate cognitive strain and facilitate learning. Visual aids are fundamental in enhancing understanding especially for students that are linguistically challenged. This aid allows them to contextualize what they are learning and therefore fill the comprehension void as well as complex concepts. Equally, establishing a collaborative peer interaction environment can help alleviate the negative impacts of anxiety as well as develop the confidence needed to communicate in English. Through cooperative learning peers are able to engage with each other and assist in the learning process which makes it more enjoyable and less frightening.

From this research, the researchers conclude that most students felt their attitude in class was influenced by their English proficiency which impacted their confidence, comfort, and motivation. Students with lower English capability found challenges in CLIL class, while those with higher English capability perceived it beneficial. By understanding these perceptions, educators can address these diverse needs through some approaches, such as flexible language use, visual aids, and collaborative learning, which make CLIL approach more effective.

CONCLUSION

Based on the aim of the study, which is to explore students' socio-affective perceptions of the CLIL method in science class, it was found that most students felt their attitude in class is influenced by their English proficiency. Language barriers affected their confidence, comfort, and motivation. Students with lower English proficiency found the approach was difficult and preferred using Indonesian to better understand the subject or to communicate in CLIL class, leading to less participation. On the other hand, those with higher English proficiency perceived the CLIL approach was beneficial as it improved their confidence, motivation, English skills and science knowledge. Despite the challenges, most students admitted that the CLIL method helped enhance their English skills, especially vocabulary. To meet the students' diverse needs, the researchers suggest teacher to mix the languages (Indonesian and English) based on the students' needs, incorporate more visual aids, and promote peer collaboration to make learning more effective. While this study highlighted essential factors such as confidence, motivation, and the impact of language barriers. It is essential to note the limitations. For instance, it does not provide detailed strategies to address challenges related to these factors. Additionally, the small sample size might constrain the generalizability of the findings. Thus, future research should focus on identifying and testing specific strategies to help students overcome language barriers, improve their confidence, enhance their motivation, and create more engaging learning atmosphere. Furthermore, exploring larger and more diverse samples would provide a deeper

understanding of the socio-affective perceptions of CLIL in various contexts, leading to more effective educational practices.

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