



CHALLENGES AND SOLUTIONS IN IMPLEMENTING CLIL: TEACHERS' PERSPECTIVES FROM PRIMARY EDUCATION

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ABSTRACT

This study uses a qualitative approach with the aim of understanding the phenomenon of challenges and solutions in the implementation of CLIL (Content and Language Integrated Learning) in Elementary education in depth through the perspective of participants. Data were collected through in-depth interviews, classroom observations, and documentation involving CLIL classes at Suantou Elementary School, Chiayi County, Taiwan. Data analysis was conducted thematically with the stages of data reduction, data presentation, and drawing conclusions. The results of the study indicate that teachers face obstacles in the aspect of linguistic competence, while from a pedagogical perspective they are able to present innovative strategies such as code-switching, the use of digital media, project-based learning, and collaboration between teachers. Student responses showed high motivation when contextual, interactive, and bilingual learning, although there were still obstacles when English was fully used. This study contributes to theoretical, practical, and policy implications, particularly regarding improving CLIL teacher competence, supporting student motivation, and innovation in learning strategies. In addition, this study provides new insights into CLIL implementation in Elementary schools that are relevant in the context of Challenges and Solutions in CLIL Implementation: Teachers' Perspectives from Elementary Education.

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1. INTRODUCTION

Content and Language Integrated Learning (CLIL) has been widely praised in academic literature as a learning approach capable of simultaneously integrating language skills and content knowledge. CLIL theory emphasizes that students can acquire dual competencies: foreign language proficiency and subject matter understanding. However, social facts at Suantou Elementary School, Chiayi County, demonstrate a gap between theoretical expectations and practice. Teachers face constraints such as limited resources, a lack of CLIL-specific pedagogical training, and differences in language abilities among students. This raises the question: why is an approach that theoretically promises positive results ineffective in the local context? Part of the reason is that CLIL requires curriculum adaptations that are not fully accommodated by local education policies, as well as limited support from the school community. Thus, the gap between theory and practice at the school is a crucial

issue that underlies the need for further research into the challenges and solutions to CLIL implementation from the perspective of elementary education teachers.

Several previous studies have demonstrated the effectiveness of CLIL in improving students' language skills and understanding of academic concepts. For example, a study by Coyle, Hood, & confirmed that CLIL can foster cross-cultural communication skills and strengthen learning motivation. Other studies in East Asia, such as those conducted by Lin (Wang, 2024), indicate that teachers face methodological barriers in implementing CLIL, particularly related to limited teaching materials and pedagogical competencies. However, these studies generally focus on secondary and higher education contexts and rarely highlight the conditions of primary education in small schools like Suantou Elementary School. This study aims to fill this gap by highlighting the direct experiences of primary school teachers in implementing CLIL in a primary education setting. In this way, this study not only replicates previous findings but also enriches academic discourse with a more specific context and is applicable to the reality of primary education in Taiwan.

The novelty of this study lies in its focus on the perspectives of elementary school teachers in CLIL implementation at Suantou Elementary School. Most CLIL literature focuses on student outcomes or the learning strategies used, while the reflective aspects of teachers as policy implementers are relatively underexplored (Chien, 2024). By placing teachers as the main subjects of research, this study seeks to explore the real challenges they face, ranging from methodological constraints, language limitations, to curriculum suitability. Furthermore, this study emphasizes practical solutions proposed by teachers based on field experiences, thus providing concrete input for the development of educational policies and teacher training programs. Another novelty is the locality approach—the Elementary school context in Taiwan, particularly in Eastern Taiwan, like Chiayi, will exhibit unique CLIL dynamics that differ from those in European countries. Therefore, this study offers a new perspective that is both relevant and practical for policymakers and academics in evaluating the sustainability of CLIL implementation at the elementary level (Taddei et al., 2025).

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The tentative answer to this research question is that the main challenges to implementing CLIL in primary schools are not only technical, such as limited materials or teachers' language skills, but also systemic (Chien, 2024), namely related to institutional support, curriculum, and parental involvement. The argument underlying this view is that CLIL success cannot be measured solely by individual teacher readiness, but rather by the synergy of various interrelated educational factors. Evidence from previous research shows that CLIL is more effective when implemented with strong policy support, the availability of learning resources, and ongoing teacher professional development programs. Therefore, the hypothesis of this research is that teachers have practical solutions that can bridge the gap between theory and reality on the ground. By testing this argument, the research is expected to make a tangible contribution to strengthening CLIL practice in primary schools, particularly by formulating strategies based on teachers' experiences that are more appropriate to local needs.

2. RESEARCH METHODS

This research uses a qualitative approach with a case study type [1] [2]. A qualitative approach was chosen because this study aims to explore in depth the experiences, challenges, and solutions experienced by teachers in implementing CLIL at the Elementary education level. The case study type is considered appropriate because the research is focused on a specific context, namely Suantou Elementary School, Chiayi County, Taiwan. The choice of location was based on the consideration that this school is one of the elementary schools in Taiwan that actively implements a CLIL-based bilingual program, but in practice still faces various obstacles that are interesting to study. Thus, this study is expected to provide a comprehensive picture of the reality of CLIL implementation in the field while producing relevant findings for similar elementary education contexts in Taiwan and other countries.

Data collection techniques in this study were conducted through in-depth interviews, direct observation, and documentation. In-depth interviews were conducted with teachers directly involved in CLIL implementation to obtain information about their experiences, challenges faced, and the solutions they developed. Classroom observations were conducted to observe the CLIL learning process, interactions between teachers and students, and the pedagogical strategies used. Meanwhile, documentation was obtained from school documents, such as lesson plans, the bilingual curriculum, teacher meeting notes, and teaching materials used in CLIL classes. The combination of these three techniques aims to obtain richer, more valid, and triangulated data, thus increasing the credibility of the research results [3].

The data analysis for this study was conducted using the interactive analysis model developed by Miles and Huberman. The analysis process includes three main stages: data reduction, data presentation, and conclusion drawing or verification. Data reduction involves selecting, simplifying, and focusing data relevant to the research questions. The reduced data is then presented in descriptive narratives, tables, or matrices to facilitate interpretation. The final stage is drawing tentative conclusions that are continuously verified to reveal patterns, themes, and relationships between challenges and solutions to CLIL implementation from the perspective of elementary school teachers [4].

3. RESULT AND ANALYSIS

Teacher Competence in CLIL Implementation

Based on observations at Suantou Elementary School, researchers found variations in teacher competency when implementing CLIL in the classroom. The data obtained are presented in the following table.

Table 1. Observation in CLIL class at Suantou Elementary School

Data	Description	Interpretation
1.	The teacher uses English and Mandarin alternately to explain science material.	Teachers have bilingual skills, but limited English vocabulary makes them often revert to their mother tongue.
2.	Students find it easier to understand instructions when teachers use mixed language (code-switching).	This strategy helps smooth learning, but does not fully comply with CLIL principles which emphasize the target language.
3.	Teachers still rely on traditional textbooks that are not fully CLIL-based.	The teaching materials have not been well integrated, so that CLIL implementation is partial.
4.	Teachers demonstrate creativity by adding images, videos, and interactive activities.	The limitations of formal materials are covered by teacher improvisation to maintain student interest.

From this data, it can be concluded that teachers at this school have attempted to integrate CLIL, but limited English language skills and teaching materials are the main obstacles. Observations also indicate positive potential through teacher creativity in adapting learning media [5].

In-depth interviews with three CLIL teachers at Suantou Elementary School provided a more detailed overview of their competencies. One teacher stated: "I can explain the lesson content well in Mandarin, but when it comes to using English, I often feel less confident and worried that students won't understand".

This statement indicates linguistic limitations that impact teacher confidence. Another teacher added that limited time to prepare CLIL materials was a major obstacle: "The textbooks aren't suitable, so I have to prepare my own materials. It takes a lot of time and sometimes the results aren't optimal."

The interview results indicate that teachers' pedagogical competence is quite good, particularly in classroom management and material delivery. However, linguistic competence remains a significant challenge. The interpretation of these interview findings is that CLIL teachers' competence at this school is more focused on pedagogical aspects than linguistic ones. Support for language training and the provision of more relevant teaching materials are urgently needed.

The analysis of documentation in the form of bilingual syllabi, lesson plans, and teaching materials shows that CLIL implementation at Suantou Elementary School is still in the adaptation stage. The school syllabus lists learning objectives that integrate content and language, but the implementation in teachers' lesson plans leans more toward content mastery with the addition of English vocabulary. For example, in science lessons, the lesson plan only includes key vocabulary like "photosynthesis," "energy," or "plant growth" without detailed guidance on language learning strategies. The teaching materials used by teachers were mostly photocopies of international textbooks that were then partially translated into Mandarin. Documentation also shows that the school does not yet have an official CLIL module, so teachers must improvise by adding notes, images, and videos from the internet. This documentation can be interpreted as indicating that the school is committed to implementing CLIL, but is still in the transition phase toward full integration, where teaching standards are not yet uniform and rely more on individual teacher initiative [6].



Figure 1. Teacher Competence in CLIL

Based on observations [7], interviews, and documentation, the researcher concluded that teacher competency in CLIL implementation at Suantou Elementary School still faces a significant gap between theoretical demands and field practice. From a pedagogical perspective, teachers demonstrate good classroom management skills, using strategies code-switching, and utilize creative media to support learning. However, limited linguistic competence prevents them from fully utilizing English as the primary language of instruction. This impacts the effectiveness of CLIL, where learning tends to emphasize content over language. On the other hand, institutional support in the form of modules, training, and policies is still limited, so CLIL implementation relies more on individual teacher efforts [8]. This analysis suggests that the most urgent solution is to improve teachers' language competence through intensive training, provide CLIL-based teaching materials aligned with the basic curriculum, and strengthen school policies to create a more consistent CLIL ecosystem. This way, teachers' competences can develop in a balanced manner, both in pedagogical and linguistic aspects, so that CLIL implementation in elementary schools can run more optimally [9].

Student Responses and Motivation in CLIL Learning

Observations in a CLIL class at Suantou Elementary School show that students' responses to learning vary according to their language proficiency level and learning style. The following observation data are summarized in the table:

Table 2. Observation in CLIL class at Suantou Elementary School

Data	Description	Interpretation
1	Grade 4 students showed enthusiasm when the teacher used visual media such as pictures and videos.	Visual learning increases motivation because it helps understanding concepts without having to rely entirely on language.
2	Some students are passive when the teacher explains science material in full English.	Limited vocabulary makes students feel difficult, so participation decreases.
3	Students are more active when teachers use strategies <i>code-switching</i> (Mandarin English mix)	This strategy provides a sense of security while encouraging student engagement.
4	Group activities such as science experiments make students more communicative.	Collaboration provides intrinsic motivation because students learn while interacting.

Observations can conclude that student motivation increases when CLIL learning involves interactive media and collaborative activities. However, the use of full English without support often reduces students' active responses [10]. Interviews with six students from grades 4 and 5 provided insight into their motivations for CLIL. One student said: "I enjoy learning science with pictures and experiments, but if the teacher speaks too much English, I get confused and become reluctant to ask questions".

This statement shows that student motivation is closely related to language comprehension. Another student said: "If the teacher uses Mandarin first and then English, I'm more confident in answering".

This shows that code-switching does not only do its aid comprehension, but it also boosts students' confidence. On the other hand, some students feel that CLIL makes them more interested in learning English: "I love learning new words, especially if I can use them in experiments. "The interpretation of these interviews is that students' motivation is dynamic: they tend to be motivated when supported by visual contexts, authentic activities, and language strategies appropriate to their ability level. Conversely, motivation decreases when CLIL overemphasizes the target language without adaptation.

Documentation in the form of student learning outcomes records, portfolios, and teacher evaluation reports showed patterns consistent with observation and interview data. Student portfolios showed that project-based assignments, such as simple experimental reports, had higher completion rates than assignments based on full English reading texts. Assignments involving group collaboration scored better on average because students helped each other understand the instructions [11]. Meanwhile, teacher evaluation records indicated that students often lost focus when the learning emphasized English theory without visual illustrations. Student reflection sheets also showed a positive trend: most students wrote that they felt "more courageous" in using new vocabulary when learning through play or conducting experiments. This suggests that student motivation increased significantly when CLIL was linked to contextual activities. This documentation suggests that student responses to CLIL are influenced by the learning design, with activity-based approaches being more effective than traditional text-based approaches [10].

Based on observations, interviews, and documentation, the researchers concluded that students' responses and motivation in CLIL learning at Suantou Elementary School were determined by the interaction between linguistic aspects, pedagogical strategies, and the context of learning activities. In general, students responded positively when CLIL learning was supported by visual media, experimental activities [12], and the use of dual language strategies (Mandarin-English) [10]. This suggests that students' motivation is further developed when they feel linguistically secure and actively engaged socially [13]. Conversely, the use of full English without contextual support reduces participation because students experience difficulties in understanding. This analysis suggests that CLIL at the elementary school level must be more flexible and adaptive to students' needs. Student motivation is influenced not only by their interest in learning the language, but also by their confidence and comfort in dealing with the material. Therefore, CLIL implementation needs to emphasize activity-based strategies, collaboration, and language scaffolding to maintain high student motivation and maintain positive responses in the long term[14].

Teacher Solution and Innovation Strategies in CLIL

Based on field observations accompanied by photo documentation at Suantou Elementary School show that teachers are implementing various innovative strategies to support CLIL learning. The first photo shows a teacher using a digital whiteboard to display an interactive image about an ecosystem. This data demonstrates efforts to utilize technology as a visualization tool. The second photo shows a teacher dividing students into small groups to conduct a simple experiment about plant growth. From this description, it can be interpreted that the teacher combines content-based learning with the use of English through real-life activities. Another photo shows a teacher posting colored vocabulary cards on the classroom wall used as a "language corner." This strategy aims to increase students' exposure to vocabulary without always having to use verbal explanations. The interpretation of the photo observation data is that the teacher is trying to create a more contextual and interactive learning environment, thereby minimizing language barriers through the use of visual media, experimental activities, and supporting a vocabulary-rich classroom environment.

Interviews with CLIL teachers at the school revealed the various strategies and innovations they developed. One teacher said: "I realize that my students' English skills are still limited, so I often make short videos with Mandarin subtitles so they can grasp the concepts more quickly."

This statement demonstrates teachers' innovation in utilizing digital technology as a learning medium. Another teacher added:"We try to create project-based activities, such as having students create posters about the water cycle using simple English. This way, they learn both content and language."

This illustrates an integrative strategy between content and language that is oriented towards tangible products. One teacher also expressed the importance of collaboration: "We often discuss with English teachers to align the material with science subjects."

From this interview data, it can be interpreted that the solutions taken by teachers are not only individual, but also collaborative, with the aim of covering students' linguistic limitations while maintaining the quality of content learning.

Documentation in the form of lesson plans, bilingual modules, and teacher reflection notes demonstrates the various strategies that have been designed. The lesson plans demonstrate the integration of project-based learning activities, such as writing simple experimental reports in English. The bilingual modules obtained from the school present science material with key vocabulary annotated in Mandarin. This demonstrates that teachers consciously use scaffolding to facilitate student understanding. Teacher reflection notes also indicate that strategies for using visual media, role-play, and language games are often effective in increasing student motivation. Other documentation, including student evaluation results, shows that project-based learning produces higher grades than traditional lecture methods. The interpretation of these documentation results is that the innovative strategies implemented by teachers contribute to increased student engagement, although challenges remain in the consistent use of English as the primary language of instruction.

Based on photo observations, interviews, and documentation, the researcher concluded that the teachers' solution and innovation strategies in implementing CLIL at Suantou Elementary School were adaptive, collaborative, and contextual. Adaptive because the teachers were able to adjust the methods to the students' linguistic abilities, for example through code-switching and visual media [15]. Collaborative because the teacher does not work alone, but communicates with English teachers and other content teachers to align learning. Contextual because the strategies used emphasize real-life experiences such as experiments, creative projects, and interactive games that are relevant to the world of elementary school children. This analysis shows that although language barriers between teachers and students remain a challenge, the innovations emerging from the teachers successfully bridged the gap. Project-based strategies, digital technology, and bilingual learning environments proved effective in increasing student engagement and maintaining a balance between content and language objectives. Thus, the teachers' innovations serve as practical solutions that can serve as models for CLIL implementation in other elementary schools with similar conditions [16].

Results

Discussions in the study at Suantou Elementary School indicate that teachers' competencies in CLIL implementations still face a gap between pedagogical and linguistic abilities. This aligns with research conducted [17] in Taiwanese elementary schools, which found that most teachers possess strong pedagogical skills in classroom management, but often lack confidence in using English consistently. The study also emphasized that teachers' limited English vocabulary and structure are major obstacles to implementing CLIL according to theoretical standards. This analysis demonstrates that linguistic competence issues are not unique to teachers at Suantou Elementary School but are a common phenomenon in Taiwanese elementary schools, indicating a systemic gap between CLIL implementations policies and teachers' preparedness in the field.

Compared with previous research, the findings at Suantou Elementary School emphasize the importance of institutional support in improving CLIL teachers' competencies [18] stated that ongoing bilingual teacher training programs can increase teachers' confidence in using English while strengthening integrative strategies in teaching content. This is relevant to the findings of the Suantou Elementary School study, where teachers who had participated in CLIL training demonstrated greater creativity in using visual media and code-switching to bridge the language gap of students. Thus, it can be concluded that the results of this study strengthen the findings of previous studies, while emphasizing that improving CLIL teacher competence depends not only on individual abilities, but also on structural support in the form of training, provision of teaching materials, and consistent school policies.

The researchers were very intensive in this study at Suantou Elementary School, showing that students' responses to CLIL tended to be positive when learning was supported by visual media, experimental activities, and strategies. Code-switching, while their motivation decreased when teachers used full English without support. This finding aligns with research by [19], who found that elementary school students in Taiwan were more motivated when CLIL learning was linked to contextual activities such as projects and language games. A study by [20] also confirmed that student motivation increased when teachers used language scaffolding, such as providing translations or bilingual keywords. This analysis shows that students' response patterns and motivation in CLIL are not only determined by their interest in learning a foreign language, but also by the support of pedagogical strategies that make them feel safe and able to follow the learning process without experiencing linguistic frustration.

Comparable to previous research, the results of the Suantou Elementary School study reinforce the finding that student motivation in CLIL is more developed when learning is interactive and collaborative. [21] emphasized that students' active involvement in group projects fosters intrinsic motivation, as they perceive English as not only a learning goal but also a communication tool for achieving tangible results. This aligns with observations at Suantou Elementary School, where students were more enthusiastic when conducting science experiments in groups using bilingual terms. Furthermore, [22] demonstrated that student motivation increases when teachers use technological media such as interactive videos, a strategy also found at Suantou Elementary School through the use of digital whiteboards. Thus, the results of this study not only support previous studies but also illustrate that the success of CLIL in motivating students is closely related to the balance between linguistic challenges and pedagogical support provided by teachers.

The results of research at Suantou Elementary School show that teachers implement various innovative strategies such as the use of digital media, code-switching, project-based learning, and interactive games to overcome students' linguistic barriers. These findings align with [23] research, which found that CLIL teachers in Taiwan were more successful when integrating content and language approaches through technology and hands-on, experiential activities. Similarly, Wu (2021) emphasized that teachers' innovations in designing bilingual classroom environments, such as posting thematic vocabulary words on classroom walls, effectively increased students' exposure to the target language. This analysis suggests that teachers' innovative strategies are

not simply a temporary response to student difficulties, but part of a systematic effort to bridge the gap between CLIL policy demands and students' language abilities at the elementary level.

Compared with previous research, the findings at Suantou Elementary School support the notion that teacher innovation is a critical factor in CLIL success. [24] stated that project-based learning encourages student engagement because they perceive English as a tool to achieve concrete goals, not simply something to be memorized. This is consistent with the findings at Suantou Elementary School, where simple projects such as bilingual science posters increased student motivation. Furthermore, Liu and Chou [24] emphasized that collaboration between teachers in designing CLIL materials is an important form of innovation that strengthens program sustainability. This finding is also reflected at Suantou Elementary School, where subject teachers collaborated with English teachers to develop science materials. Therefore, the findings of this study not only reinforce previous studies but also emphasize that teacher solution strategies and innovation are key to ensuring effective and contextual CLIL implementation in elementary schools.

4. CONCLUSION

Research conducted in the CLIL classrooms of Suantou Elementary School yielded three key interrelated findings. First, in terms of teacher competency, it was found that teachers possess adequate pedagogical skills in designing lessons, but still face limitations in linguistic aspects, particularly the consistent use of English [15]. Teachers rely on strategies such as code-switching and language scaffolding to bridge student understanding, although this indicates a gap between CLIL policy demands and teachers' abilities in the field. Second, regarding student responses and motivation, the results showed that students exhibit high motivation when learning is contextual, collaborative, and supported by visual media. Conversely, motivation decreases when teachers overemphasize English without additional explanatory support. Third, in terms of teacher solution strategies and innovation, it was found that teachers strive creatively by integrating digital technology, project-based activities, and interteacher collaboration to overcome students' linguistic barriers. Overall, these findings demonstrate that CLIL implementation in elementary schools can be successful if there is a balance between teacher competency, student motivation, and innovative, contextual and adaptive learning strategies. This study has several limitations that need to be considered. First, the research data is limited to one school, Suantou Elementary School, so the results cannot be generalized to all elementary education contexts in Taiwan. Second, language limitations in interviews with students and teachers, particularly the use of Mandarin and simple English, potentially affect the depth of the data obtained. Third, this study emphasizes qualitative observation aspects and therefore does not quantitatively measure students' language and content achievement levels. Therefore, further research is recommended to expand the study location to include several other elementary schools in Taiwan, and use a mixed methods approach to more comprehensive findings. Furthermore, ongoing training for CLIL teachers needs to be strengthened by school and government policies, particularly in improving linguistic competence and the use of educational technology. Another recommendation is the development of a more adaptive CLIL curriculum, taking into account the needs of elementary school students so that learning remains enjoyable, relevant, and encourages a balance between content and language mastery.

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