

Using CLIL to Develop Pre-Service Teachers' Readiness for EMI through a Classroom-Based Perspective

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Abstract

This classroom-based reflective article examines how Content and Language Integrated Learning (CLIL) can develop pre-service teachers' readiness for English-medium instruction (EMI) in a regional Thai university context. Drawing on the author's nine-and-a-half years of bilingual primary teaching and subsequent instruction of an English for Teaching course at Nakhon Ratchasima Rajabhat University (NRRU), the study integrates practical accounts with learner feedback from two groups. Primary-level data were collected from 57 former students who studied English, science, and mathematics through English in a CLIL-based program, while higher education data were gathered from course evaluations by 23 pre-service teachers. The findings reveal that CLIL-supported lessons promoted engagement, routine English use, and academic vocabulary retention among primary learners, although some found content learning in English challenging. At the university level, pre-service teachers reported high satisfaction with scaffolding, active

learning, and microteaching, leading to increased confidence and improved lesson design for EMI. The study highlights key challenges, such as aligning language and content objectives and sustaining motivation, while recommending CLIL as an effective strategy for bridging the policy-practice gap and advancing Sustainable Development Goal 4 on equitable education.

Keywords: CLIL, English-medium instruction, pre-service teachers, classroom-based reflection, SDG 4

Introduction

In recent years, English as a Medium of Instruction (EMI) has received growing attention within Thailand's teacher education sector, in line with regional integration, internationalization policies, and the national push for English proficiency. While many Thai universities have introduced EMI courses or programs, the challenge of preparing future teachers to deliver content effectively in English persists, particularly outside elite institutions (Suksakorn, 2020; Prabjandee & Fang, 2021). At Nakhon Ratchasima Rajabhat University (NRRU), where most pre-service teachers come from non-urban backgrounds, these challenges are compounded by limited access to EMI models, native-speaking mentors, or English-rich learning environments.

A promising pedagogical response to this challenge has been identified in Content and Language Integrated Learning (CLIL), a dual-focused approach that integrates subject content instruction with systematic language development (Coyle et al., 2010). Increasing recognition has been given to CLIL in Thai teacher education as a tool to enhance both content pedagogy and academic English use, particularly for English majors who may later be expected to teach non-English subjects such as science,

mathematics, or health in English-medium classrooms. Unlike traditional EMI, which may not support students' linguistic needs, CLIL is designed to scaffold both content learning and language development, making it more adaptable to diverse Thai classrooms (Charunsri & Sripicharn, 2023; Ruiz-Cecilia et al., 2023).

At NRRU, a course titled English for Teaching was introduced as a capacity-building platform to prepare pre-service teachers for real-world EMI contexts. The design of the course was informed by more than nine years of bilingual primary teaching experience in English, mathematics, and science. CLIL principles were adopted to train students in lesson planning, classroom English use, and content-language integration. This context is particularly significant because many graduates are expected to teach in rural or regular-track schools where parents cannot afford expensive English Programs (EP) and where equity of access is a concern aligned with Sustainable Development Goal 4 (SDG 4): Ensure inclusive and equitable quality education for all (UNESCO, 2017).

This article presents a classroom-based reflection on the application of CLIL principles within the English for Teaching course at NRRU. It examines how CLIL can be used to enhance the pedagogical readiness of pre-service teachers to teach non-English subjects through English, particularly in under-resourced Thai classrooms. The aim is to support EMI implementation and to promote educational equity by equipping future teachers with tools to make English-medium instruction accessible beyond elite bilingual programs.

Theoretical Framework and Related Literature

This section presents the theoretical underpinnings and key concepts relevant to the implementation of Content and Language Integrated Learning (CLIL) within teacher education in Thailand, particularly in the context of preparing pre-service teachers at Nakhon Ratchasima Rajabhat University (NRRU) for English-medium instruction (EMI). It begins by outlining the role of EMI in Thai education and its challenges, then introduces CLIL as a pedagogical response. The section concludes by linking CLIL implementation to Sustainable Development Goal 4 (SDG 4), emphasizing the potential of this approach to promote equitable access to quality education through English.

1. English as a Medium of Instruction (EMI) in Thai Teacher Education

English as a Medium of Instruction (EMI) refers to the use of English to teach academic subjects in countries where English is not the native language (Macaro, 2018). In Thailand, EMI has been adopted in various forms across educational levels, from basic education to higher education, particularly in bilingual programs (e.g., EP/MEP) and international curricula (Galloway et al., 2017; Suksakorn, 2020). The policy behind EMI is to enhance English proficiency and global competitiveness. However, the widespread adoption of EMI has also revealed significant disparities between students in English programs and those in regular programs, raising concerns about equitable access to high-quality education (Prabjandee & Nilpirom, 2022).

Global trends indicate that EMI is becoming a key feature of higher education systems worldwide. In European countries like Spain, Italy,

and the Netherlands, EMI is used in universities to prepare students for globalized workplaces (Lasagabaster, 2011; Macaro, 2018). These countries often combine EMI with a focus on content mastery to improve both academic knowledge and language proficiency. However, research shows that EMI implementation has been more successful in wealthier, urban-centered institutions, creating gaps in access for students in rural or under-resourced areas (Galloway et al., 2017; Wichairat, 2019).

In East Asia, countries like China, Japan, and South Korea have increasingly integrated EMI in response to the demand for international competitiveness and English proficiency. Yet, EMI faces challenges in these regions due to the limited English proficiency of students and the lack of adequately trained teachers to deliver content effectively in English (Galloway et al., 2017). These challenges are similar to those in Thailand, where rural areas and regional universities face additional barriers to EMI implementation due to a lack of exposure to English-rich environments and native-speaking mentors.

2. Content and Language Integrated Learning

Content and Language Integrated Learning (CLIL) offers a promising alternative to traditional EMI, focusing on the simultaneous development of language and content knowledge. As defined by Coyle et al. (2010), CLIL is a dual-focused educational approach that uses an additional language to teach both subject content and language. Unlike traditional EMI, which often prioritizes content delivery in English, CLIL explicitly integrates language development through content-based tasks, scaffolding, and purposeful interaction (Coyle et al., 2010).

Globally, CLIL has gained widespread recognition as a pedagogical approach that facilitates language learning in a more engaging and contextually relevant manner. In Europe, particularly in countries like Spain, Finland, and Estonia, CLIL has been successfully implemented in schools to teach subjects such as science, history, and geography through English (Mehisto et al., 2008). Studies have shown that CLIL not only enhances students' academic knowledge but also improves their language proficiency, cognitive skills, and intercultural awareness (Coyle et al., 2010). For example, in Finland, CLIL has been shown to positively impact both language acquisition and content learning, with students outperforming their peers in traditional language classes (Wichairat, 2019).

In contrast to the challenges faced by EMI in many non-native English-speaking countries, CLIL's dual focus on language and content makes it particularly suitable for contexts where students' English proficiency may be emerging. In Italy, CLIL is widely used in secondary education, with research indicating that it helps students develop a deeper understanding of academic content while simultaneously improving their language skills (Lasagabaster, 2011). Furthermore, the flexibility of CLIL allows for its adaptation in a variety of classroom settings, making it an ideal model for regions with diverse linguistic backgrounds, such as Thailand.

However, challenges persist in the implementation of CLIL, particularly in terms of teacher training. In countries like Thailand, there is a lack of systematic CLIL training in teacher preparation programs, particularly in regional universities (Prabjandee & Nilpirom, 2022). While many teachers are expected to deliver content in English, few are equipped with the necessary pedagogical tools to support both language development and

content mastery in EMI contexts (Charunsri & Sripicharn, 2023). This highlights the need for comprehensive teacher training programs that integrate CLIL into pre-service curricula.

3. CLIL in Thai Higher Education and Teacher Preparation

The adoption of CLIL in Thailand's higher education system is still in its early stages, but there are promising outcomes. Studies have shown that CLIL can enhance Thai students' academic English, content knowledge, and confidence when implemented effectively (Wichairat, 2019; Ruiz-Cecilia et al., 2023). Charunsri and Sripicharn (2023) conducted an intervention study with pre-service English teachers and found that CLIL training significantly improved their understanding of CLIL pedagogy, lesson design, and teaching confidence.

However, challenges remain in the widespread implementation of CLIL in teacher education. Pre-service teachers often struggle to integrate language objectives into content lessons and report low confidence in their English proficiency (Tachaiyaphum & Sukying, 2017). In many Thai universities, particularly in regional institutions like NRRU, there is limited exposure to CLIL-based teaching methods, resulting in gaps in teacher preparation for EMI (Prabjandee & Nilpirom, 2022).

4. Linking CLIL to SDG 4: Equity in Education

The integration of CLIL into teacher education aligns with global education goals, particularly Sustainable Development Goal 4 (SDG 4): Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (UNESCO, 2017). In Thailand, the disparity between urban and rural schools, particularly in access to EMI and English programs, has raised concerns about equity in education (Prabjandee &

Nilpirom, 2022). By equipping pre-service teachers with CLIL-based pedagogical tools, universities like NRRU can help reduce these inequities by enabling teachers to deliver content in English in mainstream classrooms, thereby making English-medium instruction more accessible to students from diverse backgrounds.

The inclusion of CLIL in teacher education programs at regional universities can serve as a mechanism for promoting SDG 4. By preparing teachers to teach both content and language in English, CLIL has the potential to democratize access to English-rich learning environments, benefiting students who may not otherwise have the opportunity to study in bilingual programs (Charunsri & Sripicharn, 2023; Ruiz-Cecilia et al., 2023).

Classroom-Based Reflection and Application of CLIL

1. Bilingual Primary Teaching Experience

The implementation of CLIL was first carried out during a nine-and-a-half-year period of teaching at a bilingual primary school in Thailand. In this context, English was employed as the medium of instruction across several subjects, including English, science, and mathematics. The immersive environment provided insights into how young learners interact with subject content delivered through a second language, particularly when supported by appropriate instructional strategies.

In science lessons, hands-on experiments were conducted using simplified English instructions to make abstract concepts more accessible. For example, the solar system was taught through a group quiz game in which students collaborated to answer true-or-false questions, justified their responses, and applied academic vocabulary such as orbit, planet, and

sunlight in full sentences. In this way, all four dimensions of the CLIL framework were integrated: Content (astronomy), Communication (explaining planetary motion), Cognition (analyzing and classifying), and Culture (relating to local beliefs about celestial phenomena).

In mathematics classes, visual aids and pair work were employed to support comprehension. During geometry lessons, students measured angles using protractors and articulated their reasoning in English. Sentence starters such as “This is an acute angle because...” (Student A, Interview, March 17, 2025) or “The measurement from the baseline is...” (Student A, Interview, March 17, 2025) were provided as scaffolds, enabling the development of both conceptual understanding and academic language use.

In English lessons, real-life communication scenarios such as small talk, role plays, and storytelling were incorporated. Learners engaged in conversations about weekend activities and created stories based on vocabulary themes. These communicative tasks prepared students for more structured reading and writing lessons while supporting their confidence in language production.

Overall, the long-term application of CLIL in this primary context demonstrated that it is not only feasible but also highly effective for young learners in mainstream, non-elite schools. With careful scaffolding and contextually relevant tasks, academic content was made accessible while communicative competence was simultaneously developed. These experiences later informed work in teacher education, where CLIL principles were adapted for pre-service teacher preparation.

2. Implementing CLIL in the English for Teaching Course at NRRU

Following the transition to higher education, CLIL principles were applied in a university-level course entitled English for Teaching, which was designed for pre-service English teachers. The course functioned as a bridge between language pedagogy and subject-matter instruction, intending to prepare student teachers to deliver content-based lessons in English across various disciplines, including science, health, and mathematics.

In the course, the fundamentals of CLIL were introduced and practiced through a sequence of assignments. Dual objectives (language and content) were set, appropriate materials were selected, and lesson plans fostering both subject comprehension and English use were designed. In one group project, a lesson on healthy eating was prepared using real food items, interactive visuals, and structured peer conversations to convey nutrition concepts in English.

To facilitate this process, tools such as content-language objective templates, sentence frames, and peer feedback protocols were provided. KWL (Know–Want to Know–Learned) charts were also employed to guide reflection on subject knowledge and language goals. Considerations of classroom diversity, differentiation, and inclusion were emphasized, aligning with both CLIL pedagogy and the principles of SDG 4: quality and equitable education.

Although initial anxiety regarding English fluency was reported by many students, repeated practice and collaborative lesson design helped to build confidence. By the conclusion of the course, most participants were able to deliver short, coherent, and engaging lessons in English. Through this process, professional identity was reshaped from being solely language

instructors to becoming subject educators who employ English as a tool for meaningful learning.

3. Learner Reflections and Observed Outcomes

The data analysis was conducted on two distinct learner groups: (1) primary school students who participated in a CLIL-based intensive program for English, science, and mathematics, and (2) pre-service teachers enrolled in the English for Teaching course at Nakhon Ratchasima Rajabhat University (NRRU). The feedback from these two groups offers a nuanced understanding of the effectiveness of CLIL in fostering readiness for English-medium instruction (EMI).

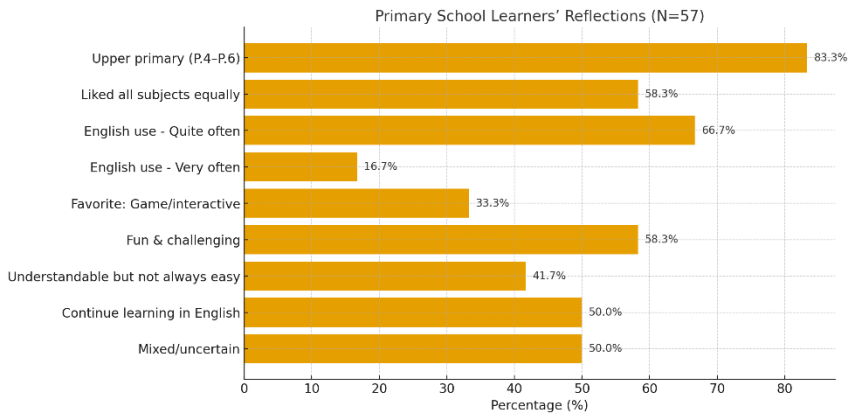


Figure 1

Primary School Learners' Reflections (N = 57)

Primary School Learners Analysis of Feedback. A total of 57 former primary school students, now in upper primary (P.4–P.6) or early secondary school, responded to a brief reflective questionnaire administered on August 2, 2025. The analysis of this data provides insights into their

engagement with CLIL-based instruction and its impact on their English proficiency and subject knowledge.

3.1 Content Engagement and Language Use

The majority (83.3%) of respondents indicated they had been in upper primary grades (P.4–P.6) during the CLIL instruction, with 58.3% of students reporting equal engagement across all subjects when taught in English. This suggests that CLIL promoted balanced subject engagement, allowing students to integrate learning in both English and content areas. Additionally, 66.7% of students reported using English “quite often”, and 16.7% reported using it “very often”, indicating that frequent language use was incorporated into daily learning activities.

Students noted recalling phrases like “I like grape” (Student A, Interview, August 2, 2025) and “solar system” (Student B, Interview, August 2, 2025), highlighting vocabulary retention, which was notably linked to game-based activities. Over 33% of students specifically cited games and interactive activities as their favorite aspects of lessons, demonstrating that CLIL’s active learning strategies increased their motivation to engage with content in English.

3.2 Challenges and Comprehension Issues

While 58.3% of students described the experience as “fun and challenging”, 41.7% noted that content learning in English was “understandable but not always easy”. This aligns with existing research on the challenges of learning complex content in a second language, where scaffolding strategies are critical (Coyle et al., 2010). The data suggest that while students enjoyed the content, some still found it difficult to fully grasp the academic subject matter in English without additional linguistic support.

3.3 Future Learning Intentions

The mixed responses regarding future learning intentions, with 50% expressing a desire to continue learning in English, suggest both positive engagement and the need for sustained linguistic support. This emphasizes the necessity of continued scaffolding in EMI contexts to maintain motivation and engagement over time (Lasagabaster, 2011).

Table 1

Teaching Evaluation Results from the English for Teaching Course (N = 23)

Evaluation Aspect	Mean Score (out of 5)	Interpretation
Clarity of lesson planning	4.85	Highest
Integration of teaching aids	4.75	Highest
Opportunities for active learning	4.80	Highest
Overall teaching evaluation	4.80	Highest

Table 1 reveals Data from the English for Teaching course at NRRU were collected through formal course evaluations from 23 pre-service teachers. The course aimed to prepare future teachers for EMI contexts by introducing them to CLIL principles, including lesson design, language use, and content-language integration.

3.4 Satisfaction with CLIL Implementation

The overall teaching evaluation score was 4.80 out of 5.00, reflecting the high satisfaction of students with the course's structure and teaching methods. This strong rating suggests that the CLIL-based approach, including microteaching, scaffolding, and active learning, was highly effective in preparing students for EMI. Students reported that the course helped them develop a deeper understanding of lesson planning and content delivery in English.

3.5 Impact on Confidence and Pedagogical Readiness

Open-ended responses from the pre-service teachers highlighted their increased confidence in delivering lessons in English. For example, students remarked, “I learned many new techniques that I can apply when teaching children” (Student D, Interview, August 2, 2025), and “The teaching methods were clear, engaging, and full of ideas I can use” (Student E, Interview, August 2, 2025). This suggests that CLIL’s emphasis on practical, real-world teaching techniques helped pre-service teachers feel more prepared to implement EMI in their future classrooms.

3.6 Areas of Improvement and Recommendations

Despite positive feedback, some students expressed concerns about the challenges of balancing language objectives with content knowledge. This reflects the findings of Charunsri and Sripicharn (2023), who noted that pre-service teachers often struggle with integrating language and content effectively. The feedback from the course evaluations suggests that additional training on balancing content and language objectives, along with further support for teachers English proficiency, may enhance the preparation for EMI.

3.7 Areas of Improvement and Recommendations

The data show that many students appreciated the real-world applicability of CLIL, noting that the activities helped them understand both content and pedagogy. This aligns with previous research suggesting that CLIL can provide transferable skills that bridge the gap between theory and practice in EMI (Wichairat, 2019). The positive reception from students demonstrates that CLIL not only enhances teaching skills but also contributes

to the development of transferable competencies, preparing teachers for the professional demands of EMI.

In conclusion, The learner feedback from both primary school students and pre-service teachers suggests that CLIL is an effective pedagogical approach for preparing teachers to engage in EMI contexts. While both groups demonstrated positive outcomes in terms of language use, content understanding, and motivation, challenges such as language proficiency and balancing content and language objectives remain. These findings align with the broader literature on CLIL and EMI, emphasizing the need for ongoing scaffolding and support for both students and teachers in multilingual education settings (Coyle et al., 2010; Charunsri & Sripicharn, 2023).

Key Challenges and Pedagogical Implications

The reflections from both primary and university-level learners demonstrate the potential of CLIL to enhance subject-specific learning through English, while also revealing persistent challenges that require attention in curriculum design and teacher preparation. These challenges have been consistently noted in broader studies on EMI and CLIL implementation in non-native English contexts (Macaro, 2018; Coyle et al., 2010).

1. Language proficiency and content integration

Although enjoyment and confidence were reported by many learners, difficulties were also noted by some at the primary level, who indicated that learning content in English was “understandable but not always easy”. Such responses are consistent with prior findings that limited English proficiency can hinder comprehension of subject content if scaffolding is not systematically embedded (Coyle et al., 2010; Tachaiyaphum & Sukying,

2017). Among pre-service teachers, an opposite challenge was frequently identified, as adequate English proficiency was present but difficulties were experienced in balancing linguistic objectives with disciplinary content (Charunsri & Sripicharn, 2023). The need for sustained practice in aligning language aims with subject knowledge has therefore been underscored.

2. Learner motivation and sustained engagement

High levels of engagement were observed in the primary classroom during interactive and game-based activities, supporting claims in the literature that CLIL is most effective when meaningful, context-rich learning is provided (Coyle et al., 2010). Nevertheless, mixed responses concerning future interest in EMI, where only half of learners expressed willingness to continue, suggest that novelty alone is insufficient to sustain long-term motivation. As noted in earlier studies, the development of resilience, learner autonomy, and growth mindset must be systematically supported if motivation is to be maintained in CLIL and EMI contexts (Lasagabaster, 2011).

3. Teacher readiness and pedagogical competence

Course evaluations from the English for Teaching class indicated that practical demonstrations, varied teaching techniques, and real-world applicability were highly valued by pre-service teachers. Satisfaction ratings at the “highest” level further suggest that experiential learning approaches, including microteaching and lesson simulations, were perceived as effective for EMI readiness (Wichairat, 2019). However, teacher preparation programs in Thailand have been frequently observed to lack systematic CLIL training, particularly within regional universities (Prabjandee & Nilpirom, 2022). In the absence of such structured support, pre-service teachers remain underprepared to implement CLIL with confidence and effectiveness.

4. Equity and access in EMI contexts

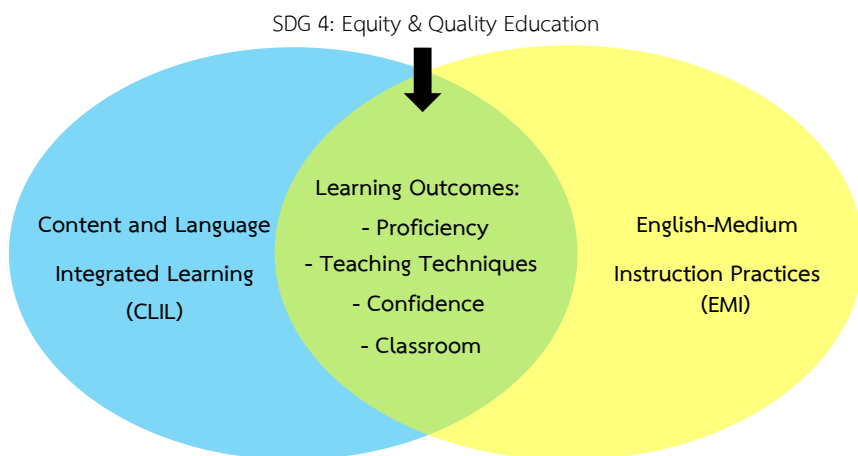
The embedding of CLIL in teacher education has been viewed as a strategy with strong potential to reduce inequities in access to English-rich learning environments. EMI and English Programs in Thailand continue to be concentrated in urban and resource-rich schools, leaving students in rural or mainstream tracks at a relative disadvantage (Prabjandee & Nilpirom, 2022; Galloway et al., 2017). By contrast, when pre-service teachers are equipped to integrate English into mainstream content teaching, access to EMI can be broadened across diverse school contexts. Such an approach has been aligned with Sustainable Development Goal 4 (SDG 4), which emphasizes inclusive and equitable quality education and lifelong learning opportunities for all (UNESCO, 2017).

5. Pedagogical implications

Several pedagogical implications can be drawn from these findings. First, structured CLIL modules should be systematically embedded in pre-service curricula, with explicit training provided in the 4Cs framework of Content, Communication, Cognition, and Culture (Coyle et al., 2010). In this way, conceptual understanding and practical application of CLIL can be developed in tandem. In addition, scaffolding strategies such as the use of visual aids, pre-teaching of vocabulary, and task-based learning activities should be consistently modeled and reinforced, as these approaches are essential for learners whose English proficiency is still developing (Mehisto et al., 2008).

Active learning methods, including games, inquiry-based projects, and group collaboration, should also be embedded in instruction, as these have been shown to maintain motivation and to support higher-

order thinking (Lasagabaster, 2011). Moreover, reflective practice opportunities should be systematically incorporated, so that pre-service teachers are guided to evaluate and refine their lesson plans according to the needs of diverse learners (Charunsri & Sripicharn, 2023). Finally, partnerships between universities and local schools should be fostered, enabling authentic practicum experiences in which CLIL strategies can be applied in real EMI classrooms. Such experiences are likely to enhance readiness for the professional demands of teaching (Ruiz-Cecilia, 2023).



Framework 1

Integrating CLIL and Pre-service Teachers' EMI to Enhance SDG 4

By addressing these challenges through the recommended pedagogical measures, CLIL within Thai teacher education can be positioned as an instructional innovation and a pathway toward more equitable access to English-medium content learning. This approach establishes CLIL as both a practical methodology and a policy-relevant strategy that contributes to long-term educational equity in Thailand.

Conclusion and Recommendations

It has been highlighted in this study that Content and Language Integrated Learning (CLIL) serves as a valuable pedagogical framework for preparing pre-service teachers to engage in English-medium instruction (EMI). Through classroom-based reflections at both the primary and university levels, evidence has been provided that CLIL supports the development of content knowledge and language proficiency, while also fostering higher-order thinking skills and intercultural awareness (Coyle et al., 2010).

At the primary level, opportunities for integrated learning across mathematics, science, and English were created through CLIL, and enthusiasm together with improved confidence was reported by learners. Nevertheless, comprehension challenges arising from limited English proficiency were also observed. At the university level, positive outcomes were associated with the English for Teaching course, in which CLIL-based strategies such as microteaching, scaffolding, and active learning were applied. As a result, greater competence in lesson design, content delivery in English, and reflective teaching practice was demonstrated by pre-service teachers.

The integration of CLIL into teacher preparation has been identified as carrying implications beyond pedagogy. The inequities created by the concentration of EMI and English Programs in urban and resource-rich schools (Prabjandee & Nilpirom, 2022) can be addressed by equipping pre-service teachers at regional universities with CLIL tools, thereby extending the benefits of EMI to mainstream and rural classrooms. In this respect, CLIL functions not only as a teaching methodology but also as a mechanism contributing to Sustainable Development Goal 4 (SDG 4), which emphasizes

inclusive and equitable quality education for all learners (UNESCO, 2017).

Several recommendations can be drawn from the findings. First, the systematic embedding of CLIL modules into pre-service curricula has been recommended, with structured opportunities provided for lesson design and classroom delivery within the 4Cs framework of Content, Communication, Cognition, and Culture (Coyle et al., 2010). Second, the expansion of experiential components such as reflective practice, microteaching, and school-based practicum has been proposed to further strengthen teacher readiness for EMI.

In conclusion, CLIL has been recognized as offering a practical, equity-oriented approach to bridging the gap between EMI policy and classroom practice. Its systematic adoption within teacher education in Thailand would enable pre-service teachers to deliver English-medium content instruction across diverse contexts, reduce disparities between elite and mainstream programs, and contribute meaningfully to the global agenda of equitable and quality education.

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