

Bilingual education in Taiwan: Analyzing the current practice and teachers' and students' perceptions in bilingual experimental classes

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Abstract

This study investigates the implementation and stakeholder perceptions of bilingual experimental classes under Taiwan's Bilingual Nation 2030 policy, which aims to enhance English proficiency and global competitiveness. Despite policy support, schools face persistent challenges, including teacher shortages, unclear curriculum guidelines, and unequal resource distribution. Drawing on surveys and in-depth interviews with one mathematics teacher and 14 tenth-grade students from a junior high school in Kaohsiung, the study explores classroom practices, learning outcomes, and implementation barriers. Findings show that 71% of students expressed satisfaction with the program, citing improvements in English listening, comprehension, and communication skills, as well as increased subject engagement and international awareness. However, students noted limited interaction with foreign teachers and inconsistent adherence to the 50% English instruction target. The teacher reported increased workload, diverse student language abilities, and insufficient teaching materials as major obstacles. Collaboration with foreign teachers was hindered by mismatched subject expertise and scheduling constraints. The study highlights the need for enhanced teacher training, clearer curricular goals, and stronger mechanisms for integrating foreign educators. It also calls for equity-focused measures to prevent bilingual programs from widening academic gaps. These findings offer actionable insights for refining Taiwan's bilingual education policy and supporting its sustainable implementation.

Keywords: Taiwan Bilingual education, bilingual experimental classes, Bilingual Nation 2030 Policy, content and language integrated learning, CLIL, teacher and student perceptions

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1. Introduction

1.1 Research Motivation

In 2018, the Taiwanese government introduced the “Bilingual 2030” policy with the ambitious aim of enhancing citizens’ English proficiency and global competitiveness (National Development Council et al., 2021). As globalization intensifies, the ability to function effectively in a bilingual environment has become a key educational goal. This policy reflects a broader national commitment to equipping future generations with the linguistic and cultural competencies necessary for participation in an increasingly interconnected world. Bilingual education, particularly through Content and Language Integrated Learning (CLIL), has been widely adopted in experimental classes across Taiwan. These initiatives seek to integrate academic content with English language instruction to foster both subject mastery and language proficiency. However, the rapid promotion of bilingual experimental classes has revealed several challenges, including a shortage of trained bilingual teachers, lack of standardized curriculum guidelines, insufficient resource allocation, and mixed perceptions among teachers and students.

In response to the “Bilingual 2030” policy blueprint launched by Taiwan’s Executive Yuan in 2018, various municipalities, including Taipei, New Taipei, and Tainan, began piloting CLIL-based bilingual education programs as early as 2017. These programs aimed to establish bilingual experimental classes at primary and secondary school levels, allowing students to learn both academic content and English simultaneously (Huang & Tsou, 2023). As Ministry of Education plan for bilingual education (2018), the primary intention behind establishing bilingual experimental classes is to move beyond treating English as a standalone subject. Instead, English is embedded within content subjects to develop language proficiency and subject knowledge in an integrated way. This approach is intended to cultivate students' global competitiveness by enhancing their ability to use English naturally in academic and everyday contexts. To support this initiative, the Ministry of Education has provided financial subsidies to help schools recruit foreign teachers, offer professional development for local teachers, and improve classroom facilities.

Nevertheless, schools continue to face numerous implementation challenges. A significant issue is the shortage of qualified bilingual teachers—those who are proficient in both subject content and English instruction—making it difficult to ensure consistent teaching quality. Moreover, there is a lack of unified and concrete curriculum and assessment guidelines, leaving schools to independently design and adjust programs, which can lead to anxiety among educators and even result in program discontinuation. For example, some high schools ceased offering bilingual classes after just one year. Additional obstacles include administrative burdens, unequal distribution of teaching resources, and difficulty for both teachers and students to adapt to the bilingual learning environment.

Despite the government's investment and policy support, the implementation of bilingual experimental classes remains inconsistent. Some schools have even discontinued these programs after only one year, citing issues such as teacher burnout, unclear pedagogical goals, and difficulties in student adaptation. Moreover, while many students express satisfaction with the idea of bilingual education, they also report challenges such as the scarcity of qualified foreign teachers and the widening of academic gaps among students with different language backgrounds. Given this context, there is a pressing need to examine how bilingual education is currently practiced in Taiwan and to understand the real experiences of those most directly involved: the teachers and students. This study aims to bridge the gap between policy expectations and classroom realities by providing an in-depth analysis of the strategies, outcomes, and perceptions related to bilingual experimental classes.

1.2 Research Background

In 2018, Taiwan launched the “Bilingual 2030” policy with the primary goal of enhancing national English proficiency and boosting international competitiveness. According to the Executive Yuan’s development plan (2023), the government has invested substantial resources to meet these goals: by 2024, all English classes in elementary and junior high schools are to be taught entirely in English, supported by 300 foreign teachers. By 2030, high school English courses will also adopt full English instruction, and one-third of schools will implement bilingual curriculum models. To realize this vision, Taiwan’s education sector has actively introduced the Content and Language Integrated Learning (CLIL) approach, which promotes teaching subject content through a second language to improve both academic understanding and language proficiency (Yang, 2014; Luo, 2022). While CLIL has shown success in Western contexts, its application in Asian educational systems—especially in Taiwan—is still experimental (Lee, 2024). Challenges remain in areas such as teacher preparation, curriculum design, assessment mechanisms, and access to appropriate teaching materials (Luo, 2024; Lee, 2024).

Studies show that many teachers lack a deep understanding of CLIL, leading to inconsistencies in its implementation. Some classrooms adopt full English immersion, while others use a mixed bilingual approach, resulting in uneven teaching outcomes. Researchers also highlight the crucial role of administrative support and school-based Professional Learning Communities (PLCs) in successful policy execution, but these areas remain underexplored. Moreover, public skepticism still surrounds the bilingual policy: Will it marginalize local languages and cultures? Can the 2030 goals truly be met? Are the funding and teaching workforce sufficient? These concerns remain unresolved. Despite the ambitious goals and significant investments, Taiwan’s bilingual education still faces notable challenges in bridging policy and practice. This study seeks to investigate the realities of bilingual experimental classes, offering a dual perspective on institutional structures and classroom teaching to inform future improvements.

1.3 Research Objectives

- To explore the current implementation of bilingual experimental classes in Taiwan.

This includes identifying how the CLIL approach is applied in real classroom settings, the design of bilingual curricula, and the extent to which English is integrated into subject teaching across different schools.

- To investigate the perspectives of teachers involved in bilingual education.

This objective focuses on understanding teachers’ preparedness, challenges in curriculum design, teaching strategies, collaboration with foreign educators, and professional development experiences.

- To examine students’ experiences and attitudes toward bilingual experimental classes.

The research seeks to uncover how students perceive bilingual instruction, the difficulties they face, their interactions with foreign teachers, and the impact of bilingual education on their language learning and academic performance.

- To identify the key obstacles and potential improvements in the current bilingual education system.

Based on interview and survey data, the study aims to highlight systemic issues—such as lack of clear guidelines and uneven resource distribution—and to offer practical recommendations for enhancing the effectiveness of bilingual education in Taiwan.

- To contribute insights that support the successful realization of the “Bilingual 2030” policy.

By analyzing real-world classroom dynamics and stakeholder feedback, the study intends to inform future policy adjustments and promote a more inclusive and sustainable bilingual education framework.

2. Literature Review

2.1 Theoretical Foundations of Bilingual Education

Bilingual education in Taiwan is increasingly influenced by international frameworks that promote both language development and content mastery. Among these, Content and Language Integrated Learning (CLIL) has emerged as a dominant model. According to Verhoeven, Goris, and Denessen (2019), CLIL has demonstrated a significant positive impact on second language (L2) acquisition, particularly in improving students' comprehension and production skills. However, their systematic review also points to wide variation in CLIL implementation, with outcomes dependent on factors such as teaching quality, curriculum design, and learner background. CLIL's success depends heavily on the preparedness of teachers. Cañado (2018) argues that effective CLIL delivery requires teacher training programs to go beyond general pedagogy and include targeted instruction in linguistic proficiency, bilingual methodology, and interdisciplinary curriculum design. Without such preparation, teachers may struggle to balance subject matter with language instruction, potentially undermining both.

In terms of language practices within bilingual classrooms, translanguaging has received growing attention as a dynamic and inclusive strategy. Poza (2018) emphasizes that translanguaging—where learners flexibly draw on their full linguistic repertoire—supports both conceptual understanding and identity affirmation. His case study in a bilingual science classroom illustrates how alternating between English and Spanish allowed students to deepen their engagement with complex content. Similarly, Lisaitè and Smits (2022) explore the role of translanguaging within CLIL contexts and find that it enables multilingual learners to access prior knowledge, manage cognitive load, and construct meaning across languages. They argue that translanguaging should not be viewed as a barrier to English acquisition but as a legitimate pedagogical resource that affirms students' multilingual identities. In addition to reading comprehension and conceptual development, CLIL has also been shown to benefit oral communication. Lancaster and Cañado (2017) report that students exposed to CLIL instruction demonstrate measurable gains in speaking fluency and listening comprehension. These findings align with the objectives of Taiwan's bilingual policy, which prioritizes communicative competence alongside academic achievement.

2.2 Previous Studies on Taiwan's Bilingual Policy and Bilingual Experimental Classes

Taiwan's Bilingual 2030 policy represents a bold national initiative to enhance English proficiency and global competitiveness by integrating English as a medium of instruction (EMI) across all levels of education. Central to this initiative is the establishment of bilingual experimental classes in public schools, which serve as pilot programs to implement subject-based English instruction, typically through models such as Content and Language Integrated Learning (CLIL). While the vision is ambitious, a growing body of research reveals discrepancies between policy goals and actual classroom realities. According to the National Development Council and the Ministry of Education (2021), by 2024, 60% of schools at the senior high school level and below nationwide are expected to adopt all-English teaching in English class. And by 2030, 100% of schools at the senior high school level and below nationwide are expected to adopt all-English teaching in English class. This policy push is supported by statistical indicators, such as the finding that 17.1% of senior high school students have already attained the CEFR B2 level in English proficiency. In addition, the government has committed to expanding bilingual experimental programs, enhancing teacher training, and promoting the use of digital platforms like Cool English to support language learning.

While the term "bilingual experimental class" sounds unified, the actual design and implementation of these classes vary widely across schools. The Ministry of Education requires that at least 50% of subject instruction in these classes be conducted in English. However, interviews and school reports suggest that this standard is not consistently followed. Teachers frequently switch back to Mandarin for complex concepts or test preparation, especially outside of formal classroom observations (National Development Council & Ministry of Education,

2021). However, critiques from both scholars and students suggest that implementation has outpaced preparation. He (2020) cautions that the bilingual policy may marginalize Taiwan's multilingual identity and risk self-colonization by prioritizing English over native languages. Li (2021) further argues that the policy assumes uniform student ability, failing to account for students who may have limited exposure to or interest in English. Such concerns point to a fundamental tension between the policy's vision and the linguistic realities of Taiwanese classrooms.

EdYouth's (2023) large-scale student survey presents further evidence of this misalignment. The survey revealed that only 42% of high school students liked their English teachers' instructional methods, and just 32% found English classes helpful for real-life communication. Moreover, 38.4% of students disagreed that bilingual instruction in non-language subjects could improve English proficiency, and 68% reported that it negatively affected their learning of core subject content. These student views differ significantly between those in bilingual experimental classes and those in regular classes. According to EdYouth, bilingual experimental class students report higher confidence in using English, with over half self-reporting at CEFR B1 or above. In contrast, many students in regular classes—particularly those at CEFR A2 or lower—struggle to follow EMI content and report relying on classmates for translation or simply tuning out of lessons (EdYouth, 2023).

This problem is compounded by the “bimodal” phenomenon—the widening gap between students with high and low English proficiency. According to the 2024 policy implementation report, CEFR A2-level students can comprehend only around 50% of EMI content, and 32% can understand less than 25% (EdYouth, 2023). In contrast, B1-level students understand approximately 73% on average. These discrepancies suggest that EMI could exacerbate educational inequalities, particularly in under-resourced schools or among socioeconomically disadvantaged students (Lin & Wu, 2025). Qualitative findings further illuminate challenges in the implementation of bilingual experimental classes. Although government guidelines require that at least 50% of class time in such programs be conducted in English, interviews with students reveal that many teachers revert to Chinese, except when observed by administrators. Teachers report feeling unequipped for EMI due to a lack of systematic training, insufficient materials, and pressure to cover subject content for standardized exams (National Development Council & Ministry of Education, 2021; EdYouth, 2023). Moreover, the frequency of bilingual lessons is inconsistent across schools. While some experimental classes meet once or twice per week, others are held only once a semester—limiting the potential for sustained immersion. Students also report variation in instructional style: some teachers attempt CLIL-based approaches, while others primarily translate vocabulary or alternate languages during instruction (National Development Council & Ministry of Education, 2021).

Students also express mixed reactions. While some acknowledge the benefits of learning subject-specific English terms—particularly in STEM and arts courses—others report confusion, reduced comprehension, and anxiety, especially when instruction occurs without prior notice or adequate scaffolding. The frequency of bilingual lessons also varies significantly across schools, ranging from once a semester to once a week, reducing opportunities for immersion and habit formation. The report also identifies a strong link between student outcomes and socioeconomic background. Bilingual experimental class students often come from families with greater financial and educational resources, having attended bilingual kindergartens or international programs. As one student noted, “The bilingual class just gathers the elite students for more elite training,” raising concerns about equity and access (EdYouth, 2023).

Researchers also point out the lack of standardized evaluation for bilingual experimental classes. Lin and Wu (2025) criticize the government's emphasis on counting schools rather than examining teaching quality or student well-being. Without clear learning benchmarks, each school interprets “bilingual education” differently, which creates disparities in learning outcomes and instructional quality. Finally, while the policy sets quantitative goals, its qualitative indicators remain underdeveloped. Lin and Wu (2025) criticize the government's emphasis on the number of schools offering bilingual education rather than evaluating teaching effectiveness, learning outcomes, or student well-being. Moreover, with curriculum guidelines left vague, each school interprets

“bilingual education” differently, resulting in inconsistency across teaching practices, student experiences, and measurable success. In conclusion, although Taiwan's bilingual policy has stimulated innovation and global alignment, it faces substantial implementation challenges. Without addressing gaps in teacher training, curriculum integration, resource equity, and student readiness, the risk of deepening educational inequality remains high. Researchers call for more inclusive, data-informed strategies that align policy vision with classroom realities, ensuring that bilingual education serves all students, not just the already advantaged.

2.3 Review of Teachers' and Students' Perceptions of Bilingual Education

The success of bilingual education policies often hinges on the perceptions and experiences of the key stakeholders—teachers and students. In Taiwan's context, research and policy reports have documented a mixture of optimism, skepticism, and practical concerns regarding bilingual instruction, particularly in bilingual experimental classes. These perceptions are critical in evaluating the feasibility and sustainability of the *Bilingual 2030* policy.

2.4 Teachers' Perceptions

Teachers occupy a central role in the execution of bilingual education, but many report feeling ill-equipped to deliver content through English. Tseng (2020) found that while educators generally support the goals of bilingual reform, they often lack the linguistic and pedagogical confidence to integrate content and language instruction effectively. This concern is echoed in qualitative interviews from the 2024 bilingual policy report, where several high school teachers admitted that EMI teaching was implemented only during formal observations or inspections, and that they would revert to Chinese otherwise due to discomfort or student feedback (Wu & Lin, 2024). In the same report, teachers expressed challenges such as a lack of time for lesson preparation, limited bilingual teaching materials, and the absence of institutional support. Some reported being “assigned” to teach bilingual courses without sufficient EMI training, leading to additional pressure and occasional student backlash when their English proficiency was questioned. As one student noted, “At the beginning of the semester, our teacher tried teaching in English, but after students made fun of her pronunciation, she switched back to Chinese” (EdYouth, 2023). Nevertheless, many teachers recognize the potential benefits of bilingual instruction. When adequately supported, they see it as an opportunity to enhance students' global competence and critical thinking. A number of educators have called for greater clarity in curriculum expectations, access to targeted EMI professional development, and more collaborative teaching models involving foreign teaching assistants.

2.5 Students' Perceptions

Student responses to bilingual education are also varied and deeply tied to their English proficiency, subject matter, and classroom experience. Student Group Surveys also indicate that while some students enjoy the novelty of using English in non-language subjects, many—especially those with lower CEFR levels—find it confusing, demotivating, or even exclusionary. For example, Data from EdYouth (2023) demonstrates that only 19.9% of surveyed students agreed that learning other subjects in English did not affect their understanding of those subjects, while 68% felt that bilingual instruction disrupted content learning. Students in bilingual experimental classes reported a more positive experience, particularly when bilingual teaching occurred in subjects like physical education, music, or science, where many technical terms already derive from English. One student remarked, “Using English in chemistry or history helps me understand the original meaning of concepts and trace the roots of certain terms” (EdYouth, 2023). However, they also highlighted inconsistencies between schools, teachers, and class frequency, noting that irregular exposure made it difficult to adapt and develop fluency.

Students in regular classes, by contrast, frequently cited feelings of exclusion, anxiety, and disengagement. Among CEFR A2-level students, 32% could only understand less than a quarter of English-medium instruction. These students reported relying on classmates for translation, or simply tuning out entirely. Some viewed

bilingual policy as favoring elite students with stronger academic backgrounds or greater access to private English education. Despite these concerns, there is also cautious support for the policy's long-term goals. Many students agreed that the ability to use English in real-world contexts would be beneficial, but stressed the need for gradual implementation, differentiated instruction, and stronger integration with everyday language use. Several emphasized the importance of interactivity and real-life applications in English class, rather than rote memorization or test preparation.

2.6 Shared Observations

Both teachers and students recognized the importance of teacher fluency and teaching style in shaping bilingual classroom outcomes. A recurring theme in both groups was the perception that current EMI instruction lacks clear structure and purpose. Teachers called for curriculum alignment and realistic pacing, while students asked for more transparency, scaffolding, and opportunities for oral interaction. Additionally, both stakeholders expressed concern about equity. The 2024 bilingual policy report highlighted that bilingual experimental classes often cluster students from higher socioeconomic backgrounds, reinforcing educational inequality. One student commented, "The bilingual class just gathers the elite students together. The rest of us don't get the same resources or attention" (EdYouth, 2023).

In conclusion, the reviewed literature highlights both the theoretical foundations and practical challenges of bilingual education in Taiwan, especially within the context of the Bilingual 2030 policy. Models like Content and Language Integrated Learning (CLIL) and translanguaging have shown promise in enhancing language proficiency and subject comprehension. However, successful implementation relies heavily on teacher preparedness, curriculum design, and student background. In practice, Taiwan's bilingual experimental classes—central to the policy—show inconsistent implementation, with wide variations in lesson frequency, teaching strategies, and adherence to the requirement that at least 50% of subject instruction be conducted in English. While some students benefit from increased English exposure and develop higher confidence, others, particularly those with lower proficiency or fewer resources, report confusion, anxiety, and disengagement. Teachers similarly express support for the goals of bilingual education but feel underprepared and under-resourced, often reverting to Mandarin outside of formal evaluations. These disparities raise concerns about educational equity, with bilingual experimental classes often serving more advantaged students. To address these gaps, this study will next explore the current state of bilingual experimental classes in Taiwan by investigating the lived experiences and perceptions of both teachers and students. By understanding their views on teaching effectiveness, classroom dynamics, and language learning outcomes, the research aims to identify actionable improvements—not only for the bilingual experimental classes themselves but also for Taiwan's broader bilingual education policy.

3. Methodology

3.1 Participants

The study involved a small sample consisting of one mathematics teacher and several 10th-grade students enrolled in a bilingual experimental class at a junior high school in Kaohsiung City. Participants were recruited through purposive sampling based on their direct involvement in bilingual education. The teacher had extensive teaching experience and had received professional development in bilingual instruction. The students had prior exposure to English learning and were actively participating in a bilingual curriculum that integrated subject content with English language use. The participants' ages ranged from approximately 15 to 16 years old for the students, while the teacher was in their mid-career teaching stage.

3.2 Materials

The study utilized semi-structured interview guides designed for both teacher and student participants. No standardized questionnaires or formal tests were used. Interviews were recorded using digital audio devices for

transcription purposes. The primary tools for data analysis included using google questionnaires for quantitative analysis, as well as utilizing word and excel tools for interview resources integration.

3.3 Procedure

The research followed a multi-step process:

Recruitment of Participants: The teacher and students were invited to participate based on their affiliation with the bilingual experimental program.

Distribution of Interview Guides: Semi-structured questions were designed to explore perspectives on bilingual instruction and learning experiences.

Conducting Interviews: One-on-one interviews were conducted separately with the teacher and with each student in a quiet setting to encourage open responses.

Transcription and Coding: All interviews were transcribed verbatim. The data was then subjected to thematic coding to identify key themes and recurring ideas.

Data Analysis: A combination of **qualitative thematic analysis** and **basic descriptive statistics** (e.g., frequency of themes) was used to interpret the findings.

4. Research Result

This study collected data through surveys and interviews to better understand the experiences and perspectives of students and teachers in Taiwan's high school experimental bilingual classes. The interview participants included one mathematics teacher with extensive experience in bilingual experimental class and five students enrolled in the bilingual program. The research findings are presented in two main sections: (1) descriptive statistical analysis of the student survey responses, and (2) thematic analysis of the interviews, highlighting key insights from both the teacher and student perspectives. The report concludes with a comparative summary of these viewpoints.

4.1 Survey Result Analysis

Overall Satisfaction with Bilingual Program - A total of 14 student questionnaires were collected, consisting of eight Likert-scale items covering satisfaction with the bilingual program, availability of foreign teacher resources, teaching strategies, and perceived policy equity. Overall, students reported positive experiences in the bilingual experimental class. The average rating for overall satisfaction was 3.8 out of 5, indicating that a majority of respondents felt content with their learning. In fact, 71% of students agreed or strongly agreed that they are satisfied with their bilingual class experience. Similarly, most students felt the program met their expectations (mean rating \approx 3.9).

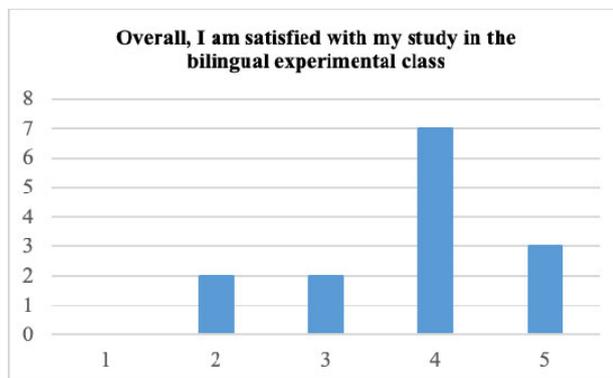


Figure 1: Overall satisfaction of bilingual program

Teaching Effectiveness and Language Impact - Regarding teaching effectiveness, opinions were more mixed. When asked if the bilingual teaching methods helped them absorb subject content, the average rating was 3.5, with many students selecting a neutral stance. Several did agree that the teaching approach was effective, but a few were uncertain. Likewise, students were divided on whether learning other subjects in English affected their understanding of those subjects (statement “Using English to learn other subjects does not affect my learning of those subjects”). About half of the respondents agreed it did not negatively affect them, while the others felt some impact – reflected in an average score of 3.5. This split indicates that some students felt comfortable learning content in English, whereas others experienced language as a barrier to fully grasping subject matter. Notably, one student mentioned that unfamiliar terminology was a challenge initially, whereas another student said English comprehension was not a problem for them, exemplifying the range of experiences.

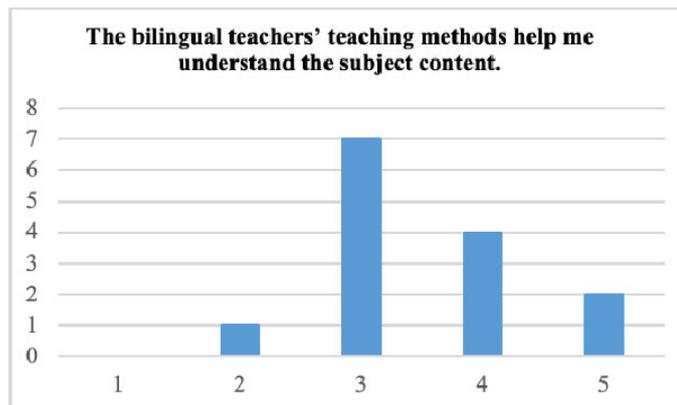


Figure 2: Bilingual teaching methods helped students absorb subject content

Availability and Quality of Foreign Teacher Resources - For foreign teacher resources, the survey revealed a potential shortfall. The statement “Foreign teacher resources are sufficient” received the lowest agreement, with an average of 2.9 out of 5. Nearly half of the students disagreed indicating that many felt the number or availability of foreign teachers was inadequate. This finding aligns with interview comments that, although a foreign teacher was assigned, interaction opportunities were limited. In contrast, students were generally positive about the quality of foreign teachers’ instruction: the item “Foreign teachers’ teaching methods improve my English learning” had a high average of 3.8, and notably, no student disagreed with it. In other words, when foreign teachers were present, students found their teaching helpful for improving English. The issue, therefore, lies in quantity rather than quality. One student suggested increasing the proportion of foreign teachers in class to enhance students’ exposure to authentic English.

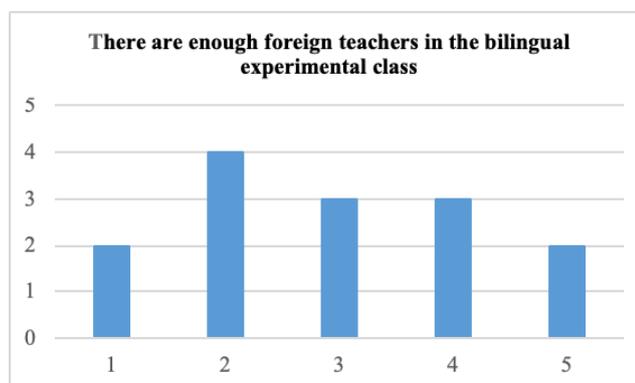


Figure 3: Availability of foreign teacher resources in bilingual classes

Student Perceptions of Bilingual Policy and Implementation - In terms of policy perceptions, students’ attitudes were cautiously optimistic with some reservations. In the survey, we asked whether they perceive the

bilingual policy as “a policy that only lifts high achievers but does not help weaker students” (a critical viewpoint). Responses centered around neutrality (mean ≈ 3.2). About as many students agreed with that statement as disagreed, indicating uncertainty or diverse views on the policy’s fairness. Meanwhile, when rating overall agreement with the bilingual policy, the average score was 3.5. Roughly half of the students expressed support for the policy (choosing “agree”), and the rest were mostly neutral with only one clear “disagree.” This suggests that while students appreciate the idea behind the bilingual policy and its goals, some are not fully convinced of its implementation or equity. In open-ended explanations, several students wrote that the policy’s intent is good (e.g. improving English as an international language) but felt it “has not been implemented very thoroughly”. Some mentioned that English usage in practice is still limited and the policy needs to be more perfected.

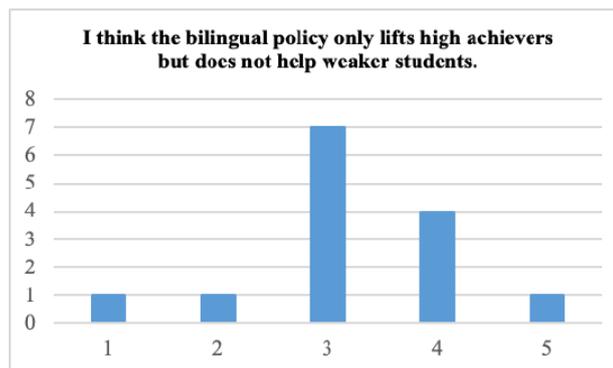


Figure 4: Student perceptions of policy fairness toward weaker students

Additional notable quantitative findings include the following: Only 50% of students reported that their class meets the official guideline of using English for at least half of each subject’s instruction, while the other half said their class falls short of that 50% English exposure requirement. This echoes a student’s remark that, in reality, only certain courses (like English and a special “bilingual math” class) were conducted fully in English, whereas other subjects mostly used Chinese with some English terms. When asked whether the school emphasizes English ability or true bilingual ability, 64% perceived that their school values bilingual (Chinese and English) competence, whereas 36% felt the emphasis was only on English. This suggests most students do sense a dual-language focus, but a significant minority see the program as leaning too heavily on English alone. Finally, students rated their own comprehension of all-English instruction: the majority (11 out of 14) estimated they could understand about 75% of a fully English-taught lesson, and a few outliers ranged from 50% comprehension to nearly 100%. Only one student felt they would catch as little as 25% of it. This self-assessed comprehension level indicates confidence by most students in following English-medium instruction, though not complete – consistent with the fact that entirely English-taught classes were limited.

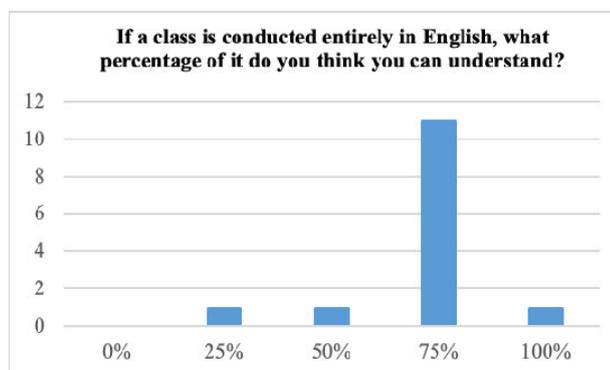


Figure 5: Students’ comprehension of all-English instruction

In summary, the quantitative data portray generally positive student satisfaction and perceived benefits, tempered by concerns about resource sufficiency and uneven implementation of the bilingual policy.

4.2 Thematic Analysis of the Student Interviews

Adaptation and Learning Challenges - Students reported encountering some initial challenges when adapting to bilingual classes. A common difficulty was unfamiliar terminology – several students mentioned that at first they did not know many English vocabulary words or specialized terms, which meant they sometimes had to guess the teacher's questions or look up words while answering. One student noted that occasionally they resorted to Chinese when they didn't know how to express something in English.

At first, I didn't know many English vocabulary words or technical terms, so I had to guess what the teacher was asking. When it came to answering questions, I also needed to look up words or try using other ones to express myself. (Student Participant 1)

However, this experience was not universal: another student stated that English listening and comprehension “was not a problem” for them from the beginning. This range of responses suggests that while some students struggled with language barriers in academic content (e.g. not immediately understanding worksheet questions in subjects like bilingual math), others had sufficient English proficiency to adapt more easily. Overall, students indicated that these challenges eased over time as their vocabulary grew.

Teaching Methods and Bilingual Classroom Experience - Interviewees consistently observed that the bilingual experimental class provided a different learning experience compared to regular classes. They highlighted specific differences in teaching methods and curriculum. For example, English class in the bilingual program was conducted entirely in English and included English-medium class discussions, often with a foreign teacher co-teaching or assisting in class. In subjects like math, students had dedicated bilingual math lessons where the teacher taught completely in English, which helped train their English comprehension and usage in a content area. The bilingual class also offered special courses (such as English critical thinking and debate, technology/AI topics, etc.) that were not available to regular classes. Students described these opportunities as a “completely different experience,” providing chances to strengthen logical thinking and practice language skills simultaneously. The classroom atmosphere in the bilingual class was seen as more engaging and academically motivated – one student mentioned the class culture was better, with capable peers who actively use English and learn from each other.

Bilingual classes gave me a completely different experience, a chance to strengthen my logical thinking and language skills, and also an opportunity to express myself. (Student Participant 2)

Bilingual math was very different — the teacher explained everything in English, which helped train our English comprehension and made us more used to using English. (Student Participant 4)

The bilingual class offered more special courses, and both math and English were taught entirely in English. Sometimes the foreign teachers would observe or lead activities. Since the bilingual experimental class was in the science track, we had more topic-based courses related to technology, AI, and debate. (Student Participant 5)

Overall, students appreciated the unique curriculum and extra English exposure, feeling it gave them more room to express themselves and use English than they would have in a normal class setting.

Perceived Learning Outcomes - The students generally believed that being in the bilingual program benefited their learning, especially in English proficiency. Many noted concrete improvements in their English listening, comprehension, and communication skills. They explained that they got substantially more practice using English – for instance, through class discussions or group work – which helped boost their confidence in

speaking and collaborating in English. Several students also mentioned that the bilingual environment made them more aware of their weaknesses and motivated them to improve. One student said that learning in English revealed the gaps in their knowledge and pushed them to work harder to keep up with the teacher.

The bilingual environment improved my English skills and gave me more opportunities to communicate. My English listening ability improved, and I also became more familiar with English logic. (Student Participant 1)

It was very helpful for understanding and using English. I became more aware of my weaknesses and was motivated to work harder to keep up with the teacher. (Student Participant 4)

Others pointed out that their fear of English in academic contexts diminished; for example, encountering technical terms in English (such as in math) became less intimidating once they had seen them in class – they learned to infer meanings from roots or prefixes and felt less “afraid” of English terminology. Beyond language skills, a few students mentioned gaining new perspectives or knowledge: since the bilingual class included topics on technology, AI, and debates, it broadened their horizons compared to the regular curriculum. In sum, the interviews with students reflect a consensus that the bilingual program improved their English ability and provided valuable learning experiences, aligning with the positive survey results on learning effectiveness.

After joining the bilingual experimental class, my English listening improved. Often, when I came across English math terms that I had learned before, they didn't feel as difficult anymore. I learned to guess the meaning from prefixes or roots, and I wasn't as afraid of English as before. (Student Participant 5)

Resource and Implementation Issues - Despite these positive outcomes, students identified several implementation issues regarding resources and program structure. The primary concern was limited interaction with foreign teachers and native English speakers. Many students wanted more meaningful engagements, suggesting increased foreign teacher participation to enhance their pronunciation and English thinking patterns. Others proposed opportunities to communicate with international students or native speakers through exchange programs. In reality, some students noticed that even when foreign teachers were available, interactions were minimal, leaving them wishing for more direct guidance.

I hope there could be a higher proportion of foreign teachers so that our way of thinking and accents can become more native-like. I also wish teachers from arts and humanities subjects who are good at English could help teach classes, so we'd have more chances to use English. (Student Participant 1)

Additionally, others expressed disappointment and desired greater immersion. For instance, one student suggested replacing some bilingual math sessions, viewed as tedious, with courses focused on international topics like global news. Overall, students consistently called for enhanced foreign teacher involvement and a more globally oriented curriculum to better meet their expectations.

I hope there can be more opportunities to interact with foreign students, especially native English speakers. (Student Participant 2)

Besides the issue of foreign teachers, I hope there can be more globally connected topic-based courses — for example, discussing international news together. As for bilingual math, it felt a bit dull. It might be enjoyable for students majoring in math, but I would prefer using that time for courses more related to global topics. (Student Participant 5)

School Emphasis and Policy Perceptions - When discussing their school's priorities, most students felt the aim was to cultivate balanced bilingual skills (Chinese and English) rather than solely emphasizing English proficiency. They noted that teachers frequently provided explanations in Chinese when students struggled,

highlighting a practical approach to bilingual education. However, some perceived a mismatch between the school's bilingual aspirations and actual practices. A few students felt the emphasis still tilted significantly toward English, while others pointed to conflicts within policy implementation. For instance, one student mentioned being required to take mother-tongue classes and exams, viewing this as an additional burden unrelated to the bilingual program's core objectives.

Our bilingual experimental class focused more on bilingualism rather than just English. It aimed to encourage and train students to speak English confidently and bravely. (Student Participant 2)

Teachers shouldn't force us to take local language classes or exams, because they are unrelated to the bilingual experimental program. Learning three languages at the same time is also stressful. (Student Participant 3)

Regarding the broader governmental bilingual policy, students generally supported its fundamental goals—enhancing fluent English use in daily life, education, and work contexts to strengthen Taiwan's global connectivity. They described tangible benefits, such as increased English proficiency, reduced fear of speaking English, and better academic outcomes. Nonetheless, their support was tempered by critiques of policy execution. Students noted Taiwan's bilingual environment was not yet fully realized, describing the implementation as somewhat incomplete or superficial compared to other countries. A lingering concern was that the policy might disproportionately benefit stronger students, echoing their mixed survey responses. Ultimately, students appreciated the policy's intent and effects but advocated for improvements, specifically better teacher training, resource allocation (particularly involving foreign teachers), and referencing successful international examples to refine Taiwan's bilingual education approach.

Suggestions for Improvement - During the interviews, students enthusiastically shared suggestions to enhance the bilingual program. A number of students emphasized the importance of improving teacher training and English proficiency for local (non-foreign) teachers. They felt that if subject teachers have stronger English teaching skills, classes could be conducted more effectively in English. Some suggested that schools should encourage more teachers to offer bilingual classes, thereby expanding the program's reach. Students also called for the school and government to create more authentic English usage opportunities. This included ideas like organizing exchanges where they could communicate with foreign students, or inviting guest speakers so that they can apply their English in real interactions. Many reiterated the desire for greater foreign teacher involvement – they proposed that foreign teachers spend more time with the class (not just occasional appearances), giving students more continuous exposure to native English throughout the week. In their view, this would help make accents and thinking patterns more native-like and increase confidence in speaking.

Teachers should efficiently complete the core curriculum so that we have the chance to explore more diverse fields. At the same time, they should also possess sufficient English teaching ability. (Student Participant 5)

On the curriculum side, as noted, students suggested adding or substituting more globally focused content. They were excited about courses that connect to the international community or current events, and thought that incorporating such content (even at the expense of some existing bilingual coursework) would make the program more engaging and relevant. Finally, some practical suggestions included ensuring the class schedule allows enough time to cover both the required material and the extra bilingual activities – one student noted that time constraints sometimes prevent completing all planned lessons. In summary, student interviewees expressed a desire to make the bilingual program more immersive, resource-rich, and globally connected, while also appreciating the efforts their teachers and school have already put in. Indeed, several students praised their teachers for being very dedicated and for providing many opportunities beyond the regular curriculum, indicating that they value the program and simply wish to see it continually improved.

4.3 Thematic Analysis of the Teacher Interviews

The interview with a teacher in the bilingual program provided insight into the implementation from an educator's perspective, including classroom strategies, challenges, and views on policy support.

Teaching Approach and Curriculum - The teacher described specific approaches for integrating bilingual instruction into the school's curriculum and daily schedule. In this school's model, specific class periods are deliberately allocated to bilingual teaching, ensuring regular English-language exposure. For instance, mathematics involves six weekly periods, with two consecutive sessions specifically dedicated to "bilingual math," providing students consistent, continuous practice in English. Additionally, the teacher enriches the bilingual experience by incorporating cross-disciplinary and experiential learning activities, such as weekend field trips. One notable example included a visit to a university science education center, where students learned scientific concepts, like optics, directly in English from university professors. Such activities not only broaden students' academic knowledge but also enhance their practical language skills.

Further, after delivering the core lesson content in Chinese, the teacher supplements it with English-based tasks, discussions, or literacy exercises to reinforce subject understanding and bilingual competencies. Classroom routines have also been adapted to maximize student participation in English. The teacher regularly utilizes group activities, student presentations, and pair work—sometimes strategically pairing stronger and weaker students—to ensure active interaction and ample speaking opportunities for all. A point-based reward system is implemented to motivate students, offering extra credit for active English communication. Overall, these pedagogical strategies create a more student-centered and interactive learning environment. The teacher concluded that successful bilingual education requires careful scheduling of English instructional periods combined with innovative teaching methodologies, such as field trips, hands-on projects, and collaborative group work.

Student Response and Progress - According to the teacher, student response to bilingual classes has been largely positive. They observed that students are engaged and adaptive when taught using bilingual methods. One benefit the teacher noted was that teaching in two languages can help uncover students' learning gaps; by presenting material in English, they sometimes identify points of misunderstanding that weren't apparent in Chinese, and then they can address those gaps, thereby reinforcing learning. The teacher described the approach as student-centered, with an emphasis on collaboration (students working together to solve problems) and progression in language skills. They outlined a general progression they've seen: at first, students focus on understanding English, then on communicating in simple English, and eventually on engaging in richer English dialogue and giving presentations as their confidence grows.

Importantly, the teacher mentioned that when a student doesn't understand something in class, it is "not because of the language but because of the math" – implying that the conceptual difficulty of the subject (e.g. math concepts) is the real challenge, rather than the English itself. This suggests that with proper scaffolding, language does not become an insurmountable barrier; students can follow along with English instruction to the point that the limiting factor is still the content difficulty, which is a promising sign for bilingual education. The teacher's remarks indicate that students in the bilingual program are managing the dual-language instruction reasonably well. In fact, by requiring students to document their learning process (for example, submitting learning portfolios each semester, possibly in English), the teacher has seen students take more responsibility in their learning and improve over time. Overall, the teacher was encouraged by the students' attitude and growth, noting that many students show improved confidence and competence in using English as the class progresses.

Challenges and Teacher Support - The teacher candidly discussed several challenges faced when implementing bilingual education, emphasizing the educator's perspective. A primary challenge highlighted was the increased preparation workload. Teaching both subject content and language skills simultaneously requires carefully designed lessons with proper scaffolding—providing strong initial support like bilingual glossaries and multimodal visual aids, then gradually reducing assistance as students become more capable. This meticulous

approach considerably adds to the teacher's preparation time.

Another major issue is managing the diverse English proficiency levels among students. Within the same classroom, some students exhibit high fluency, while others struggle significantly. This variance necessitates differentiated instructional strategies and multimodal teaching methods to accommodate diverse student needs effectively. Additionally, finding suitable bilingual teaching resources presents ongoing difficulties. Although worksheets and selected materials from American textbooks are helpful, these resources often require extensive adaptation to align with Taiwan's curriculum, further increasing preparation burdens. The teacher actively pursued professional development opportunities to overcome these challenges, participating in bilingual education training programs designed to integrate core competencies effectively into bilingual instruction. Joining teacher professional learning communities also provided valuable collaborative support. Through such communities, teachers co-design lessons, exchange resources, and discuss solutions to immediate language and instructional issues.

Despite these efforts, the teacher expressed significant concerns regarding insufficient institutional support and incentives. Current incentives, such as slightly reduced teaching hours or marginal salary increases, were described as minimal compared to the substantially increased workload. As a result, the teacher humorously yet earnestly remarked that sustaining the bilingual program often feels like "burning" their passion under difficult conditions. The teacher stressed the necessity for increased institutional and government support, advocating specifically for better salaries, improved welfare benefits, and additional staffing. In closing, the teacher advised new bilingual educators to prepare for extra effort and actively seek resources, emphasizing that tangible financial incentives are crucial to motivating and sustaining teachers' long-term commitment to bilingual education.

Integration of Foreign Teachers - Another significant theme raised by the teacher was the integration of foreign teachers into the bilingual program. The teacher candidly identified multiple challenges hindering effective integration. One prominent issue is the mismatch in subject expertise; foreign teachers, typically ESL instructors, often lack specialized content knowledge in subjects like math or science. Consequently, local subject teachers, who possess greater bilingual teaching ability and subject expertise, feel reluctant to fully entrust class periods to foreign teachers unfamiliar with the curriculum. This scenario often marginalizes foreign teachers, who may end up passively observing rather than actively teaching.

Co-teaching logistics and language strategies presented further difficulties. The teacher described attempts to split lessons between local and foreign teachers, with the first half in Chinese and the second half in English. However, this approach proved problematic, as it diminished overall English exposure and disrupted lesson continuity. The teacher therefore advised against this co-teaching format, noting it complicates maintaining mandated language ratios and interferes with instructional flow. Scheduling further complicates the integration process. Foreign teachers frequently joined classes mid-semester, when local teachers had already planned the curriculum, making schedule adjustments difficult without sacrificing essential content. Consequently, foreign teachers often occupied only peripheral roles, sometimes even being phased out entirely from certain classes.

Despite these implementation challenges, students clearly expressed a desire for more interaction with foreign teachers, a sentiment echoed in student interviews. However, practical interaction opportunities were limited. For instance, foreign teachers typically did not engage informally with students during breaks, leading to minimal interaction outside structured classroom activities. Furthermore, foreign teachers' involvement often was limited to extracurricular electives rather than regular subject instruction, further restricting their meaningful participation. Ultimately, the teacher acknowledged the paradox: while students and policymakers highly value the native-English exposure foreign teachers offer, structural issues—such as scheduling conflicts, inadequate curriculum alignment, and limited co-planning—prevent foreign teachers from effectively contributing to the bilingual classroom. The teacher suggested rethinking foreign teacher roles, recommending they focus more clearly on their strengths, such as conversational English sessions, rather than traditional subject teaching.

Without these structural adjustments, the inclusion of foreign teachers' risks becoming counterproductive, highlighting a significant gap between policy aspirations and classroom realities.

Policy Impact and Suggestions - Finally, the teacher shared their views on the overall bilingual policy and its school-level impact. They generally supported the policy's continuation, emphasizing that strong English skills are crucial for students' futures, and a bilingual environment benefits educational development. They acknowledged the policy's positive impacts, such as fostering a more international outlook among teachers and encouraging the integration of innovative methods, including digital technology—though they also pointed out the need for further training in these areas. From an administrative perspective, implementing the policy necessitated adjustments in scheduling, resource allocation, and foreign teacher hiring, which the teacher has managed since the program's inception. Although there were no explicitly stated major shifts in school culture or operations beyond classroom practices, the teacher noted increased sharing of teaching experiences, highlighting their own presentations on bilingual education at national events.

Regarding future improvements, the teacher emphasized strengthening both the “software” and “hardware” aspects of bilingual education. “Software” improvements involve enhancing teacher training, pedagogical strategies, and support networks, while “hardware” includes better instructional materials and digital resources to support bilingual teaching effectively. A critical recommendation was enhancing professional development support and providing more substantial incentives. The teacher highlighted that current incentives, such as minor salary increases or slight workload reductions, are insufficient to attract and retain dedicated bilingual educators, stressing the necessity of higher salaries, greater recognition, and measures to prevent teacher burnout. They clearly stated that, while personally supportive of the policy's goals, effective implementation demands increased government and institutional support.

In closing, the teacher advised prospective bilingual teachers to anticipate challenges, but encouraged them by noting the availability of supportive communities and resources. They underscored the importance of systemic improvements, particularly tangible rewards, to maintain teachers' morale and motivation. Ultimately, the teacher's insights illustrate that the bilingual policy's success depends not only on defined goals, such as mandated English instruction hours, but crucially on practical support and adequate resources provided to those implementing it in classrooms.

4.4 Summary

The findings reveal that students generally viewed the bilingual experimental classes positively, particularly noting improvements in their English proficiency and confidence. They appreciated the unique learning opportunities provided, such as bilingual mathematics and interdisciplinary activities, yet also identified key areas for improvement, including greater access to foreign teachers, more immersive English instruction, and a more globally-oriented curriculum. Teachers emphasized significant workload challenges, difficulties integrating foreign teachers effectively, and insufficient institutional support and incentives. Overall, while participants supported the bilingual policy's goals, the study clearly underscores the need for practical improvements in resource allocation, teaching support, and program implementation to sustain meaningful bilingual education.

5. Discussion

This study aimed to examine the current state of bilingual experimental classes in Taiwan through five specific research objectives. The findings provide valuable insights into the implementation challenges and stakeholder perspectives that characterize Taiwan's bilingual education landscape. The following discussion addresses each research objective by integrating literature review insights with empirical findings.

5.1 Current Implementation of Bilingual Experimental Classes in Taiwan

Our survey results strongly support the theoretical benefits of Content and Language Integrated Learning

(CLIL) outlined in the research framework. The finding that students perceive bilingual teachers' methods as “very helpful for absorbing subject knowledge” and “improves language fluency” validates the CLIL principle that students can simultaneously acquire both language skills and content knowledge. This aligns with the 4Cs framework's emphasis on meaningful integration of Content, Communication, Cognition, and Culture. However, the study also reveals significant gaps between policy expectations and classroom realities in the implementation of bilingual experimental classes. While the government mandates that at least 50% of instruction in bilingual classes should be conducted in English, survey findings indicate that only 50% of students reported their classes meeting this requirement. This aligns with Wu and Lin's (2024) observation that teachers often revert to Chinese instruction except during formal observations, highlighting a fundamental disconnect between policy guidelines and actual practice.

The curriculum design in the observed bilingual experimental class demonstrated both strengths and limitations. Students appreciated unique offerings such as English critical thinking, debate courses, and technology/AI topics that were unavailable in regular classes. However, the fragmented nature of English integration suggests that schools are still experimenting with curriculum models rather than following standardized frameworks. This finding resonates with the literature's emphasis on the experimental nature of CLIL implementation in Asian contexts, where adaptation remains ongoing.

5.2 Teacher Perspectives on Bilingual Education

The teacher interview revealed several critical challenges that align with the broader literature on bilingual education implementation. The mathematics teacher's experience reflects the systemic issues identified by Tseng (2020), including insufficient pedagogical confidence in content and language integration. While the teacher demonstrated motivation and dedication, practical challenges emerged in the areas of curriculum preparation, resource availability, and time management. The study confirms Cañado's (2018) assertion that effective CLIL delivery requires specialized teacher training beyond general pedagogy. The teacher's struggle with balancing subject matter and language instruction, coupled with limited access to appropriate bilingual teaching materials, highlights the gap between policy expectations and professional support systems. This aligns with Wu and Lin's (2024) findings that teachers often feel “assigned” to bilingual courses without adequate EMI training. Resource limitations emerged as a significant concern, with the teacher suggesting improvements such as purchasing foreign textbooks and utilizing specialized teaching aids. This finding supports the literature's emphasis on the crucial role of administrative support and resource allocation in successful policy execution. The teacher's call for better collaboration mechanisms with foreign educators also reflects the broader challenge of establishing effective Professional Learning Communities (PLCs) in bilingual contexts.

5.3 Student Experiences and Attitudes in Bilingual Education Classes

Student responses revealed a complex range of experiences in bilingual classes, shaped largely by their individual English proficiency levels. Overall, attitudes were positive, with an average satisfaction rating of 3.8 out of 5. Students consistently reported noticeable improvements in listening, comprehension, and communication skills. Interview data further highlighted that increased opportunities for English use—particularly through discussions and group work—boosted their speaking confidence. These findings support Lancaster and Cañado's (2017) assertion that CLIL enhances oral communication and listening comprehension. Nevertheless, a key concern was the limited interaction with foreign teachers, which received the lowest satisfaction score (2.9/5). While students valued the teaching quality of foreign educators—evidenced by the high rating (3.8/5) for their impact on English learning—the primary issue lay in their limited availability rather than effectiveness. Many students expressed a clear desire for greater international teacher involvement to improve pronunciation and develop English thinking patterns.

In response to these challenges, students proposed actionable solutions such as increasing the number of foreign teachers, fostering more communication with international students, and establishing exchange programs. These suggestions reflect a strong awareness of the importance of authentic language exposure and align with

translanguaging approaches proposed by Poza (2018) and Lisaité and Smits (2022), emphasizing the role of immersive, cross-cultural interaction in language acquisition.

5.4 Key Obstacles and Potential Improvements when implementing Bilingual Education in Taiwan

As the results of the bilingual class teacher's interview, implementing bilingual education in Taiwan faces key obstacles, notably the heavy workload for teachers. Simultaneously teaching subject content and language skills demands carefully scaffolded lessons, bilingual glossaries, and visual aids, which significantly increase preparation time. Teachers must also accommodate students with vastly different English proficiency levels, from fluent speakers to those struggling with basic comprehension. This "bimodal" phenomenon requires differentiated teaching strategies, adding further complexity to classroom management and instructional design. Another major issue is the lack of localized resources. While American textbooks and worksheets are available, they often need extensive adaptation to fit Taiwan's curriculum, intensifying teacher workload. Despite these challenges, some teachers actively participate in bilingual training and professional learning communities to co-design lessons and exchange resources. These communities offer valuable support, but current implementation still heavily relies on individual teacher initiative rather than systematic institutional backing.

Additionally, at students' perspective, limited collaboration between local and foreign teachers also hinders their learning of English usage and Culture understanding. As the interview of the local teacher indicates, Foreign teachers, often ESL specialists, lack subject knowledge in math or science, leading local teachers to dominate class time. Co-teaching models, such as splitting lessons by language, disrupted flow and reduced English exposure. Scheduling challenges also meant foreign teachers often joined classes mid-semester, further limiting their role. However, as the students' desire to interact with foreign teachers, it highlights the dilemma between their limited classroom role and the need for authentic English exposure. Despite challenges, students proposed insightful solutions. They called for more teacher training, greater English immersion through exchanges and guest speakers, and globally-relevant curriculum content. Their emphasis on authentic language exposure and stronger foreign teacher involvement aligns with translanguaging theories (Poza, 2018; Lisaité & Smits, 2022), offering practical guidance to bridge the policy-practice gap and ensure more equitable bilingual education.

5.5 Stakeholder Recommendations for the "Bilingual 2030" Policy

The study found that both teachers and students generally supported the goals of the "Bilingual 2030" policy but identified key areas needing reform. Their classroom-based suggestions offer practical guidance for improving implementation. One core issue was teacher training. The math teacher interviewed struggled to balance subject teaching with English instruction, echoing Cañado's (2018) view that effective CLIL requires specialized training. Students also urged schools to boost teacher English proficiency and encourage more local teachers to join bilingual programs. These shared concerns highlight gaps in current professional development and align with calls for training in language skills and bilingual pedagogy.

A second major concern was the limited number and integration of foreign teachers. Students gave the lowest satisfaction score (2.9/5) to foreign teacher availability but rated their quality highly (3.8/5), calling for more consistent English exposure and longer contact hours. The teacher echoed the need for better collaboration mechanisms. These findings suggest a mismatch between policy promises and actual resource allocation, underscoring the importance of native speaker involvement for authentic language learning, as advocated in translanguaging literature.

Stakeholders also suggested improving curriculum design by incorporating global content, current events, and real-world English use. Ideas included inviting guest speakers and organizing exchanges with international students. The teacher emphasized the need for quality materials and diverse teaching aids. These suggestions reflect an understanding of CLIL's integration of content, language, and culture, addressing the lack of structure in many bilingual classrooms.

Finally, both groups expressed concern over fairness, noting that students with higher English proficiency benefit more. The average fairness rating (3.2/5) reflects this tension. Suggestions included remedial support and clear learning goals to reduce inequality. These proposals echo critiques by He (2020) and Li (2021) and call for more inclusive strategies to ensure bilingual education benefits all learners.

6. Conclusion

6.1 Overall Conclusion and Key Challenges

The study indicates a general support for bilingual education among both teachers and students within the observed bilingual experimental class. Students reported positive outcomes, including increased confidence, improved English proficiency, and a better understanding of subject content. Specifically, half of the surveyed students (50%) strongly agreed that the teaching methods in the bilingual experimental class were highly beneficial for absorbing subject knowledge. Furthermore, an equal proportion (50%) of students expressed overall satisfaction with their learning experience in the bilingual experimental class. Students noted that bilingual instruction helped them improve their listening and communication skills and reduced their fear of English, simultaneously deepening their understanding of subject content and fostering a global perspective. Despite this positive reception, both teachers and students faced struggles related to training, curriculum clarity, and resource availability. Several key challenges persist within the implementation of bilingual education, as highlighted by the findings:

Challenges Faced by Students

Mismatched English Immersion with Student Expectations - Students perceived that the level of English integration in bilingual experimental classes did not meet their expectations. Only 50% of students reported that their class met the official guideline of using English for at least half of each subject's instruction, indicating that actual English exposure often fell short of the policy's goal and students' hopes for more immersion.

Limited Foreign Teacher Interaction - This was a primary concern. Nearly half of the students disagreed that "Foreign teacher resources are sufficient" (average 2.9 out of 5), despite generally praising the quality of instruction when foreign teachers were present (average 3.8 out of 5 for "Foreign teachers' teaching methods improve my English learning"). Students wished for more meaningful engagement, increased foreign teacher participation for pronunciation and thinking patterns, and opportunities to communicate with native speakers.

Challenges Faced by Teachers

Lack of Training, Support, and Teacher Communities for Bilingual Educators - Bilingual education is a relatively new teaching approach in Taiwan. However, teachers have pointed out that current training programs for bilingual educators often fall short in helping them simultaneously acquire bilingual teaching methods and the skills needed to use educational technologies effectively. In addition to preparing lessons on their own, bilingual teachers also require financial support and access to advanced English training from educational policies—resources that are currently lacking. To improve teaching quality, bilingual teacher collaboration communities can serve as platforms for exchanging ideas. However, these communities depend heavily on teacher initiative, and at present, there are few professional collaborative networks specifically focused on bilingual education.

Inadequate Incentives and Workload Issues - The increased workload associated with meticulous lesson design, material adaptation, and managing diverse student abilities was not adequately compensated by existing incentives (e.g., minor salary increases or slightly reduced teaching hours). This leads to teachers feeling "burned out" and questioning the long-term sustainability of their commitment without more substantial financial and systemic support.

Challenges in Foreign Teacher Collaboration - A significant challenge lies in the mismatch in subject

expertise of foreign teachers and their tendency to join schools mid-semester. These factors make it difficult for local and foreign teachers to collaborate effectively. Even when collaboration occurs, linguistic and cultural differences often hinder joint lesson preparation. However, students explicitly hoped for increased interaction time with foreign teachers to practice language use, and a notable percentage (28.6%) felt there were not enough foreign teachers in the bilingual experimental classes. This highlights a discrepancy between student demand for foreign teacher involvement and the current state of teaching collaboration and preparation.

6.2 Implications for Taiwan's Bilingual Education Policy

This study offers several practical implications for Taiwan's bilingual education policy:

Aligning Policy Goals with Pedagogical Practices - To realize the "Bilingual 2030" vision, policies should more effectively promote CLIL and the 4Cs framework. These approaches help integrate language learning with content knowledge, critical thinking, and intercultural awareness.

Strengthening Teacher Training and Professional Support - Given the shortage of qualified bilingual teachers, it is crucial to invest in professional development that enhances both subject expertise and English instructional competence. Training in scaffolding and multimodal strategies is particularly important to meet diverse learner needs.

Enhancing Curriculum Design and Resource Integration - Schools should be encouraged to create bilingual curricula grounded in real-life experiences. Sufficient support should be provided to access quality materials, including foreign textbooks and diverse teaching aids.

Improving Collaboration with Foreign Teachers - Students expressed a desire for more interaction with foreign teachers. Increasing their numbers and establishing clear collaboration mechanisms can enrich classroom experiences and promote authentic language use.

Promoting Educational Equity - Concerns about the bilingual policy widening learning gaps must be addressed. Targeted support—such as remedial instruction or differentiated teaching—can help ensure that students with lower proficiency are not left behind.

Clarifying Learning Goals and Assessment Standards - Clear bilingual learning objectives and consistent assessment criteria are necessary to guide instruction and evaluate student progress. Special attention should be given to rural areas to ensure equitable access to resources.

6.3 Research Limitations and Future Research Recommendations

This study, while offering valuable insights, is subject to certain limitations, which in turn inform recommendations for future research.

Research Limitations

Limited Sample Size for Student Survey: The student survey component of this study collected only 14 responses. This relatively small sample size may limit the generalizability of the findings to a broader student population in bilingual experimental classes across Taiwan.

Case Study Nature: The study primarily focused on the perspectives of one teacher and students from a bilingual experimental class in a single junior high school in Kaohsiung City. Consequently, the findings might not be fully representative of bilingual education implementation in other regions, different educational stages, or varying instructional models.

Future Research Recommendations

Expanding Sample and Scope: Future research should aim to expand the sample size by including more

students and teachers from bilingual experimental classes. It is also recommended to broaden the scope to cover diverse geographic regions, various types of schools (e.g., public, private, rural, urban), and a range of subject disciplines. This would enhance the representativeness and generalizability of the findings across different educational contexts.

Investigating Learning Gap and Equity: Given that half of the surveyed students perceived the bilingual policy as exacerbating learning disparities and insufficiently supporting students with weaker academic backgrounds, future studies should delve into the underlying factors contributing to such perceived inequities. Employing mixed-methods approaches may help identify causal relationships and inform targeted, evidence-based strategies to ensure equitable learning opportunities for all students within bilingual education systems.

Longitudinal Studies on Student Outcomes: Long-term research is needed to trace the sustained impact of bilingual education on students' English language proficiency (listening, speaking, reading, and writing), subject-specific academic performance, critical thinking, and global competencies. Longitudinal data would provide a more comprehensive view of the developmental trajectories influenced by bilingual programs.

Resource Allocation and Assessment Tools: Further investigation should address the equitable allocation of bilingual education resources, especially in underserved or rural areas. In parallel, there is a need to develop inclusive, diversified assessment instruments capable of capturing student progress in both language acquisition and subject matter learning, thereby providing a more holistic understanding of bilingual learning outcomes.

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Appendices

1.1 Appendix A: Bilingual Experimental Class Student Questionnaire

(*Indicates required questions)

*1. How would you like to be addressed? (You may use a nickname)

*2. What is your level of English proficiency?

- A1
- A2
- B1
- B2
- C1
- C2
- unable to self-evaluate
- native speaker

*3. What was your reason for joining the bilingual experimental class? (multiple question)

- To improve my English skills
- To improve both Chinese and English skills
- To gain a more international perspective
- I believe being bilingual gives me a competitive advantage
- Because of my parents' expectations
- I believe it gives me an advantage in further education
- I wanted to join that particular academic track (e.g., Science Track + Bilingual)
- Other: _____

*4. After joining the bilingual class, it met my expectations of what a bilingual class should be like.

Strongly disagree — 1 2 3 4 5 — Strongly agree

*5. The bilingual teachers' teaching methods help me understand the subject content.

Strongly disagree — 1 2 3 4 5 — Strongly agree

*6. There are enough foreign teachers in the bilingual experimental class.

Strongly disagree — 1 2 3 4 5 — Strongly agree

*7. The teaching methods used by foreign teachers help me improve my English.

Strongly disagree — 1 2 3 4 5 — Strongly agree

*8. Learning other subjects in English does not affect my understanding of those subjects.

Strongly disagree — 1 2 3 4 5 — Strongly agree

*9. Overall, I am satisfied with my learning experience in the bilingual experimental class.

Strongly disagree — 1 2 3 4 5 — Strongly agree

*10. According to the Ministry of Education's policy, at least 50% of class time in a bilingual lesson should be conducted in English. Does your school's bilingual class meet this standard?

- Yes
- No

*11. If a class is conducted entirely in English, what percentage of it do you think you can understand?

- 0%
- 25%
- 50%
- 75%
- 100%

*12. Do you think your school emphasizes English proficiency, Chinese proficiency, or both equally?

- English
- Chinese
- Both (bilingual: Chinese and English)

*13. I believe the bilingual policy favors high-achieving students and does not support those who struggle.

Strongly disagree — 1 2 3 4 5 — Strongly agree

*14. Based on your understanding and observations, how much do you support the bilingual policy?

Strongly disagree — 1 2 3 4 5 — Strongly agree

15. (Follow-up) Why do you feel this way about the bilingual policy? (Open-ended)

16. Do you have any additional thoughts about the bilingual class or the bilingual education policy?

(Open-ended)

17. Do you have any feedback, questions, or praise specifically for the Fengshan High School Bilingual Experimental Class? (Open-ended)

1.2 Appendix B: Interview Guide for Students

1. Self-Introduction

- Can you briefly introduce yourself? (e.g., your grade level and class)

2. Learning Experience and Challenges

- Have you encountered any difficulties or challenges in adapting to bilingual classes?
- What are your impressions of the teaching methods used in bilingual experimental classes? How do they differ from regular classes?
- Do you feel that the bilingual experimental class has been helpful in terms of learning outcomes? (e.g., improving your English comprehension and usage, understanding subject knowledge, or gaining new perspectives on the world)
- Do you think your school focuses more on English proficiency or bilingual competence? What are your thoughts on this situation?

3. Future Outlook

- What aspects of the current bilingual experimental classes do you think need to be changed? Why do you think these changes are necessary?
- If changes could be made, what adjustments would you like to see from your school or the government to improve the bilingual experimental classes?

4. Bilingual Policy

- What are your overall thoughts on the bilingual education policy? What do you think its main goals are?
- How effective do you think the school's implementation of bilingual education has been? Have your learning expectations been met?
- Based on the previous discussion, do you support the bilingual education policy? Why or why not?

1.3 Appendix B: Interview Guide for the Bilingual Class Teacher

1. Please briefly introduce yourself (subjects you teach, experience teaching in bilingual classes).
2. How is teaching in the bilingual experimental class different from regular classes in terms of content and methods?
 - How has the bilingual policy specifically influenced your lesson planning and instructional design?
 - Do you need to prepare additional English teaching materials?
 - How do you plan the proportion of English instruction and your language use strategies?
3. How do students respond to bilingual classes? (Learning attitudes, level of understanding, participation)
4. What difficulties or challenges have you encountered while implementing bilingual teaching?
5. For example: language proficiency, teaching materials, differences in student abilities.
6. Have you participated in any bilingual teaching-related training or support programs? How effective were they?
7. In your opinion, is the current bilingual policy providing sufficient support for teachers' professional development?
8. How do you view the impact of the bilingual policy on students' learning outcomes? (Language ability, subject knowledge, etc.)
9. On a school-wide level, what impact has the bilingual policy had on the teaching atmosphere or administrative operations?
10. If the bilingual policy is to continue, what areas do you think need improvement?
11. Do you support the continued implementation of the bilingual policy? Why or why not?
12. If you were to give advice to new bilingual class teachers, what would you say?
13. Are there any thoughts or experiences you would like to share, so that more people can understand the situation and needs of bilingual class teachers?