

FROM ZERO TO HERO: CUSTOMISING CLIL TEACHER TRAINING FROM THE DEMAND SIDE AND EVALUATING ITS EFFECTS IN TAIWAN

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ABSTRACT

This research examines the effects of a customised CLIL (Content and Language Integrated Learning) teacher training programme. We worked with the local government for this professional development (PD) programme to implement the CLIL approach in Taiwan. Thus, we ran a 3-week CLIL intensive training workshop for local secondary and primary teachers. They were trained in the principles and strategies of successful CLIL teaching. Their training needs were studied before and after the workshop, and their peers and trainers evaluated all participants' demonstrative teaching. It was found that their pedagogical content knowledge changed, and there was a significant gap in the performance evaluation. The peer teachers appreciated their colleagues' teaching, but the trainers seemed to have higher expectations. Significant differences in training needs were found between the two surveys, too. Before the training, the needs were more universal; all the teachers had very similar opinions as they were all new to the CLIL approach. After the workshop, however, the needs became more individualised as the teachers gradually transformed their teaching beliefs and attitudes and integrated their previous personal teaching experiences with new experiences. The research exhibits a model for designing a customised PD programme encompassing a procedure of needs analysis, training course design, teaching demonstration, observation, and evaluation.

Key words: CLIL, professional development, training needs, teaching performance

INTRODUCTION

CLIL, a rapidly growing approach used to promote bilingual education across many European and Asian EFL contexts, was coined by David Marsh and Anne Maljers (Marsh & Frigols Martín, 2012) as a methodology similar to, but distinct from, language immersion and content-based teaching. It is an approach in which a foreign language is used to learn a non-language subject in which both the language and the subject play a shared role (Coyle, 2006). CLIL is now treated as a continuum or generic term for all those approaches in which some form of specific and academic language support is offered to students to facilitate their learning of content through the target language or in which multilingual (or bilingual) and multicultural (intercultural) competence is pedagogically promoted during content learning (Räsänen, 2011).

Indeed, CLIL covers various intensities of content and language immersion (Aguilar & Munoz, 2014) and has become a preferred pedagogical approach (Mehisto & Marsh, 2011). The target language in CLIL programmes or courses can be any language, although often in English (Graddol, 2006). This is because English has become necessary to respond to students' need to move freely between countries (Camiciottoli, 2010). Therefore, CLIL can be used in different language contexts, ranging from monolingual (e.g. Slovenia), bilingual (e.g. regions of Spain and the Netherlands), multilingual (e.g. Basque Country, Cataluña) to plurilingual (e.g. Australia) settings. In Asian settings, CLIL is emerging rapidly; Hong Kong, where EMI (English as a Medium of Instruction) (a strong version of CLIL) has been used for several decades due to its colonial history, and Japan are perhaps the two most flourishing settings where the CLIL approach has been adopted in various forms at secondary and primary levels (Tsuchiya, 2020).

In 2018, the Taiwanese government officially announced its bilingual policy for 2030 to respond to globalisation, improve the English proficiency of the population, and compete with neighbouring Asian countries in the region (National Development Council, NDC, 2018). The policy was slightly modified in 2022 due to immense local criticism and doubts raised by linguists and language education

scholars and practitioners. To make the policy feasible and CLIL workable in Taiwanese schools, the availability of qualified CLIL teachers is becoming a priority. Thus, since the launch of the policy, a growing number of private language institutes or universities have begun to offer certified CLIL training courses for current secondary or primary teachers who are interested in using the CLIL approach. Still, such training has yet to be officially recognised. The preparatory courses designed and offered by the teacher training colleges are also not very clear or systematic. However, we argue that a well-established and customised CLIL PD programme to reduce the time, investment and effort of individual trial and error, applied to Taiwan's educational settings, is a high-priority need to make future implementations situated in a bilingual country possible.

As far as we know, CLIL research in Taiwan has been chiefly conducted at tertiary institutions. For instance, Yang and Gosling (2013, 2014) and Yang (2015, 2016a, 2016b, 2017, 2018a, 2019a, 2019b, 2020a, 2020b) have conducted much of this research at the university level, and the impact has been positive, including the evaluation of several self-produced CLIL course books, and its teaching effectiveness. The topics include programme/course evaluation, performance assessment, learning strategies, intercultural awareness, teaching practices, and material design. They are intended to be holistic enough to represent a standardised way of implementing CLIL in Taiwanese university contexts. However, the CLIL approach, promoted and implemented rapidly in Taiwan's secondary and primary schools, has received relatively less research attention. Although many local governments have provided training opportunities for in-service teachers to use the CLIL approach, these preparations are designed in segments without a rigorous and holistic system and evaluation, leading to wide variations in practice. Thus, this study has a dual focus. We demonstrate the process of initiating and executing a well-designed and contextually relevant CLIL training programme for Taiwanese secondary and primary CLIL practitioners in partnership with university CLIL researchers and trainers. Furthermore, we assess the impact of the professional development (PD) provision by analysing the demonstrative teaching of CLIL trainees and how their needs, beliefs, and awareness of CLIL

may have evolved over time. This study specifically addresses the following two research questions: 1. What are the changes in training needs, beliefs and awareness of CLIL education after the PD programme? and 2. What are the CLIL teachers' practices and the effect of the PD programme?

LITERATURE REVIEW

Professional Development for CLIL Practitioners

According to Lo (2020), one of the needs of teachers in CLIL is pedagogical content knowledge (PCK), i.e. teachers need to know what they will teach and how to teach it. In this regard, teachers are expected to be able to employ language and content in the delivery of CLIL (He & Lin, 2018; Morton, 2016). Further, Lo (2020) contends that language as indicated here, concerns 'academic language', which is the teacher's skills to expose students to how complex issues could be delivered through more accessible and more manageable means and adopting a subject-specific language. Relatedly, scholars have also designed frameworks to demystify the core competencies and needs of teachers in CLIL.

These frameworks include the 'CLIL Teachers' Competencies Grid' (Lo, 2020) and the 'European Framework for CLIL Teacher Education' (Lo, 2020; Marsh et al., 2012). At the core of these frameworks are competencies required by CLIL teachers, such as knowing the core theoretical underpinnings of CLIL, having a solid foundation in teaching language, content and its integration, planning of the subject, and having robust intercultural learning (Brüning & Purrmann, 2014; Lo, 2020). Lo (2020) echoes Marsh's (2010) and Pérez Agustín's (2019) position that CLIL teachers should possess dual or multiple types of expertise. This expertise should include but not be limited to language, content, best practices in teaching, and integrating these skills. In addition to these core competencies that cover language, content and integration skills required of CLIL teachers, one cannot overlook the relevance of assessment (Pérez Agustín, 2019).

In addition, what attitudes and professional skills CLIL teachers

need to teach a subject through the target language have been widely debated. In general, CLIL teachers should have subject knowledge, skills and applications and a good command of the target language. They are supposed to perform the dual role of content and language teachers (Morton, 2016). Since most CLIL teachers are content experts, they must be aware that the target language used for instruction is a medium and a learning target that enables learners to communicate in the subject-specific language in the L2. In this way, CLIL teachers can better believe in their roles and the importance of integrating content and language (Lo, 2020).

Vilkancienė and Rozgienė (2017) point out that the European Framework for CLIL Teacher Education helps design training courses for specific target groups of qualified content teachers. Some CLIL training programmes for pre-service teachers include language and cultural preparation, classroom observation, peer microteaching using innovative teaching methods and approaches, and various related activities (Novotná et al., 2001). In Lithuania, a project was implemented to train in-service and potential CLIL teachers to help them integrate language skills and CLIL methodology, including CLIL definitions, history, key concepts and contexts, critical principles of CLIL methodology, integration of language, content and cognition, types of activities, as well as practical lesson and module planning, materials design, assessment tools and other issues in CLIL (Vilkancienė & Rozgienė, 2017). In addition, there is always a gap between who the CLIL teacher is and what the ideal CLIL teacher should be (Lo, 2020). Thus, Wang et al. (2022) re-validated a framework to identify the training needs of prospective CLIL teachers, which can serve as a useful reference for preparing CLIL training courses in Chinese-speaking contexts.

As suggested by Novotná et al. (2001), an ideal CLIL teacher training course needs to develop teachers' competencies of 'verbal-visual-metacognitive' support in dealing with content and 'peer-affective' support in dealing with learners. The former means that CLIL teachers should show dominance and contextualisation of content language and present it intelligibly, including audio and visual stimuli such as gestures, mime or actions, visuals or realia, and real situations. CLIL also requires an interactive style of teaching. The use

of visual and multimedia aids should accompany verbal input. CLIL teachers should also teach thinking skills and learning strategies and highlight new material, clustering and framing content based on students' prior knowledge. The latter means that CLIL teachers should show understanding and sensitivity to individual learners' needs, create peer support or an interdependent and cooperative learning environment, and give immediate feedback in a positive way to overcome their affective barriers. Thus, the construction of an 'one size fits all' training programme to prepare qualified CLIL teachers does not seem to be an easy task.

As the Taiwanese government explicitly promotes CLIL education and proliferates it at all education levels, trained and qualified CLIL teachers are crucial for successfully implementing the approach. However, it is not as simple as saying that subject teachers who switch from L1 to L2 as the language of instruction can be considered CLIL teachers, or that native teachers can be naturally employed as CLIL teachers (An et al., 2019; Lo, 2020). To fulfil the dual focus of CLIL, teachers should be well equipped not only with content knowledge but also with language skills and knowledge to deliver content, skills to smoothly integrate both focuses, skills to facilitate classroom interaction, and skills to help learners develop L2 proficiency (Andrew & Lin, 2017; Dalton-Puffer, 2013). As aforementioned, several CLIL PD frameworks have been established and implemented in other contexts, but a robust CLIL approach and training must have a meaningful and flexible contextualisation (Coyle, 2007), taking local factors such as aims, expected outcomes, teachers' needs and students' backgrounds into account in diverse contexts (Coyle, 2007; Dalton-Puffer & Smit, 2013). Therefore, specific and tailored professional development for CLIL teachers seems essential while designing a PD programme for Taiwan teachers.

Although short-term or one-off CLIL training courses or workshops are common across the island, research into teachers' training needs still needs to be made available. What teachers currently lack, what they expect to learn about CLIL, and the extent to which their needs are met after the provision is in place require further investigation. This research into needs can help ensure better future planning (Lo, 2020).

Evaluating CLIL Teachers' Performance in CLIL Classrooms

To identify the needs of CLIL teachers before and after CLIL training, it is equally germane to evaluate CLIL training after it has been executed. According to Lo (2020) and Dalton-Puffer (2011), the extant literature on CLIL could be thematically categorised under product-oriented and process-oriented research. The product-oriented and process-oriented research approaches to CLIL scholarship cast light on how CLIL teachers evaluate performance. In this regard, while product-oriented research examines and evaluates the learning performance of students pursuing content acquisition through CLIL by comparing them against those studying using their first language, process-learning research encapsulates how CLIL is executed in the classroom and illuminates the extent to which these learning processes shape 'product-oriented' research (Lo, 2020).

Thus, 'product-oriented' research tends to evaluate the effectiveness of CLIL by emphasising the students' performance through CLIL. Studies that follow this line of CLIL research include but are not limited to Fernández-Sanjurjo et al. (2019), Navarro-Pablo and López Gándara (2020), and Feddermann et al. (2021). Fernández-Sanjurjo et al. (2019) concluded in their investigation of students' performance in Spain that students performed relatively better in using their first language (Spanish) to learn science than those who used a second language (English). In addition, lower socioeconomic backgrounds of students negatively affected their scores compared to those from affluent backgrounds. Paradoxically, Navarro-Pablo and López Gándara (2020) concluded that students in CLIL outperformed non-CLIL students in literature assessments in Spain. Therefore, one way teachers have been assessed is by evaluating the performance of students who have acquired content-based knowledge through CLIL.

Contrary to 'product-oriented' research, 'process-oriented' research seeks to explore the interactions between teachers and students and how content and language are integrated when imparting knowledge in the classroom (Lo, 2020). Extant literature that follows this way of researching CLIL includes Llinares and Lyster (2014), Lo and Macaro (2012), Dalton-Puffer, (2007), Lin and Wu (2015), and Morton (2016). In this regard, both studies by Morton (2015) and

Morton and Jakonen (2016) unveiled how teachers and students co-create knowledge through conversational analysis in the classroom.

Arguably, ‘process-oriented’ research does not directly evaluate teachers' performance but provides and examines critical issues that border on teachers' professional development and preparation expected in the classroom (Lo, 2020). Thus, this research raises concerns about the extent to which teachers need to be psychologically and pedagogically prepared at school.

In as much as ‘product-oriented’ and ‘process-oriented’ research in CLIL scholarship provides a nuanced understanding of ways of evaluating students' and teachers' performance as well as strategies to enhance the professional development of teachers, it is evident that ways of evaluating CLIL teachers after training have eluded scholars in CLIL scholarship. Given this, the current study, informed by its primary aim, explores ways CLIL teachers' professional development could be shaped through a robust evaluation procedure.

RESEARCH METHODS

As suggested by Pérez Cañado (2012), the research design and methodology of future CLIL studies should combine mixed methods, adopt triangulation, and use multivariate procedures; therefore, in the present study, both quantitative and qualitative methods were used for the collection and analysis of the data. Thus, the present study adopted a mixed methods approach, using a combination of qualitative and quantitative approaches, drawing on the advantages of each (Yang, 2018b). Following the notation of Morse (1991, 2003), this was a QUAN plus QUAL explanatory mixed methods design. Researchers have advocated the triangulation of data (Gao, 2007).

The present study combined different types of data and analysis methods to shed light on the issues under investigation (Denzin & Lincoln, 1994). Therefore, an inductive approach was adopted to generate the themes and categories that were derived from the analysis and to interpret the data (Arno-Macia & Mancho-Bares, 2015). The data collection methods used for this study included questionnaire surveys of teacher needs for CLIL training and evaluation of CLIL

micro-teaching lessons.

We designed a customised CLIL teacher training programme in collaboration with a local government in 2022, recruiting both secondary and primary teachers from the area where an internationally renowned semiconductor company is setting up a new chip plant, bringing in many foreign employees and technicians and their families, and making English a vital tool for communication in this neighbouring area. This tailor-made PD programme was partially based on the training structure offered by the University of Queensland to CLIL teachers and partially on the trainers' former experiences of coaching and researching CLIL teachers, in the hope of fulfilling the initial aims of raising local teachers' PCK in the CLIL approach expected by the local city government. The proposed course structure is shown in Table 1. These two CLIL trainers were experienced CLIL/EMI teachers at a national polytechnic university. They had been well-trained in using the CLIL approach at several renowned CLIL training institutions, such as the British Council, the University of Utrecht and the University of Queensland. In total, 36 teachers from different subject areas attended the workshop.

Table 1

Course Structure of the CLIL Teacher Training

	Primary	Secondary	Topics	Course descriptions	Hours
1	7/20 Wed	7/19 Tue	1.The CLIL approach	Session outcomes By the end of this session, teachers will be able to: -- understand the history and rationale of CLIL --learn the key terminologies used in CLIL	3
			2. CLIL foundations: The 4Cs	Session outcomes By the end of this session, teachers will be able to: --analyse a typical CLIL session --identify the components related to the 4Cs of CLIL	3

	Primary	Secondary	Topics	Course descriptions	Hours
2	7/21 Thu	7/22 Fri	3. Adapting written materials	Session outcomes By the end of this session, teachers will be able to: - identify problems learners encounter with texts - present content effectively - utilise scaffolding techniques to support learners	3
			4. Adapting lecture delivery	Session outcomes By the end of this session, teachers will be able to: -- compare elements of effective lectures -- create effective lectures	3
3	7/25 Mon	7/26 Tue	5. Mini-lesson presentation	Session outcomes By the end of this session, teachers will be able to: -- demonstrate their knowledge of CLIL through adapting a piece of teaching material and visual aid	3
			6. Activities in the classroom (I)	Session outcomes By the end of this session, teachers will be able to: -- design and critically evaluate different communicative activities using texts	3
4	7/28 Thu	7/29 Fri	7. Managing cognitive and linguistic demands in the content classroom	Session outcomes By the end of this session, teachers will be able to: -- share current challenges and opportunities in their teaching contexts -- adapt academic texts to help learners access texts in English	3
			8. Assessment in the CLIL classroom	Session outcomes By the end of this session, teachers will be able to:	3

				-- understand the principles of designing CLIL assessment -- accommodate linguistic, content and cognitive developments in designing CLIL assessments -- design a rubric for CLIL assessment	
5	8/2 Tue	8/1 Mon	9. Teaching Plans		3
			10. Activities in the classroom (II)	Session outcomes By the end of this session, teachers will be able to: -- design and critically evaluate different communicative activities using texts	3
6	8/8 Mon 9:00~12:00		11. Teaching Plans	CLIL teaching demonstrations in other contexts and evaluation	3
7	8/12 Fri 9:00~12:00	8/11 Thu 9:00~12:00	12. Final presentation	Session outcomes By the end of this session, teachers will be able to: -- demonstrate a CLIL approach teaching -- critique and comment on a peer's CLIL teaching	3

The 36 trainees of the CLIL programme all came from the two neighbouring districts of Kaohsiung City, where the aforementioned new chip plant is based. Currently, they teach the domains of non-testing subjects such as PE, performance arts, music, and integrative activities at local primary and junior high schools. They have taught for 10 to over 20 years, but none have received CLIL training. Acknowledging the importance of English learning and its use across the curricula, they voluntarily attended this CLIL teacher training programme. They also know they must implement CLIL lessons in school and be observed once they complete the training.

To understand how CLIL teachers' needs, perspectives and awareness of the CLIL approach may change before and after the training, the participants completed an online survey developed by

Wang et al. (2022) about their training needs and perceptions of CLIL training before and after the workshop. It should be noted, however, that ten senior high school teachers also completed the post-training survey, making a total of 46. They had been trained elsewhere using the same course structure by the same trainer but were invited to participate in this post-survey. In addition to the descriptive analysis, a *t*-test was also carried out to see if there were any differences in teachers' needs and perceptions of CLIL teaching after the intervention.

To evaluate how the CLIL trainees performed and the effect of the training provision, in the last week, all 36 participants had to prepare a demonstration lesson of about 20 to 30 minutes, and they were divided into primary and secondary groups. The 17 teacher demonstrations in the latter group were observed and evaluated by peers and a trainer. The De Graaff et al. (2007) tool for observing a CLIL lesson was used. When a teacher demonstrated the lesson, all the other peers and the trainer had to complete the observation tool. All the participating teachers consented to share their evaluation forms for the research purposes; in total, we collected 127 and 17 forms from the peers and the trainer, respectively. We also compared the results of the two groups to see if there were any discrepancies. SPSS was used to analyse the participants' responses descriptively, and we also compared the judgements made by the trainees and the trainer. In addition to the *p*-values, we report the effect size (ES) as it could be more informative in inferential applied linguistics studies (Wei et al., 2019).

RESULTS AND DISCUSSION

This section presents our initial findings from this CLIL PD project. The data we have collected comes from the different stages and is presented chronologically.

Changes in training needs, beliefs and awareness of CLIL education after the PD programme

A crucial factor in making or breaking CLIL teaching is whether

we have qualified and passionate CLIL teachers. Therefore, we collaborated with the local municipal government in mid-2022 to discuss the possibility of offering CLIL training to secondary and primary teachers interested in implementing the CLIL approach in teaching their subjects. Fortunately, the city government favoured our proposal, so a bespoke 4-week CLIL teacher training course was designed and delivered in the summer of 2022. The CLIL teacher training workshop was attended by about 35 teachers in total.

The 3-week intensive course of 12 hours per week, 36 hours in total, was designed and delivered by the researcher and his colleague (see Fig. 1). All important facets of using the CLIL approach for new teachers were included in the course structure. This could be the first holistic and comprehensive structure of a CLIL training course for the local education authorities. This training can ensure that the teachers are equipped with the necessary CLIL knowledge and skills to be able to implement the CLIL approach in their content teaching.

On the first and last day of the workshop, participants were asked to complete an online survey on training needs that was developed by the researcher and his collaborators (Wang at al., 2022). The purpose of the survey was to find out whether or not there had been a change in teachers' understanding and needs in relation to CLIL as a result of the intervention, and if so, to what extent. It should be noted that the number of teachers who participated in the training before and after the training workshop was not the same. This is because a group of senior high school teachers did not participate in this training workshop specifically designed for teachers based in Kaohsiung City, but had been individually trained by the PI (Principal Investigator) in a different location. As the trainer used a similar training structure and curriculum, these senior high school teachers were also asked to complete the online post-training survey.

The results show the teachers' training needs and perceptions of CLIL before and after the workshop and the results of the *t*-test. The pre-training survey's mean scores for each question can only be described as moderate, with most around 2.5 (0-5). The results show that the pre-trained teachers did not believe that their students would be able to participate in a CLIL lesson due to their low English proficiency, they did not understand too much about how to integrate

multimodality in CLIL teaching, and they might have difficulties in conducting CLIL assessment in the classroom. However, they agreed that the CLIL approach emphasises interactive learning and that CLIL materials should be selected, adapted or reproduced according to the context. Their responses highlight the need for and importance of providing a CLIL training programme, including practical and methodological practices such as planning, creating, and assessing CLIL lessons (Murillo-Caicedo, 2016).

However, their attitudes towards the CLIL approach changed slightly in the post-training survey. The mean scores of almost all the items increased to some extent. However, they were still concerned about their level of English in order to successfully teach CLIL lessons in the future and needed more confidence in carrying out assessments in CLIL teaching. Their responses before and after the training workshop showed that training and guidance is necessary and should be continuous and supportive (Escobar Artola, 2022, 2023), as changes in teachers' attitudes or perceptions can be gradual. Without ongoing support, teachers would likely be reluctant to adapt or change. In addition, their responses also identified the urgent need to improve teachers' English language skills (Pérez Agustín, 2019), how to conduct CLIL assessments, and how to include intercultural elements in CLIL lessons no matter if they have previous training or experiences (Pons Seguí, 2019). The feedback can help redesign the provisions in the future.

A *t*-test analysis was performed to see if there were any significant differences in teachers' perceptions, attitudes and needs regarding CLIL before and after the training. Seven items (i.e. 3, 11, 24, 25, 39, 49 and 50) out of 51 showed significant differences (as shown in Table 2). The important information derived from these items indicates that the teachers have become more aware of integrating multimodal resources in designing CLIL lessons and that assessment tools in CLIL lessons should differ from those used in ordinary classrooms because CLIL lessons have different learning objectives. Noticeably, the teachers reported that their students' improved competencies of L1 in CLIL lessons. This response aligns with the argument that bilingual education may benefit both L1 and L2 language development equally (Duarte, 2011) as bilingual learners have to

continuously use their L1 and L2 with great effort in the classroom to demonstrate their cognitive development and creative capabilities (Jawad, 2021).

Most importantly, respondents also expressed a significantly higher level of agreement in their willingness to participate in continuous professional development in the future. This shift in teachers' beliefs may be one of the most important outcomes of this CLIL training workshop. Whether bilingual (multilingual) education helps shape identity, belief or personality has been debated extensively in the research (Wei et al., 2022). We acknowledge that the shift in teachers' beliefs and awareness of CLIL education should continue and take time. As Lo (2019) argued, the relationship between teacher change and professional development is very complicated, and the factors that influence whether teachers are willing to change and how they change are also diverse and contextual. These factors deserve further investigation in the future.

Table 2*The Items with Significant Differences on the T-Test*

Item	test	Mean	S. D.	S. E.	p	Cohens' d
3. The Chinese competencies of my students have improved due to their participation in bilingual class.	pre	1.94	.893	.149	.020	0.529
	post	2.41	.884	.130		
11. Learning based on homework is emphasised.	pre	1.83	.775	.129	.010	0.589
	post	2.26	.681	.100		
24. Electronic whiteboards are used in bilingual class for interaction.	pre	2.69	.920	.153	.026	0.505
	post	3.15	.894	.132		
25 Communication is mediated by computer in bilingual class.	pre	2.83	.737	.123	.024	0.514
	post	3.22	.758	.112		
39. I am able to articulate CLIL-specific assessment needs and goals and to develop and implement related assessment tools.	pre	2.58	.732	.122	.036	0.473
	post	2.91	.661	.097		
49. I joined the language training in CLIL workshops before.	pre	1.64	.798	.133	.050	0.448
	post	2.07	1.083	.160		
50. I joined CLIL teacher training courses before.	pre	1.56	.773	.129	.004	0.682
	post	2.22	1.134	.167		

Evaluating CLIL Teachers' Practices and the Effect of the PD Programme

After the training programme, to see whether or not the teachers understood the CLIL approach and know how to implement it, i.e., their PCK in future classes and to judge the overall effect of designing a customised PD programme, the participating teachers were asked to demonstrate their teaching using the self-designed CLIL materials. All the teachers had to do a trial CLIL lesson, and they also had to observe

and evaluate the instruction of their colleagues. The CLIL trainers evaluated the teachers' practice teaching. To evaluate the teachers' performance and effectiveness in CLIL demonstrations, we used the CLIL teaching observation tool developed by de Graaff et al. (2007). In this section, we present the differences or similarities in the evaluation of CLIL teaching between the peer teachers and the CLIL trainers, to show how the CLIL teachers and the trainers respectively perceived the usefulness of the training provided to meet the requirements of conducting CLIL teaching in the classroom and to understand if there was a gap between the two parties.

The descriptive results of all trained CLIL teachers who completed a peer evaluation of their colleagues' demonstrative teaching show that, in general, CLIL teachers rated their peers' teaching quite highly (0-7), especially in the areas of 'The teacher facilitates exposure to input at a (minimally) challenging level' (Dimension 1: items 1.1 to 1.5) and 'The teacher facilitates meaning-focused processing' (Dimension 2: items 2.1 to 2.4) with an average of over 6.0. However, in the areas of 'The teacher facilitates form-focused processing' (Dimension 3: items 3.1 to 3.5), 'The teacher facilitates opportunities for output production' (Dimension 4: items 4.1 to 4.6) and 'The teacher facilitates the use of strategies' (Dimension 5: items 5.1 to 5.4), the averages of the three dimensions are all below 6.0, although still at a high level. The demonstration lesson was shorter than normal, so teachers had to adapt and choose what they wanted to demonstrate and adjust the talk to fine-tune the content. All the trained teachers were content experts with a minimum of 10 years to a maximum of over 20 years of teaching experience and, therefore, had no difficulty identifying what content was correct and needed to be emphasised. As a result, all the demonstrations received very high scores in the peer evaluation, which also indicates the importance of conducting micro-teaching in CLIL training (Tommaso, 2020).

However, since the demonstration time was limited and the audience was made up of colleagues and the CLIL trainers, the teachers did not put too much emphasis on the correct use of language because the audience's responses were all 'correct' without giving the CLIL teachers a chance to correct the problematic forms. Also, due to

time constraints, the teachers were given little time to ask for the audience's feedback, let alone do any writing practice. The situation is expected to improve when there is more class time and the audience comprises natural CLIL learners. However, the teachers also gave high scores (around 5.5 on average) on the last dimension, in contrast to what the trainer believed and observed. This peer evaluation showed that new CLIL teachers showed empathy, sympathy and consideration for their colleagues. Instead of being strict, they chose to be more encouraging, as everyone was new to the CLIL approach. Their assessment implies that demonstrative teaching is a necessary component in CLIL training, allowing the trainees to collaboratively discuss, create, learn, apply and share the principles and tools in the CLIL approach (Murillo-Caicedo, 2016).

Although there was generally a high level of agreement in the descriptive results of the peer evaluation, we also conducted a *t*-test and a one-way ANOVA to compare whether the peer evaluation would differ according to the school level and teaching experience variables. The results are significantly different. Ten out of 24 and 13 items out of 24 showed significant differences ($p < .05$) under the variables of school level and teaching experience, respectively, and it was found that the items with significance showed a tendency of clustering. For example, the trained teachers from different school levels responded differently to whether the teachers facilitated exposure to input and meaning-focused processing in the demonstrations. Secondary school teachers scored significantly higher than primary school teachers on these two dimensions. These divergent responses may be due to differences in teaching styles between primary and secondary education. Secondary school teachers were surprised by the continuous repetition of correct forms, exaggerated non-verbal language and loud voice used by primary school teachers in teaching, as these teaching styles may not be shared in secondary schools. This difference shows teachers can learn from each other, even from different school levels.

Another significant difference was found when we compared the responses to the variable of teaching experience among three groups (teaching experience between 10-15 years, 16-20 years and over 21 years), even though they were all considered experienced teachers.

These differences were found in the responses to the items in the dimensions of whether teachers facilitated exposure to input, meaning-focused processing, and the use of strategies. Naturally, those with less teaching experience tended to score higher than their peers with more teaching experience and vice versa. Unlike dimensions 3 and 4, which are more relevant to the language aspects and where each teacher similarly rated others, the other three dimensions, 1, 2 and 5, seem to have less to do with the CLIL approach, but instead with the effectiveness of teaching, and thus relied heavily on the accumulation of teaching experience. These different responses indicate the importance of continuing professional development (CPD) for CLIL practitioners (Murillo-Caicedo, 2016; Pons Seguí, 2019) and concerns about the inclusion or exclusion of CLIL trainees from different backgrounds and the design of training to meet different needs.

In summary, this dual-focused research introduces and evaluates a collaborative, customised training programme for CLIL teachers at Taiwan's secondary and primary levels in partnership with the local authority. The teacher training needs survey shows the differences after the workshop. Before the training, the needs were more universal; all the teachers had very similar opinions as they were all new to the CLIL approach. After the programme, however, the needs and understanding of CLIL became more individualised as the teachers gradually transformed their teaching beliefs and attitudes and integrated their previous personal teaching experiences with new experiences. Similar to the previous training provision, our CLIL teacher education programme also brings significant and positive impacts on teachers' belief, needs, confidence and willingness to apply CLIL principles (Legarre, 2022; McDougald & Pissarello, 2020). Furthermore, in the teaching demonstrations, the peer teachers showed a higher inclusive and supportive attitude, but the trainers seemed to have a relatively reserved judgment. This training on using the CLIL approach exhibits a model for designing a customised PD programme encompassing a procedure of needs analysis, training course design, teaching demonstration, and evaluation. It serves as an example of how close collaboration among a local government, CLIL trainers, and trainees can raise novice CLIL teachers' awareness and

help them build teaching competencies '*from zero to hero*', and it also suggests that the need for future CLIL PD may become more and more diverse, personalised, and localised. Thus, a high degree of flexibility and context-sensitivity in CLIL PD provision is always essential (Dalton-Puffer & Smit, 2013).

PEDAGOGICAL IMPLICATION

Combining the previous CLIL training designs proposed by CLIL educators and the findings in this research, we synthesise the following implications and suggestions for schools or local city governments if they hope to apply the CLIL approach to realise bilingual education (Lo, 2023).

Empower Potential CLIL Teachers 'From Zero to Hero.'

Our successful teacher training workshop demonstrates that potential CLIL teachers need professional development before using the approach in the classroom. A well-planned professional development workshop tailored to the CLIL approach can help teachers understand the rationale behind CLIL and its 4Cs (content, communication, cognition and culture) principles and prepare them to embrace the differences between being a subject teacher and a CLIL teacher. Workshops can not only increase CLIL teachers' awareness and sensitivity to the target language, such as the features and genres of subject-specific language and the difficulties or challenges learners may encounter when taught in this new approach but can also equip CLIL practitioners with L2 teaching strategies (Cammarata & Haley, 2018; Lo, 2020). Unlike language teachers, content teachers such as CLIL teachers do not have a background in TESOL, which would typically discourage subject teachers from using the CLIL approach. Therefore, we encourage schools or local education authorities to provide CLIL workshops, emphasising how teachers can scaffold learning using effective language learning strategies.

A holistic model of CLIL pedagogy and teacher training proposed by Lo (2020) can be a good starting point for planning these CLIL workshops. The process begins with understanding teachers'

professional development needs using the CLIL approach and designing a customised training structure. Professional support is then provided on-site. CLIL trainers or consultants provide immediate guidance, demonstrate practices, diagnose performance and provide feedback in a training workshop. The trained teachers are then required to identify the school's Language Across the Curriculum (LAC); in other words, which elements of L2 are to be integrated into subjects must be located in each school or classroom context. When teaching CLIL lessons in real classrooms, teachers inevitably face difficulties, feel depressed, or gain success, and these experiences will lead to further needs for continuous professional development and sharing. It is proposed that a professional community be formed in each context as a dialogue platform for CLIL teachers to share, learn and grow professionally.

Facilitate Cross-Curricular Collaboration

A single teacher would likely attempt to run a successful CLIL course with the cooperation and support of his or her colleagues. As we observed in the CLIL training workshop, the demonstration lessons and the follow-up school/classroom visits in this project, CLIL teachers never worked alone but always as a team. A collaborative CLIL teaching team requires effort and commitment from language teachers, subject teachers and administrators. They should start with a staff meeting, map the curriculum, and set objectives. Next, they have to decide whether the teachers will adapt the currently available teaching materials, adopt and revise the authentic materials used by the L2 native speakers, or write/produce their teaching materials as we did in the project. After that, they can use the materials to teach in the actual classroom or have pre-teaching in a team to get feedback to revise before the actual practice. Finally, teachers need to evaluate both their performance and the performance of the pupils. Self-evaluation, peer evaluation or external evaluation can be used to understand the extent to which the objectives have been achieved.

This cross-curricular collaboration considers the language curriculum, the content curriculum, and the bilingual policy of the

school and hopes to promote interaction, negotiation and mutual understanding among the parties. It is argued that this mechanism can be very helpful in improving teachers' language awareness and strategies, mapping, adapting and developing the ongoing curriculum, and eventually changing teachers' pedagogical focus and practices (Lo, 2015). In addition, administrative staff can contribute by ensuring that the professional support provided by the school and the programme designers is consistent. Sufficient training and supervision in implementing training programmes must also be ensured (Pham & Unaldi, 2022). Thus, successful CLIL implementation depends heavily on the efforts of all teachers and staff in a school.

Design a Healthy Context for Implementing CLIL at Full Scale

When we argue for a healthy CLIL course, we must first have a healthy and open mind to see how CLIL can help bilingual education before we reject it completely. Implementing CLIL is not about teachers or school reputation but about achieving a common good for our students in a school. Change in education indeed causes doubt, uncertainty, stress and anxiety, but this is a must before change becomes possible and successful. We argue that a healthy and complete context for implementing CLIL education must involve subject experts, frontline teachers, and language and curriculum experts to form a centralised CLIL committee to develop CLIL education. As suggested by Lo (2023), to implement an entire CLIL education, the following issues should be highlighted and addressed: coherent, continuous, sustainable and transferable CLIL practice in key subjects; professional development for teachers; more time and human resources to invest; and the need to build leadership, consensus and teamwork. Rather than leaving CLIL teaching to new or young teachers, a healthy and prosperous CLIL environment engages all staff and teachers in a school to form a community to promote bilingual education. Collaboration promotes teachers' professional development and students' learning outcomes. To create a healthy environment to ensure complete and effective implementation of CLIL, Lo (2014) suggested considering the following factors:

intrapersonal factors (e.g. teachers' beliefs in language across the curriculum and collaboration, workload), interpersonal factors (e.g. power relations, teacher relations), and contextual factors (e.g. leadership, support from school administration, school culture). Stakeholders' beliefs and managerial support should be maximised and consistent with CLIL provisions (Wei & Feng, 2015). These suggestions highlight the importance of planning bilingual education from a holistic and comprehensive perspective in a school.

CONCLUSION

Recently, CLIL education has been proliferating across different levels of education island-wide to promote bilingual education in Taiwan. Learning content through an L2 is supposed to equip learners with higher exposure to the L2, chances to use the L2, authentic contexts to understand the L2 and motivating contexts to use the target language (Coyle et al., 2010; Llinares et al., 2012). However, the CLIL approach has been interpreted and implemented widely in Taiwan due to its infancy and experimental nature. Without regulated guidelines, each local government and school implements the CLIL approach in different ways, quickly leading not only to infrastructural incompatibilities at the management level but also to confusion, reluctance, and even resistance among teachers and learners at the frontline. It is recognised that CLIL is better implemented contextually to suit different emphases and expectations in other contexts. However, it is advisable to establish a guideline on how the CLIL approach in Taiwan should be implemented by stakeholders, especially in a top-down hierarchical educational system like Taiwan. Therefore, the present research shows how CLIL teacher education can be realised from a local experience. Our training programme consists of a workable model that clearly illustrates systematic professional development to prepare CLIL practitioners, close collaboration among subject and language teachers, researchers and trainers to produce materials and conduct classroom practices and regular evaluation of how CLIL teachers and students perform and to what extent the pre-set goals are achieved. This structure is not

implemented linearly but rather in a cyclical process to continually review and renew stakeholders' mindsets, available tools and resources, and teaching effectiveness. We hope that our example can benefit Asian EFL contexts in promoting bilingual education.

To conclude, it is agreed that mastering two languages in a globalised and interdependent society is vital to facilitate mutual communication in all facets. However, to eventually implement bilingual education in bilingual contexts, enforcing the policy and setting a time limit to expect its success would be implausible. Convincing subject teachers that implementing bilingual education promotes spontaneity, communication, and the common good between them and the pupils can be the first essential step. Although we are trying to provide a CLIL teacher training example for starting bilingual education in Taiwan, we also argue that instead of following any specific approaches or models of teacher PD, schools and educational authorities need to examine what they have continuously and do not yet have to design their bilingual teacher training system and make this system supportive and flexible in diverse contexts. Bilingual education should be implemented gradually and contextually, and it requires long-term curriculum planning, teacher preparation investment, practical experience accumulation, and holistic evaluation in a cyclical process. We also acknowledge that the post-training effect of this PD design needs to be further explored to verify its effectiveness in real CLIL classrooms in the future so that the programme can be consistently modified and revisited to fit the context more closely.

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