e-TEALS

An **e**-journal of
Teacher **E**ducation and
Applied **L**anguage
Studies

Moving CLIL forward: towards sustainable educational practices

Number 16 | 2024

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MOVING CLIL FORWARD: TOWARDS SUSTAINABLE EDUCATIONAL PRACTICES

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This e-journal is sponsored by **CETAPS** (Centre for English, Translation and Anglo-Portuguese Studies) with a view to providing a forum for the publication of papers which reflect the wide range of scientific perspectives included within the study of English. *e-TEALS* is a peer reviewed journal which specialises in the didactics of English as a second or foreign language, and which seeks to reflect the latest research in the field. The editors welcome articles that describe classroom-based research, reflecting a wide range of scientific perspectives included in the study of English, such as pedagogical innovation, preparation of materials, curricular studies, assessment practices, intercultural studies, approaches to teacher training and other areas of applied language studies. Classroom-based research could either take the form of original research articles on the teaching and assessment of English, or could report studies carried out by teachers investigating their own teaching in their own classrooms. The journal is supported by the Faculdade de Letras, Universidade do Porto and the Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa.

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Submitted articles should be clearly and coherently written so that they are internally consistent and accessible to our readership with a balance between theory and practice in all submissions. All descriptions of practice should be related to underlying theoretical principles. We are interested in receiving articles that describe carefully planned and executed classroom-based action research, provided that the project is designed to throw light on a topic which is in itself of interest to our readers.

Articles must demonstrate an awareness of other, recent work carried out in the area and have relevance to teachers working in varied contexts. Articles should contain no more than 15 references, with a heavy bias towards publications since the year 2000.

Articles should be between 4,000 words and 4,500 words in length. It is not possible to accept articles over 4,500 words long. Please give a word count at the end of your article. Word counts should include tables and appendices but may exclude the abstract and the list of works cited.

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All submissions are blind reviewed by two members of the Editorial Panel. In order to maintain anonymity during the peer review process, please avoid stating your name when making a reference to your own work, either in the text or works cited and use 'Author' instead.

Before submitting your article, please familiarize yourself with previous editions of e-TEALS and the MLA style it employs.

[revised and adapted from the ELTJ guidelines]

e-TEALS

An e-journal of Teacher Education and Applied Language Studies

MOVING CLIL FORWARD: TOWARDS SUSTAINABLE EDUCATIONAL PRACTICES

This special edition of **e-TEALS** was brought to you by:

e-TEALS no.16 | 2024
An **e**-journal of **T**eacher **E**ducation
and **A**pplied **L**anguage **S**tudies

Introduction

Margarida Coelho, Margarida Morgado and Maria Ellison | - CETAPS

This is the second e-TEALS Special Edition about Content and Language Integrated Learning (CLIL). This edition is a collection of papers and workshops presented at the 3rd International Working CLIL Colloquium held at the Faculty of Arts and Humanities of the University of Porto on 13 and 14 July, 2023. The theme of this Colloquium was *Moving CLIL forward: towards sustainable educational practices.*

After over two decades of exponential growth which have seen CLIL/bilingual education evolve across continents, the 3rd Colloquium was an opportunity to take stock and explore appropriate strategies, ideas, and impactful educational research that is capable of moving CLIL/bilingual education forward and making it a sustainable practice across educational levels. The contributions of this volume are timely responses to our call. They represent CLIL at different levels of education from pre-school to higher education and are written by authors engaged in teaching at these levels.

The first article is from pre-primary education. Nóra Ní Bheaglaoich and T.J. Ó Ceallaigh explore the experiences of three elementary teachers using CLIL to teach Mathematics through Irish in a six-week Community of Practice (CoP) model in an English-medium school in Ireland. The study aims to understand how teachers develop their CLIL knowledge and skills and the key findings point to increased teacher confidence, heightened language awareness, and a greater understanding of professional development needs in CLIL instruction.

The next two contributions are from secondary education. The study of Natacha Diaz investigates the use of digital tools within a CLIL programme for the subject of Social Science with the purpose of developing digital literacy. Although her results suggest that the use of digital tools is not sufficient to significantly

develop digital literacy, their implementation within a CLIL programme which combines project-based and cooperative learning can be highly effective.

The study of Huseyin Ozdemir explores the attempts of this mathematics teacher to develop mathematical literacy in English in a secondary school in Turkey. From the starting point of a needs analysis into students' understanding of target mathematical terms in English within mathematical questions, the author develops a strategy with his students to support their understanding of key terms which allowed them to solve mathematical problems. The experiment paves the way to further ventures into CLIL for this mathematics teacher and others of this subject.

Two contributions from higher education follow. Verónica Alarcón-García and Lola López-Navas explore the implementation of a Pluriliteracies Approach to Teaching for Deeper Learning (PTDL) in a bachelor's program in Translation and Interpreting at a Spanish online university. They propose a "Deeper Learning Episode" which aims at transforming a traditional language course into a content-based program, promoting linguistic mediation, critical thinking, and intercultural communication. The authors conclude that this approach can renew language teachers' sense of identity and enhance students' learning experiences.

Isabele Lavado explores interdisciplinary collaboration in higher education between an English for Specific Purposes (ESP) teacher and a content teacher. Results highlight the importance of sharing clear learning objectives, active engagement in lesson planning and teaching of both practitioners as well as adequate resources. The study provides insights into how teaching practices can be improved to promote successful interdisciplinary initiatives.

The volume ends with a description of a workshop given at the Colloquium. Leonel Fuentes Moncada describes in detail a workshop he led on social emotional learning principles and how they can inform CLIL practice. Practically-oriented, the workshop describes step by step concepts, teacher experiences, lesson demonstrations, assessment, online resources and materials, and student motivation as well as teacher resistance and resource limitations.

We are grateful to all who have contributed to this Special Edition.

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Building CLIL teacher knowledge: Teaching Mathematics through Irish in English-medium elementary schools in the Republic of Ireland

Nóra Ní Bheaglaoich and T.J. Ó Ceallaigh | University College Cork, Ireland

Abstract

Content and Language Integrated Learning (CLIL) is increasingly seen as a possible solution to enhance the teaching of the Irish language in English-medium schools in the Republic of Ireland, where Irish is compulsory and taught as a minority second language (L2) (Department of Education and Skills (DES), 2018, 2022). Despite heightened governmental focus on CLIL, challenges persist in its practical implementation, particularly regarding the development of teachers' knowledge base for CLIL (Fahey, 2021). This paper reports on three elementary teachers' lived experiences as they participated in a six-week Community of Practice (CoP) model for CLIL professional growth. Utilising a variety of sources (i.e. focus group interviews, researcher field notes, participant reflective diaries and CLIL lesson plans), data were collected from three teachers as they implemented CLIL for the first time in their kindergarten classrooms, teaching 4–5-year-olds. The paper firstly presents a critical review of the relevant literature base and synthesises findings in an attempt to ascertain what is known from extant studies. Following this, the study is delineated, and significant findings regarding enhanced teacher language confidence, heightened language awareness, and increased awareness of professional development needs in the language of CLIL instruction are presented. Notably, tensions surrounding the augmented language proficiency expectations placed on teachers when instructing Mathematics through the medium of Irish are also acknowledged, particularly as they navigated the linguistic intricacies of planning within a disciplinary curriculum area using a minority language. In conclusion,

suggestions for systemic advancements are considered, and potential avenues for future research are proposed.

Keywords | Content and Language Integrated Learning (CLIL); teacher professional development; language awareness; elementary education

1. Introduction

In line with international developments in bilingual education, Content and Language Integrated Learning (CLIL) is gaining traction in educational debate in the Republic of Ireland (Harris & Ó Duibhir, 2011; Department of Education and Skills (DES), 2018, 2022), particularly at elementary level. Yet, to date, few studies identify the CLIL-specific competences demanded by the elementary English-medium setting. The primary purpose of this paper is to explore the development of a teacher's CLIL knowledge base within the context of teaching Mathematics through Irish in an English-medium elementary school in the Republic of Ireland. By investigating this aspect, the paper seeks to provide insights into the pedagogical strategies and language awareness required for effective CLIL implementation at the elementary level, contributing to a deeper understanding of CLIL practices and demands in Irish elementary education. The paper begins with an overview of the elementary education landscape in Ireland, followed by an examination of CLIL in English-medium elementary schools. The discussion extends to the enactment of CLIL at the elementary level and the critical role of CLIL Teacher Language Awareness. An interventional study assessing CLIL's impact on student learning is then outlined and findings presented, concluding with insights and implications for elementary education in the Republic of Ireland.

2. Educational landscape at the elementary level in the Republic of Ireland

The Irish language stands as Ireland's first official language, with 1.4% of the population over thirteen years old reporting daily usage (Central Statistics Office, 2022). Irish holds a distinctive position within Ireland, bearing major cultural significance and continuing as a dynamic, living language in modern Irish society. From an educational perspective, the Irish language is taught as an obligatory subject from elementary school to the end of secondary education in Ireland (Ó Ceallaigh & Ní Dhonnabháin, 2015). In English-medium elementary schools, which constitute more than 90% of all schools at this level, Irish is instructed as a second language (L2). Substantial concerns regarding the instruction and acquisition of the Irish language in English-medium elementary schools have been documented (DES, 2018). In the 2018 report, a notable portion of lessons were deemed unsatisfactory in terms of fostering students' language

proficiency and Irish language learning, as well as the utilization of teaching strategies. The report highlights the absence of opportunities for dialogue, discussion, and collaborative activities. This underscores the nuanced nature of Irish language instruction, revealing significant deficiencies in pedagogy that hinder the attainment of learning objectives outlined in the primary language curriculum (The National Council for Curriculum and Assessment (NCCA), 2019). Despite persistent challenges in Irish language education (DES, 2018, 2022), there remains a scarcity of research offering solutions. Nevertheless, the findings of these reports have spurred initiatives for systemic change (Harris & Ó Duibhir, 2011; DES, 2022), aiming to revolutionise Irish language instruction in English-medium elementary schools by harnessing the potential of CLIL.

3. Content and Language Integrated Learning (CLIL) in English-medium elementary schools

A revised language curriculum (NCCA, 2019) has highlighted new possibilities for teaching Irish in English-medium elementary schools, with specific learning outcomes identified. Recognizing the unique nature of English-medium schools as Irish language learning environments, CLIL is proposed as a crucial approach. However, there is a notable lack of professional development (PD) opportunities for elementary teachers to gain CLIL pedagogy skills. International debate demonstrates that instructional scaffolds are needed for teachers to develop CLIL teachers' knowledge base and equip them with the necessary knowledge, skills, and adequate competencies to implement the contextual change necessary for CLIL pedagogy (Ball et al., 2015; Cammarata, 2016; Cammarata & Ó Ceallaigh, 2020; Coyle et al., 2010).

While the discussion to date has indicated the fragile nature of the Irish language within the Irish educational system in English-medium schools, CLIL has been identified as a key driver in curriculum reform, as echoed in the most recent Chief Inspectorate Report (DES, 2022). The 2022 report urges active exploration of opportunities to expand CLIL to enhance the use of Irish in English-medium primary schools. It acknowledges significant potential to improve students' learning outcomes, motivation, and engagement by implementing CLIL in English-medium schools. More specifically, it acknowledges that elementary schools need intensive support to enable them to

introduce appropriately challenging, targeted interventions to enhance pupils' attainment, engagement, enjoyment and motivation in Irish language learning. Such timely discussion demonstrates that while CLIL is gaining traction in educational debate, further exploration and research are essential to identify teacher needs and requirements. Yet, there is a scarcity of CLIL research within the Irish context (DES, 2022; Ní Dhiorbháin & Ní Bhaoill, 2018), and no evidence of a proven effective CLIL approach, particularly in settings where Irish is taught as a second language (L2). Classroom-based research is therefore necessary to gather evidence on the possibilities or shortcomings with CLIL in English-medium (L2) schools as an Irish language teaching method. Additionally, if CLIL implementation is to be successful, the PD of teachers needs to be based on robust evidence-based research on how best to implement CLIL.

Research points to a gap in the international literature, indicating the need for further research on CLIL at the elementary level (Bower, 2023; Haataja et al., 2011; Ioannou-Georgiou & Pavlou, 2011), especially concerning the integration of languages other than English (LOTE) within the CLIL framework. LOTE contexts enable teachers to implement a curriculum subject through a selected target language other than English with CLIL to support language diversity in schools and protect heritage languages (Bower, 2023; European Centre for Modern Languages, 2024). To ensure successful CLIL implementation in any language, a particular pedagogical knowledge base is essential, which will be explored in detail below.

4. Enacting CLIL at elementary level

The successful implementation of CLIL relies heavily on pedagogical integration (Lyster, 2007), is a pedagogically challenging experience (e.g., Cammarata & Haley, 2017; Cammarata & Tedick, 2012) and demands an augmentation of specialised knowledge and pedagogical expertise (e.g., Cammarata & Tedick, 2012; Cammarata & Ó Ceallaigh, 2020). However, we have yet to fully understand and describe what constitutes an ideal CLIL teacher knowledge base for integration (Morton, 2016). Based on Shulman's work (1987), this unique body of knowledge may be defined in terms of the interaction of different knowledge domains (see Figure 1), namely, (a) content knowledge of language of instruction (CK-L), knowledge about the language used as a medium of instruction, (b)

content knowledge (CK-C), knowledge of the content of instruction, (c) pedagogical knowledge (PK) - knowledge about the teaching and learning processes, practices and strategies , (d) PCK-L – the interaction of PK and CK-L, (e) PCK-C – the interaction of PK and CK-C, (f) CK-L/C – the interaction between CK-L and CK-C. PCK for content and language integration (IPCK) is an amalgam of all knowledge domains and may be defined as the situated synthesis of CLIL teacher knowledge (Troyan et al., 2017).

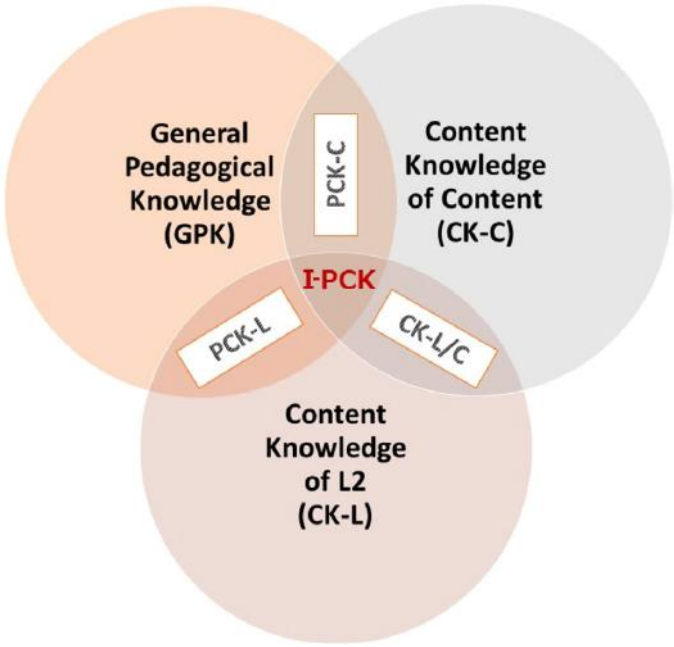

Figure 1

PCK for Content and Language Integration: IPCK

(Adapted from Koehler & Mishra, 2008; Troyan et al., 2017)

The use of IPCK as an analytical tool in CLIL teacher education and PD programmes is promising (Cammarata & Cavanagh, 2018; Ó Ceallaigh et al., 2018). It empowers immersion teachers to participate in continuous, thorough, systematic, and reflective evaluations of their teaching methods while enabling researchers to investigate and delineate various realms of CLIL teacher knowledge, pinpointing specific areas for

enhancement within these domains (Cammarata & Cavanagh, 2018; Ó Ceallaigh et al., 2018). However, it is important to highlight that the aforementioned tool integrates language awareness as a crucial aspect of CLIL teacher knowledge, as educators consistently strive to convey meaning through the target language during content instruction.

5. CLIL TEACHER LANGUAGE AWARENESS

Teacher language awareness (Andrews, 2001, 2007) encompasses the teacher's knowledge of and about target language usage. To be more precise, teacher language awareness has three domains, incorporating the teacher as a language user, a language analyst and ultimately a language teacher (Edge, 1988; Lindahl & Henderson, 2019). In CLIL environments, language awareness pertains to teachers' comprehension of language acquisition and its role in achieving educational objectives (Lo, 2020). This encompasses how teachers utilise their linguistic knowledge to facilitate learning, their attention to language nuances, the sequencing of language activities, and the organization of learning experiences to integrate language with content in various forms (He & Lin, 2018). It is also noted that teacher language awareness evolves as instructors reflect on both the content of CLIL lessons and their own classroom practices (He & Lin, 2018).

6. THE STUDY

Methodology

Guided by an interpretive paradigm, this study set out to explore the following research question:

RQ: How is a teacher's CLIL knowledge base developed when teaching Mathematics through Irish in an English-medium elementary school in the Republic of Ireland?

The goal was to support three teachers in developing the necessary knowledge, skills, and competencies to effectively implement CLIL in their kindergarten classrooms

over a six-week period. The participants, consisting of three kindergarten teachers, conducted daily 40-minute mathematics lessons, informed by the national curriculum, using the Irish language as the medium of instruction. Utilising a Community-of-Practice (CoP) PD model (Wenger 1998; Lave & Wenger, 1991), a culture of continuous improvement was fostered. A CoP approach was deemed suitable for this research to enable the teachers to become familiar with CLIL implementation and to nourish a comprehensive knowledge and understanding of CLIL enactment.

Participants

Purposeful sampling was used to select teacher participants to implement CLIL (Creswell, 2013; Yin, 2014) as a specific cohort of teachers was required. Fully registered kindergarten teachers from an English-medium school context where Irish is taught as a second language (L2) were a requisite. Furthermore, teachers who had no prior experience with CLIL implementation or formal CLIL PD were specifically targeted. The education background and teaching experience at elementary level varied as follows:

Participant	Qualification	Teaching Experience in Elementary	Teaching Experience in Kindergarten
Participant 1	Bachelor of Education	8 years	5 years
Participant 2	Bachelor of Education	16 years	8 years
Participant 3	Master of Education	3 years	3 years

Table 1

Education Background and Teaching Experiences of Participants

Data collection and analysis procedures

At Stage 1 of the study, an online questionnaire was distributed to participants to ascertain their CLIL-specific PD needs. Data generated enabled the researcher to identify existing CLIL knowledge and consider scaffolds and skills required to propel CLIL implementation in the classroom. Moreover, it clarified the level of language-focused support necessary as participants expressed concern about their own

expressive language ability through Irish in a LOTE teaching context. Subsequently, a bespoke, context-responsive PD seminar was designed and developed, informed by questionnaire data, to support and enhance CLIL teacher professional learning. Table 2 below provides an overview of data collection procedures aligned with each stage of the study.

Stage	Data collection procedures
Stage 1	• Extensive online questionnaire
Stage 2	• Researcher field notes from onsite PD seminar with participants
Stage 3	• Review and development meeting (Week 1 - Week 6) - Researcher field notes • Teacher reflective diary per week • Researcher lesson observations (Week 1 - Week 6) - Researcher observation notes and teacher lesson plans • Focus group interview #1 (Week 2) and #2 (Week 4) with the three participating teachers
Stage 4	• Focus group interviews #3 with the three participating teachers

Table 2

Overview of Stages and Data Collection Procedures

Informed by research from pertinent CLIL scholars (e.g. Ball et al., 2015; Mehisto et al., 2008; Lo, 2020), theoretical and practical perspectives of CLIL were explored with participants at an initial onsite staff PD day at Stage 2 of the study. An exemplification of a CLIL lesson was also conducted to foster in-depth discussion and offer a comprehensive understanding of the requirements for implementing the CLIL approach in their specific context. Furthermore, a scheme of work featuring a sample CLIL lesson template was examined; the template categorised language into content-obligatory (disciplinary-specific) and content-compatible language (language integrated with the topic) (NCCA, 2019). A customised CLIL lesson template (i.e. Mathematics through the

medium of Irish), aligned with curricular requirements for kindergarten Mathematics (Department of Education and Skills, 1999a; Department of Education and Skills, 1999b) was explored.

At Stage 3, a CoP approach (Wenger, 1998), was fostered to help teachers identify lesson-specific requirements which could be teased out to adopt CLIL in their unique school context. Consequently, weekly face-to-face review and development meetings (i.e. six in total) were held to discuss lessons observed by the researcher, who acted as a facilitator/mentor to propel CLIL exploration. Ongoing collaboration and discussion focused on addressing the participants' self-identified needs regarding how to sequence and implement a CLIL Mathematics lesson tailored for their specific school context. Additionally, discussions emphasised the importance of child-centered language learning methodologies like task-based, inclusive, and age-appropriate second language learning experiences to support CLIL implementation. The researcher maintained extensive field notes during review and development discussions, as well as compiling field notes from observed lessons on a weekly basis. Teachers completed weekly diaries to document their CLIL progress and highlight potential areas for development. Group discussions were conducted in English as participants perceived their expressive abilities and competence in Irish to be insufficient for robust CLIL discussions. At Stage 4, a focus group interview was conducted with participants to reflect on learnings and challenges encountered.

All data generated were compiled and data analysis at the end of the intervention process involved the use of NVIVO software using Braun and Clarke's (2006; 2022) six-step approach to data refinement and analysis.

7. Findings and Discussion

Data analysis revealed the emergence of the following themes: Increased teacher confidence; heightened teacher language awareness; and increased awareness of professional development needs in the language of CLIL instruction. Each theme will be discussed below.

7.1 Increased teacher confidence

Teacher confidence in CLIL grew as the entire kindergarten staff engaged in planning, review and development discussions, and implementation of CLIL lessons within a Community of Practice (CoP) framework for professional development. Regarding language proficiency, participants reported an increased confidence as they used more Irish on a daily basis, particularly in content subjects, as a result of employing a CLIL approach.

> *I really enjoyed this! I surprised myself at how easily I switched over to using Gaeilge (Irish). I got a great boost from speaking with (X referring to researcher) after she observed me and she said she felt it was a great success. This makes me more confident facing into another week of CLIL. It was just the right amount of challenge, it pushed my teaching while still allowing me to teach confidently and feel I taught the lesson successfully*
>
> (Reflective diary, Participant #3, Week one).

The confidence in teaching through Irish surged as the duration of Irish language instruction expanded, transitioning from language-focused classes, which typically revolve around a central theme, to encompassing the Irish language throughout content lessons such as Mathematics. Consequently, the teachers' utilisation of Irish increased from 30 minutes to 70 minutes per day. This increased usage led to increased confidence in their language production or PCK-L (Troyan et al., 2017). This was evident in the weekly CoP review and development meetings also, which provided additional time and a safe, context- embedded space to explore language requirements in Irish for upcoming lessons and scaffold teachers in CLIL for Mathematics lessons through Irish.

> *Initially I was extremely nervous to begin this process, so I was worried about using Gaeilge (Irish) for a full lesson. And that was before even considering the actual Maths content! I had never seen a Maths curriculum in Gaeilge (Irish), it was extremely daunting, and I didn't hold out much hope for myself teaching Maths through Gaeilge/ language teaching through Gaeilge in Maths. I surprised myself by*

how much I enjoyed teaching through Gaeilge, how successful the lessons were and how easily the children took to the lessons.

(Reflective dairy Participant #3, Week 3).

Consequently, participants became adept at self-identifying needs for CLIL as the intervention unfolded. Overall, by the end of the intervention, teachers were planning their own lessons in Mathematics through Irish. Fahey (2021) reports similar findings in relation to teacher confidence as a driver for effective CLIL implementation.

7.2 Heightened level of teacher language awareness

Teachers displayed a heightened level of language awareness and recognized the central role of language knowledge for successful CLIL implementation. Language exploration and reflection intensified for teachers during CLIL lessons making them increasingly language-aware as they had never taught Mathematics or another curriculum subject through Irish before. Insights garnered from qualitative data provided by the teachers illuminate the evolving level of teacher language awareness.

I think that's one of the things, one of the things I underestimated in my understanding of it was actually how much language input you need at the start of it when you're going on to a new topic

(Focus group, Participant #1, Week 6).

Overall, I enjoyed the experience, particularly as the weeks went on. We all grew in confidence together and we definitely started to see the advantages of CLIL in a working classroom

(Reflective diary, Participant #2, Week 6).

The teachers engaged in ongoing reflection about teaching with CLIL through Irish in terms of how to sequence language within and across lessons to facilitate understanding. Furthermore, as noted in lesson observations, teachers gained insight

into when to scale back on content delivery if students encountered difficulties or felt overwhelmed, and when to emphasize language aspects within Mathematics lessons. Throughout the intervention, the researcher noted the teachers' evolving pedagogical understanding with CLIL, wherein both pedagogical content knowledge related to language (PCK-L) and pedagogical content knowledge related to content (PCK-C) were deemed essential for shaping the CLIL instructional process. Ó Ceallaigh et al. (2018) also note the potential of CLIL to boost teacher language awareness.

7.3 Increased awareness of professional development needs in the language of CLIL instruction

Overall, data emerging from the intervention indicate the positive impact of a CoP approach to professional development to enhance CLIL knowledge. The intervention allowed the teachers to become self-reflective and pinpoint their unique, context-bound professional learning requirements for both language and pedagogy through CLIL. In terms of the teachers' knowledge base, underdeveloped pedagogical content knowledge and language awareness initially resulted in an inability to express and deliver content through Irish to facilitate both comprehensible input and content understanding in Mathematics, as noted during lesson observations. In review and development meetings, teachers reported that their conversational fluency (i.e. *basic interpersonal communicative skills)* was effective. However, they also considered, their sophisticated use of language *(i.e. cognitive academic language proficiency)*(Cummins, 2006) to explain concepts in Mathematics was deficient when teaching Mathematics through Irish. This was also noted during observations.

> *I found the planning process took time, there was a lot of vocabulary that I did not have as Gaeilge so I had to take some time to source this vocabulary and write it down for myself to learn! Even after taking this time to learn the vocabulary (words like bumpy/ cnapánach, prickly/deilgneach) I still found myself stumped for words mid lesson, for example I had forgotten to look up the Irish for hedgehog. Meeting a barrier like this mid lesson can knock my confidence when teaching*
>
> (Reflective diary, Participant #3 Week 3).

As noted above, such linguistic deficits (i.e. PCK-L) related to syntax, grammar, word order, and morphology also became pedagogic constraints. Participant #2 notes the following:

> *I felt stuck at many times in the lesson; stuck for vocabulary for the various animals in the sets, I felt awkward using the word tacar (set) as it is a new word! And just felt this made my teaching quite disjointed and jittery almost. Many of the children did not understand my instructions as Gaeilge to make a set of four, this led to them going off task, I would then have to give them the instructions again in English*
>
> (Reflective diary, Participant #2, Week 3).

However, as reported in researcher field notes, CoP discussions facilitated at review and development meetings enabled participants to make context-responsive and informed decisions to develop practice continuously. Deficiencies in PCK-L have also been reported in previous studies (e.g. Fahey, 2021; Ó Ceallaigh et al., 2018) as impacting on teachers' capacity to effectively implement CLIL in elementary classrooms.

8. Conclusion

This PD programme created multiple and varied opportunities for CLIL teachers to implement their emerging understandings and develop a conceptualisation of CLIL teaching and learning which was both theoretically and pedagogically sound. This cyclical, reflective process not only supported them in reflecting on current knowledge and experiences, but also highlighted the importance of self-evaluation as a catalyst for teacher knowledge growth, in particular in IPCK-L and I-PCK. While practical application of subject-specific content and language integration should be at the heart of any CLIL PD initiative design, PD also needs to incorporate CoP (Wenger, 1998) principles, as demonstrated in this study, to stimulate development and cultivate teacher knowledge growth in CLIL.

This study is not without limitations, as it involved a small number of teachers and a limited number of contexts and disciplines and, thus, its findings should be interpreted with caution and are not generalizable in other CLIL settings. Future studies should

extend the range of academic subjects and employ multiple methods of data collection, including peer observations and guided post-observation reflections.

CLIL research within English-medium schools is an emerging area of inquiry in the Republic of Ireland, poised to inform the development of tailored CLIL professional development programs. The significance of the research findings presented in this paper may influence the trajectory of CLIL professional learning and implementation, underscoring the need for comprehensive research at the elementary level in English-medium schools across Ireland. While this study comprised a small-scale case study, it underscores the importance of amplifying teachers' voices from the outset and throughout the CLIL implementation process, drawing from classroom-based, evidence-driven research that incorporates teachers' lived experiences. It advocates for the active engagement of all stakeholders at the macro level to shape and enhance the national vision for CLIL. Extensive and longitudinal CLIL research is imperative within the Irish context before any system-wide implementation of CLIL can be formulated.

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Stepping into the integration of digital literacy in the CLIL approach

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Abstract

This article explores the pedagogical effectiveness of implementing digital literacy in a CLIL program. This investigation was conducted in a bilingual high school located in Southern Tenerife (Canary Islands, Spain). An action research investigation was developed with a group (n= 30) in the third grade of Compulsory Secondary Education. A learning intervention was designed and implemented in the discipline of Social Science belonging to a CLIL program, and digital literacy was also included in the pedagogical instruction. The results obtained demonstrate that learners' utilization of digital tools does not necessarily mean digital literacy development; the treatment and guidance of digital learning can be integrated within the CLIL approach resulting in positive outcomes when the CLIL approach is combined with project-based and cooperative learning.

Keywords: CLIL; cooperative learning; digital literacy; ICT; project-based learning

1. Introduction

Digital tools have become more relevant than ever due to their utilization for a great variety of reasons: communication and collaboration between individuals who are not sharing location, time, space; information searching and publication; creation of new content; and artistic production, among the most relevant activities. Digitalization, then, corresponds to an essential competence that individuals are required to develop nowadays, especially after the COVID-19 pandemic experience. During lockdown, digital tools were the single mechanism utilized by many to work, study, keep in touch with relatives, and even experience some hobbies. Similarly, English has become a *lingua franca* (Berns, 2009; Greer, 2016; Suzina, 2021), i.e., a medium of communication between individuals who do not share a common language. This mediation role adopted by the English language can also be observed in digital tools: both language and digitalization can be conceptualized as tools for communication, information searching and sharing, and gaining access to new contexts and cultural environments. This connection between language and digitalization highlights the relevance of integrating and exploring them together.

1.1. CLIL and digitalization

Content and Language Integrated Learning (CLIL), as a dual-focused learning approach (Coyle, Hood, and Marsh, 2010) implies a new paradigm in the teaching and learning environment, and different pedagogical activities and tasks. Language and content integration requires language and content instructors' cooperation and collaboration for the effective implementation of CLIL pedagogical methodologies in classrooms. In this paradigm, the foreign language is learned not as an isolated subject or as a goal, but as a medium of instruction for learning contents from different subjects in the curricula (Pavón, 2014; Cimermanová, 2017; Porcedda & González Martínez, 2020).

Literature connected to CLIL and digital tools confirms the great impact on learning when digitalization and CLIL are integrated. The utilization of a language in

new, digital contexts can foster new forms of language production and comprehension; digital tools in the CLIL classroom can also increase foreign language production and language contextualization. Parallel studies situate the use of technology in CLIL contexts as a reduction of workload and development of pupils' autonomy, fostering peer-learning (Marsh, Pavón and Frigols, 2013). Peer-learning is one of the main aspects contributing to the socio-constructivist perspective of the teaching and learning process in current conception. In similar studies, ICT inclusion in the CLIL approach contributes to the development of constructivist methodologies, pupils' autonomy and peer learning (Espinar & García; 2016) and generates opportunities for individualization and differentiation in the learning process (Siepmann & Pérez Cañado, 2022). Thus, CLIL becomes a much more accessible teaching and learning system. In fact, studies (Moreno- De Dierzmas, 2018; Moreno- De Diezmas, 2021) have suggested that the integration of ICT tools in CLIL environments has reduced pupils' difficulties in learning through a foreign language. Multiple intelligences can also be approached in the CLIL classroom by implementing ICT tools since they provide assistance for the assimilation of concepts in the foreign language and the resolution of language difficulties and conflicts (Morilla-García, 2017).

The pedagogical paradigm of CLIL can be adopted as a pedagogical reference for integrating foreign language learning and content learning (by means of the foreign language). In fact, there are multiple benefits to including foreign language, content and digitalization, indicating that the research line associated with digitalized CLIL needs to be continued so as to analyze and put into practice digital literacies in depth in the CLIL classroom.

1.2. The Digital Competence Framework for Educators

Digital competence has been adequately defined as the set of knowledge, skills, attitudes, abilities, strategies and values required when ICT is used for different purposes, such as information treatment and knowledge construction, communication, leisure, and so on (Ferrari, 2012). This definition of digital competence highlights the complexity of digital literacy due to the great variety of

activities that can be developed digitally and, especially, the fast development of ICT. The Digital Competence Framework for Educators, published in 2017, represents a systematization of digital literacy for educational purposes, defining areas, categories and level categories of digital knowledge, skills, abilities and attitudes. This framework consists of six areas:

1) Professional engagement. This category includes exploring different digital options, expanding, enhancing, renewing and innovating professional training.

2) Digital resources. This includes exploring digital resources, fitting digital sources to the learning context, strategic use of interactive resources and promotion of the use of digital resources.

3) Teaching and learning. This category deals with exploring digital teaching and learning strategies, integration and enhancement of digital technologies and learning activities, and renewing teaching practices according to these actions.

4) Assessment. This is associated with exploring digital assessment strategies, enhancing traditional assessment approaches, strategic and effective use, reflection and innovation of digital assessment.

5) Empowering learners. This category includes exploring learner-centered strategies, strategic use of a range of tools to empower, holistic empowerment and innovation of learners' involvement.

6) Facilitating learners' digital competence. This refers to encouraging learners to use digital technologies, implementing activities to develop learners' digital competence, strategic and critical fostering of learners' digital competence and use of innovative formats to do this.

These categories are interconnected due to their focus on online information, data literacy and treatment of online information. The differences among categories are associated with strategies and skills depending on the digital

activities approached. In this sense, there is a logic of interdependence among these categories: the development of one category requires the development of the others. Guitert et al., (2019) have catalogued this framework as a supportive tool for schools and teachers to integrate the complexity of digital literacy in the classroom and include the adaptations required. In fact, digital competence and its associated sub-competencies can be perceived as a key starting point for enhancing and expanding other competences (Lameras & Moumoutzis, 2021) and their isolated treatment is not recommended. They should rather be addressed as part of the organizational task and introduced within the school curriculum's contextual factors (Gran et al., 2019). For this reason, this study aims to include digital literacy in the integrated approach of CLIL.

1.3. CLIL and active methodologies

Learning content and language simultaneously implies a complex cognitive activity that requires appropriate pedagogical practices for an ideal approach. Prior research needs to be discussed and analyzed to identify methodologies that are better adapted to encouraging and engaging learners in the CLIL classroom. CLIL emphasizes learning by doing, with pupils' taking an active role. CLIL learners are characterized as autonomous, participative and interactive (Pérez Cañado, 2018).

The CLIL approach is currently being implemented through active methodologies, allowing for student-centered, communicative, and diverse learning (Pérez Cañado, 2018). This learning environment makes CLIL a flexible approach adapted to learners' characteristics, needs and interests. Cooperative learning also contributes positively to the development of the CLIL approach (Guazzieri, 2009; Pavón et al., 2015). In this sense, when considering methodologies for the teaching and learning process "student-centered methods like cooperative learning, task-based language teaching (TBLT), project-oriented work, curricular integration, or the lexical approach should all be part and parcel of CLIL programs" (Pérez Cañado, 2018, p. 372), as CLIL evolves from the simple phenomenon of

transmission of information to a discovery- based learning experience (Pavón & Rubio, 2010).

Project-based and cooperative learning are essential when designing a CLIL learning situation in order to contextualize the language and content, adapt them to learners, and promote discovery as mentioned in previous studies. Project-based and cooperative learning imply a multiperspective learning experience that includes language, content, procedures and peer learning. In this sense, these two methodologies can merge learning experiences that prioritize student-centered approaches.

2. METHODOLOGY

2.1. Objectives

The main goal of this research was to analyze whether digital literacy can be included in a CLIL context. Another objective is to ascertain the integration of project-based and cooperative learning, as well as the development of digital literacy in the CLIL classroom. Previous knowledge about the pupils' digital literacy was analyzed to determine their starting point.

2.2. Context

A case study was developed in a third grade class (n=30) of Compulsory Secondary Education (14-15 year olds) belonging to a high school in Southern Tenerife, Spain. These pupils have been in a bilingual educational program (CLIL) since the early stages of Primary Education. They have also participated in a digitalization educational program since fourth grade of Primary Education in which digital tools have been used for teaching and learning.

The high school in Southern Tenerife, situated in a semi-rural location, is composed of learners belonging to this area. Families are formed of middle- class members who do not have a great academic knowledge of English as a foreign language. This could pose problems when learners go home struggling with CLIL subjects as their family members do not have the required knowledge, skills, and

abilities to help their children. This has led to a rise in negative opinions about the CLIL approach in the high school. For this reason, this investigation was designed to conciliate families, pupils and the CLIL approach including a new element of learning: digitalization. In this model of research, a learning intervention was designed. This was implemented for three weeks (12 sessions in total) in the subject of Social Science. Each week consisted of four sessions of Geography and History according to the regional curriculum of the Canary Islands (Spain). The intervention was designed to incorporate criteria from the regional curriculum of Social Science, English as a Foreign Language and the sub-area of digital licenses which belongs to one of the areas of digital creation, which corresponds to one of the main categories of the Digital Competence Framework for Educators, namely, Digital Resources.

2.3. Research design

Participatory Action Research (PAR) was selected due to its reflection requirements, data collection methods and action towards improvement (Baum et al., 2006). In fact, PAR represents a complex system because of the different stages required: "PAR seeks to understand and improve the world by changing it." (Baum et al., 2006). This participatory methodology requires adequate materials and CLIL designed to make a change in a real-life situation in a specific CLIL community.

As previously mentioned, a learning intervention was designed. Criteria of different disciplines (Social Science and English as a Foreign Language) and the second area (Digital Resources) of the Digital Competence Framework for Educators were incorporated in the design of this learning intervention. Content creation was the main area of study, in particular the sub-area associated with digital licenses. This area was selected from the Digital Competence Framework for Educators (2017), as previously mentioned. The criterion of Social Science selected for this investigation refers to the study of the population regarding their contribution to the local and national economy, and distribution of the wealth. In the case of English as a Foreign Language, the criterion used in this learning

intervention refers to mediation activities. These criteria (from Social Science and English as a Foreign Language) were selected from the Decree Law 30/2023, of 16th March, by which the order and curriculum of Compulsory Secondary Education and Bachillerato in the Community of the Canary Islands is established.

2.4. Instruments

Qualitative and quantitative data were collected following a mixed methods approach (Onwuegbuzie & Leech, 2005). In this sense, an exploratory study was developed that aimed to analyze quantitative data complemented with the qualitative data obtained. Different instruments of data collection were developed:

1) Previous knowledge test. The main aim was to analyze learners' previous knowledge regarding digitalization.

2) Self-assessment rubric. This rubric was used to make pupils reflect on how and to what extent they learned about language, content and digitalization.

3) Peer-assessment rubric. This rubric aimed to analyze the learners' learning process with others by means of cooperative and interdependent practices.

4) Hetero-assessment. This rubric was a formative assessment developed by the teacher that aims to analyze what learners learned.

5) Survey test. The survey was administered to the students to evaluate the degree of complexity of the study they experienced.

6) Field diary. This instrument was used during the implementation of the learning intervention in order to obtain qualitative information about the intervention.

7) Cronbach alpha instrument. This instrument was included to analyze the degree of reliability of the results obtained.

3. Results

This study contains results of previous knowledge and formative and summative assessment. Special attention was given to pupils' previous knowledge of digitalization because they have been using digital tools for learning purposes since Primary Education. In this sense, the previous knowledge test conducted dealt with pupils' ideas about the different digital licenses. Furthermore, great importance was given to summative assessment with the main aim to compare the results obtained between summative and formative assessments

3.1. Previous knowledge test

As stated earlier, a previous knowledge test was designed to analyze students' previous knowledge regarding digitalization. The area of digitalization focused on in this investigation was associated with the creation of digital content, which includes a wide range of knowledge, skills, abilities, and attitudes. Thus, the aspect of the protection of digital products, specifically, digital licenses, was selected for the design of teaching and learning processes in this investigation. In fact, the previous knowledge test contained questions related to the different digital licenses utilized nowadays. The figures below have been selected to exemplify students' previous knowledge of digital licenses.

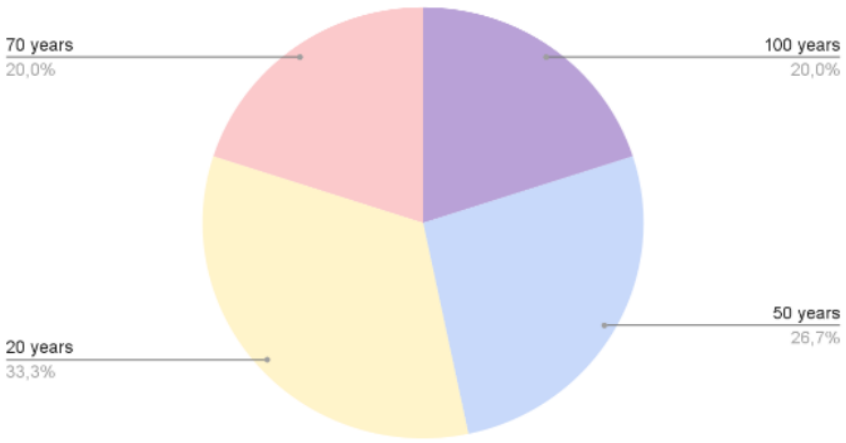

Figure 1. Question about the duration of a copyright license

Knowledge regarding copyright license is considerably relevant when using original sources due to the limitations and special requirements for utilization when the period of protection has not finished. This result suggests that most learners do not have the correct knowledge associated with the utilization and application of a copyright license, as only a small percentage (20%) have the correct understanding of a copyright license.

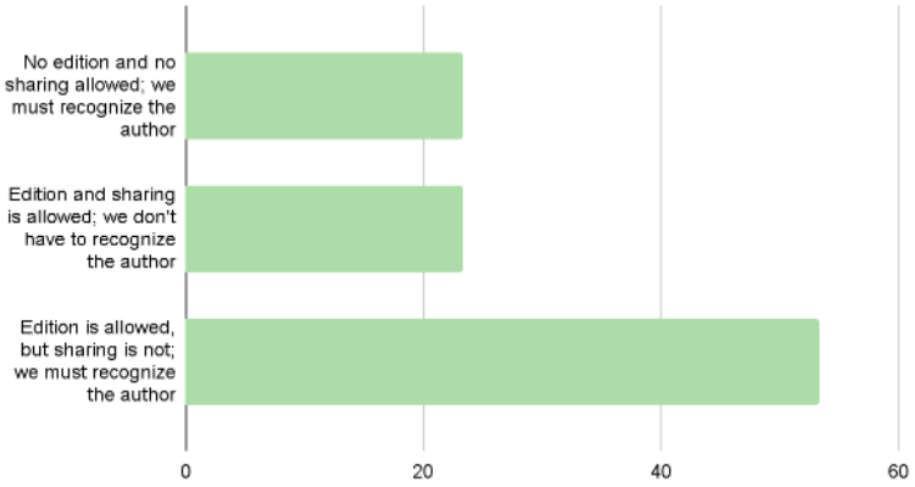

Figure 2. Question about the features of a copyleft license

As indicated in the title of Figure 2, the main objective was to assess learners' ideas about the main features of a copyleft license. Only 23,5% selected the correct answer, i.e., "edition and sharing are allowed; we don't have to recognize the author." This result demonstrates that the majority of learners do not have accurate knowledge about copyleft licenses (and copyright licenses according to the previous figure), and this could provoke a misapplication of digital licenses or even incorrect protection when applying digital licenses to their own digital products.

3.2. Summative assessment

This investigation aimed to analyze students' process and degree of learning through a deep reflection on how they learned. In fact, rubrics for self and peer assessment were designed to make learners think about their own processes of learning and what and how they learned from their classmates. Rubrics were

designed according to four levels of (dis)agreement (according to their level of learning). Number 1 represents "totally disagree"; 2 "partially disagree"; 3 "partially agree"; and 4 "totally agree." The self-assessment rubric was composed of language, content, and digitalization aspects. Self-assessment results were analyzed regarding reliability. In order to do so, the Cronbach alpha instrument was implemented. The value obtained was 0,87, indicating a considerable level of reliability.

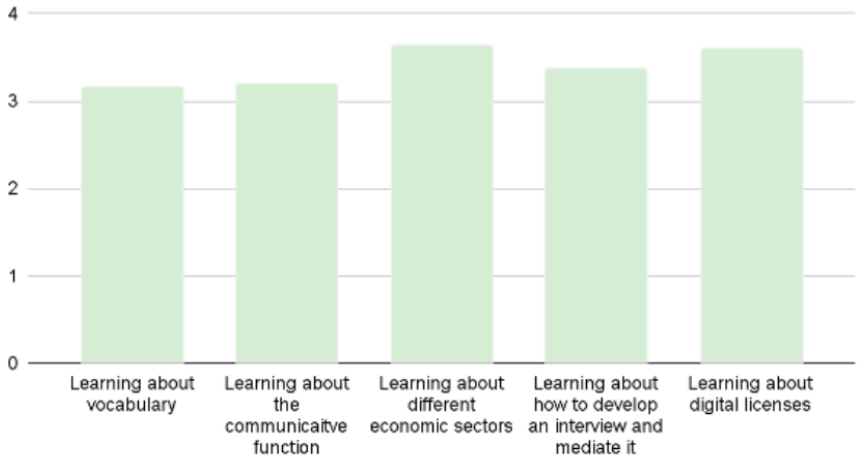

Figure 3. Self-assessment arithmetic averages

The arithmetic averages of Figure 3 are all above value 3. This means that the design and implementation of a new element in the CLIL context did not affect the learning process of language and content aspects. In fact, the different parameters are balanced, which could be observed as a positive application of the digitalization of the CLIL approach. Among the most positive aspects, learning about the different economic sectors and learning about digital licenses were the parameters with the highest scores. The former result implies that the inclusion of a new element in the CLIL approach (digitalization) did not affect the learning process of subject content.

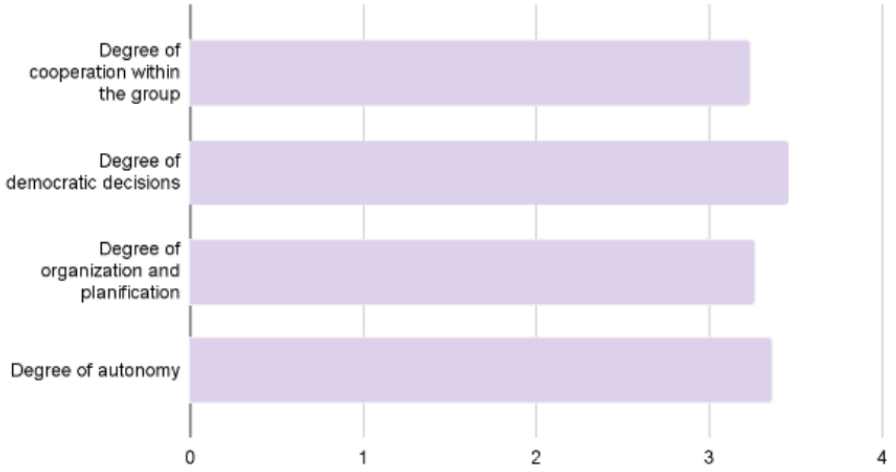

Figure 4. Peer assessment arithmetic averages

A peer assessment was designed to analyze students' degree of learning of cooperative values such as democratic values and decisions, degree of organization and planning within the group, independence and cooperation within the group. Alpha of Cronbach was used to evaluate the reliability of these results and the value obtained was 0,82. This indicates that the values can be considered as reliable. As observed in the previous rubric, the results are balanced according to the parameters that compose cooperative learning. The degree of democratic decisions and autonomy are the parameters with the highest scores, signifying positive results obtained from applying cooperative methodologies in this CLIL study about digitalization.

3.3. Formative assessment

Formative assessment was included to compare students' reflections on what and how they learned. Formative assessment was developed by means of a rubric which contained criteria for language, content and digitalization. As specified on previous rubrics, the system of assessment remained the same, with values ranging from 1 to 4, indicating the degree of pupils' learning, from "completely disagree" to "completely agree". Hetero-assessment reliability values (0,88) are consistent to consider these data valid.

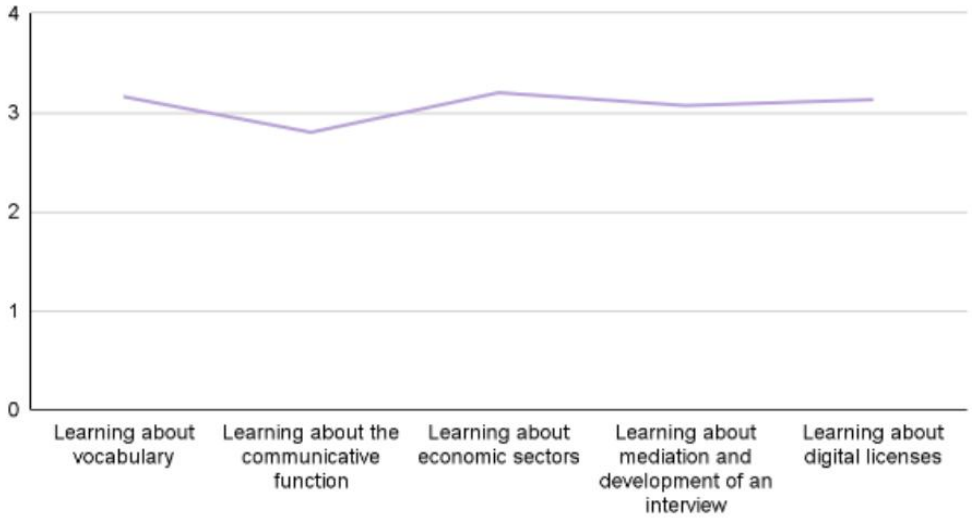

Figure 5. Hetero- assessment arithmetic averages

Hetero-assessment results suggest a positive approach to teaching and learning in terms of content, language and digitalization in a CLIL context. The results are generally balanced, although one result "learning about the communicative function" was lower (2,89) than 3. This result can be understood in the context of the teacher's exercise of self-criticism observed in the field diary. The teacher stated that the communicative function was very vast, so its introduction should have been reduced to foster better understanding and application. The remaining results were positive and balanced, as observed in the analysis of summative assessment. This sense of agreement reached between hetero-assessment and summative assessment does not only imply students' rational and adequate procedure in the cognitive activity of self-reflection regarding learning and cooperative practices, but it also suggests the digitalization of CLIL is possible and the inclusion of a new parameter does not necessarily affect language and content learning.

3.4. Survey test

A survey test was eventually conducted as part of the investigation to analyze pupils' degree of satisfaction regarding the inclusion of digitalization in a CLIL subject. The survey test was designed to make pupils reflect on and criticize the

design of the learning intervention including goals, the degree of complexity of the final product, how the language, content and digitalization were introduced and developed within the classroom, and the inclusion of cooperative learning, among the most relevant parameters. The validity value of the survey test represents 0,90, indicating its validity for the investigation. The values of analysis were repeated: values 1 to 4, representing "completely disagree" to "completely agree."

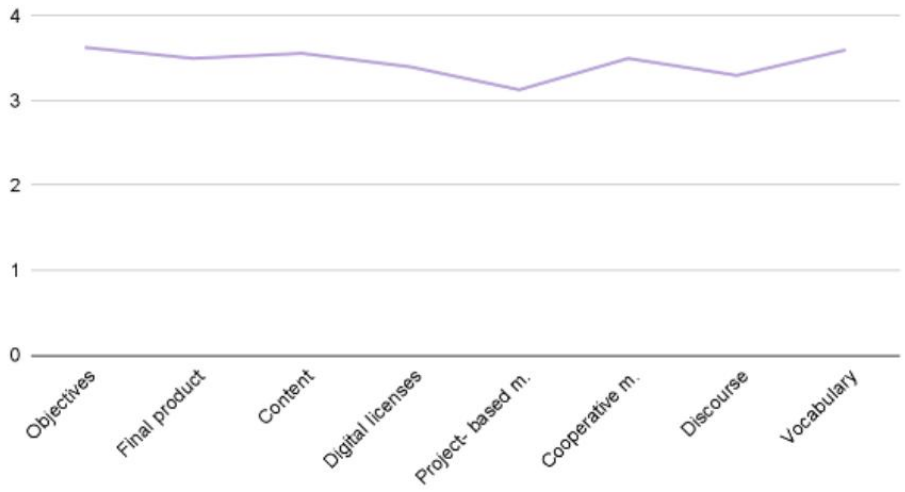

Figure 6. Survey test arithmetic averages

The elements with the lowest scores are associated with project-based learning and the discourse selected for the learning situation. The complexity of PBL was a challenge for learners during the development of the final product and adjustments and adaptations may be needed when this investigation is applied again. The second parameter mentioned was also analyzed in the hetero-assessment process. The communicative function selected for learning might have been complicated for pupils and may require revisions for better learning. However, all parameters are above 3, which indicate that the investigation was adequately designed and applied according to learners' cognitive/maturity level, foreign language and content levels.

4. Conclusions

According to the results obtained in the previous knowledge test, the systematic implementation of digital devices in an educational context does not

imply digital learning as a result. A conscious and guided process about digitalization is required if students are expected to acquire knowledge, abilities and skills associated with it. The inclusion of digital tools in the classroom is not enough for the development of the digital competence: its conscious treatment is essential for effective digitalization learning.

Moreover, positive results in the rubric and test survey indicate high effectiveness in the implementation of digitalization in CLIL. As demonstrated in previous studies (Pavón et al., 2015), a low proficiency level in CLIL is not a handicap when the pedagogical strategies are correctly applied in the CLIL approach. This statement can be extrapolated to the inclusion of digitalization in the CLIL approach. When positive methodologies are applied to CLIL such as cooperative learning (Martínez, 2011; Martucci, 2015; Ramos Ordoñez & Pavón, 2015) and project-based learning (Díaz Pérez et al., 2018; Sánchez García & Pavón, 2021), a positive teaching and learning process can be reached.

This study has not only demonstrated positive results in the CLIL approach and its combination with digitalization, but it has also connected learners, families and school within the CLIL context. By involving family members in learners' interviews, families have been able to participate in and be part of the CLIL experience. In this sense, this study aims to bridge the gap between pupils' formal and informal contexts and make the families part of the CLIL approach. By doing so, families may overcome prejudices and misconceptions about CLIL.

Certain limitations have been identified in this study. The target group is small and these results cannot be generalized. Further research needs to be addressed so as to determine actual effectiveness in the inclusion of digitalization in the CLIL approach.

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CLIL in Mathematics: An experiment in developing mathematical literacy in secondary education in Turkey

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Abstract

As reported by the Organisation for Economic Co-operation and Development (OECD), a mathematically literate student can recognise the role that mathematics plays in making well-founded judgments and decisions needed by constructive, engaged and reflective citizens. This case study aims to elucidate the steps that can be followed to develop mathematics literacy for bilingual education in Turkey which contributes to the COST Action CA21114-CLIL Network for Languages in Education: Towards bi- and multilingual disciplinary literacies (CLILNetLE), and discussions on how to integrate CLIL in mathematics education worldwide. In this study, ten mathematics questions in both English and Turkish were prepared by a mathematics teacher for 11th and 12th-grade students (n=38) whose native language was Turkish in a state secondary school. There were target words in mathematics questions in English that were identified through a needs analysis conducted on students, such as *tangent*, *circular*, *exponential*, *pendulum*, *stationary* and *constant*, which students reported as unknown English words and had to know in order to understand the questions in mathematics. Feedback was collected from experts in CLIL and students of CLIL application in mathematics. Sample data are provided, accompanied by photos to show how CLIL can be utilized to teach mathematics.

Keywords: CLIL in mathematics, mathematics literacy, CLIL implementation, secondary education

1. Introduction: An Overview of CLIL in Turkey

In the literature it is stated that CLIL in Turkey dates back to the 1950s in the Maarif Schools, and after starting negotiations with the European Union, an integrated curriculum in which the medium of instruction was a foreign language, namely English, began to be implemented (see Koç, Yuksel & Altun, 2021; Cetintas & Genc, 2001; Alper, 1995). Science and mathematics have been taught in a foreign language in addition to intensive language and literature teaching as a separate subject in these Maarif Schools. Recently, as a result of a decision by the Ministry of Education, these schools have operated under the name of Anatolian High Schools (Coşkun-Demirpolat, 2015).

As stated by Llinares and McCabe (2023), CLIL came to the fore in the mid-1990s with the goal of cultivating European citizens' competence in foreign/second/additional languages. Since the late 1990s, some private schools in Turkey have been using CLIL in primary and secondary education (Korbek, 2020). There are some studies on CLIL implementation in Turkey, and findings showed that technology integration in CLIL classrooms is still in its infancy (Koc et al., 2021) and there is a lack of pedagogical knowledge about how to integrate content and language (Gulsen & Dikilitas, 2023). Abdelaty (2023) discussed the pedagogical shift from the traditional methods of language teaching to groundbreaking strategies such as CLIL. Onder-Ozdemir (2023) used CLIL in medical English classes during COVID-19 as a coping strategy in higher education. Her findings revealed how students' motivation can be increased and critical thinking skills promoted in unexpected crises using CLIL.

In this study. CLIL was utilized as a methodology. CLIL methodology aims to equip students with both "language skills" and "content" acquisition at the same time (Coyle, 1999; Marsh, 2002). CLIL focuses on teaching a curricular subject, such as mathematics in this study, through the medium of a language other than that which is normally used, which is Turkish. It should be noted that "content" and "language" have different types of interpretations in the literature. In this study, following Coyle, Hood, and Marsh (2010), CLIL is defined as "a dual-focused educational approach in which an additional language

is used for the learning and teaching of both content and language" (p. 1) to achieve a specific level of mastery both in mathematics and English.

CLIL experiences have supported the idea that changing the language of instruction to a foreign language, such as English, can pave the way for a significant change in how students learn in primary and secondary education (Arnandiz et al., 2022). In a longitudinal study, Granados López-Jiménez and Lorenzo (2022) exemplified how formal bilingual education can boost lexical literacy in history writing. There are also suggestions for successful CLIL implementations, such as assessing students' additional language proficiency, providing help and support when needed (Ball et al., 2015) and activating prior knowledge (Bentley, 2007). Recently, the shift from the originally disciplinary-oriented instruction to social and cognitive factors has been extensively discussed by Jiang et al. (2023).

In multilingual contexts, it is important to take time to discuss methods used in different cultures represented by learners in the classroom to promote inclusivity and respect, encourage critical thinking and develop cultural competence, given that culturally responsive teaching adapts instructional materials to reflect the diversity of the classroom, making learning more relevant and effective. Coyle (2007) suggested the 4Cs of CLIL for planning successful lessons, which include social and cognitive factors that focus on the "interrelationship between content (subject matter), communication (language), cognition (learning and thinking) and culture (social awareness of self and 'otherness')" (p. 550), which were used as a guide in the present study:

1. Content (aligned with the curriculum): What is the mathematics topic? (e.g., trigonometry, functions, logarithm);

2. Communication: What language of mathematics will learners need to communicate during the lesson? (e.g., the language of trigonometric functions, formulas and theorems);

3. Cognition: What thinking skills are demanded of learners? e.g., identifying, classifying, reasoning, generalising;

4. Culture (sometimes the 4th C is referred to as Community or Citizenship): Do learners from different language backgrounds calculate in the same way? What symbols do they use?

2. The Language of Mathematics

Words and symbols are used in combination in mathematics. When the language of mathematics is examined, it is composed completely of assertions about mathematical objects. When we examine textual mathematics, we can see that mainly third-person singular and third-person plural are used to "denote individual mathematical objects (or propositions) and collections of mathematical objects (or propositions), respectively" (Ganesalingam, 2013, p.21). As Novotná and Hofmannová (2000, n.p.) have noted,

> Mathematics is a discipline where non-verbal communication, visual and graphic materials are used in a considerable extent. Its language has a typical grammatical structure and is rich in words that are only found in this specific field. The mathematical vocabulary is similar across many languages.

The interrelationship between language and content issues in mathematics is of considerable importance (Grabner et al., 2012). There is a critical relationship between mathematics and the language we use. Mathematical processes require a large amount of procedural knowledge, mainly related to language (Hiebert & Lefevert, 1987). Creating and using the mathematical language correctly is significant for the success of mathematics teaching (Toptaş, 2015). One of the basic steps in learning mathematical knowledge and transitioning to mathematical thinking is the correct use of mathematical language (Özdemir, 2014). Language use does not only mean that the student expresses the information he or she has acquired; it is also one of the basic elements in shaping thought (Schütz, 2002). Vocabulary makes a crucial contribution to overall understanding in many content areas, including mathematics. Another challenge can be the language and terminology of mathematics in English. For example, in daily life, the word "right" as an adjective has several meanings, such as being correct based on true information, being suitable, as a direction (right/left side) and human

rights. However, in mathematics, one of the uses of the word "right" is the meaning of "an angle of 90°, like the angles at the corners of a square," which is different from daily use. Effective methods for teaching vocabulary across all content areas are diverse and long-standing. Teaching and learning the language of mathematics is vital to the development of mathematical competence. Students' mathematical vocabulary learning is a very important part of their language development and, ultimately, their mathematical competence (Riccomini et al. 2015).

3. STUDIES ON CLIL IN MATHEMATICS

There are few studies on CLIL in mathematics. An investigation was performed by Cabezuelo and Pavón (2019) into the extent to which the use of L2 in maths tests influences bilingual education learners' process of word problem-solving in mandatory secondary education. Using action research, Šenkyříková (2023) investigated the implementation of CLIL in mathematics courses in the sales assistant programme in vocational schools in the Czech Republic for the assessment of the effectiveness of CLIL on students' understanding and proficiency in both language and mathematics. Data were collected using a pre-test and post-test. The findings showed significant improvements in vocational students' knowledge and comprehension. Systematic reports on the effects of mathematics CLIL instruction were analyzed in two studies at the secondary school level (Ouazizi, 2016; Petrášková, & Komínková, 2014). These studies showed that the students who received CLIL instruction performed better in the mathematics test than those with instruction in their mother tongue. In a mathematical test of quadratic equations used by Ouazizi (2016) for the measurement of students' mathematics knowledge, the CLIL and non-CLIL groups achieved relatively high scores, but the CLIL group's score was slightly higher. Using two mathematics didactic tests in English and the students' mother tongue, students' word problem-solving skills were assessed by Binterová et al. (2014). Their findings suggest that CLIL is more effective in enhancing students' language skills and problem-solving skills in mathematics.

4.PRESENT STUDY

There is little research that has investigated the steps in learners' and CLIL teachers' initial experience in mathematics education of both content and language integration, especially in developing countries like Turkey. A reason for this can be the challenges encountered when trying to implement CLIL such as:

- language proficiency of content teachers
- language proficiency of students
- the country's education policies
- mathematical language and terminology
- differences in mathematical notation and symbols in different languages

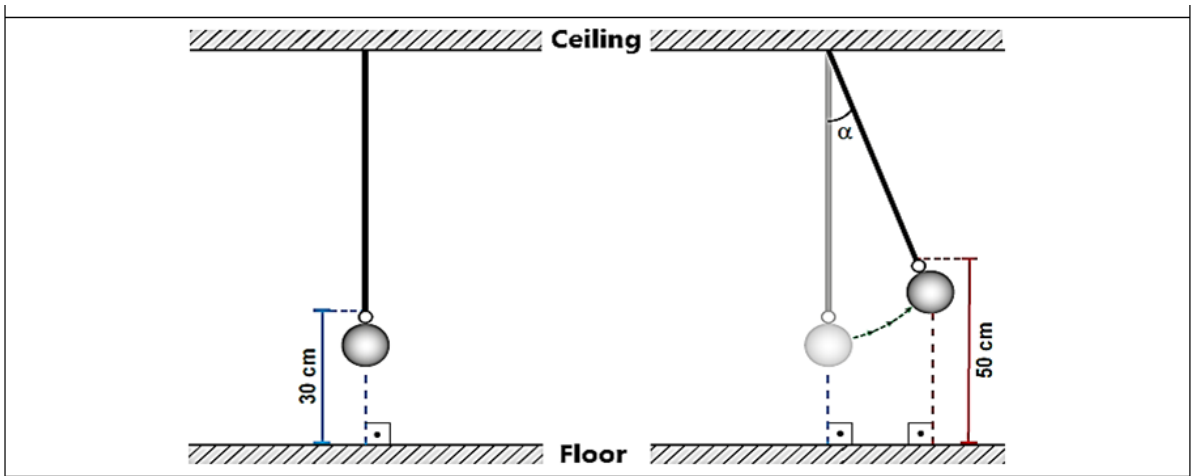
According to the 2018 Education First report, Turkey ranked 31st among 32 European countries and 73rd among 88 countries in the world. Thus, content teachers' and students' lack of English language skills can be one of the critical challenges when CLIL is used in Turkey.

Given the significance of mathematics and gaps in the literature, this study aims to elucidate CLIL application to mathematics classes in a state secondary school in Turkey. In this research context, learners gain knowledge of the curriculum subject in mathematics classes, while simultaneously learning and using English as a foreign language. It should be noted that content was the first objective, and that this curricular content led to objectives for English language learning. Thus the following steps were followed:

- Choosing trigonometry as the subject with students in grade 11.
- Identifying the questions from the mathematics textbook in Turkish.
- Translating the questions from Turkish into English.

In Figure 1, below, there is a mathematics question from the 11th-grade mathematics textbook in Turkish on the left side. To implement CLIL the question was translated into English. When we compare the same mathematics question in English

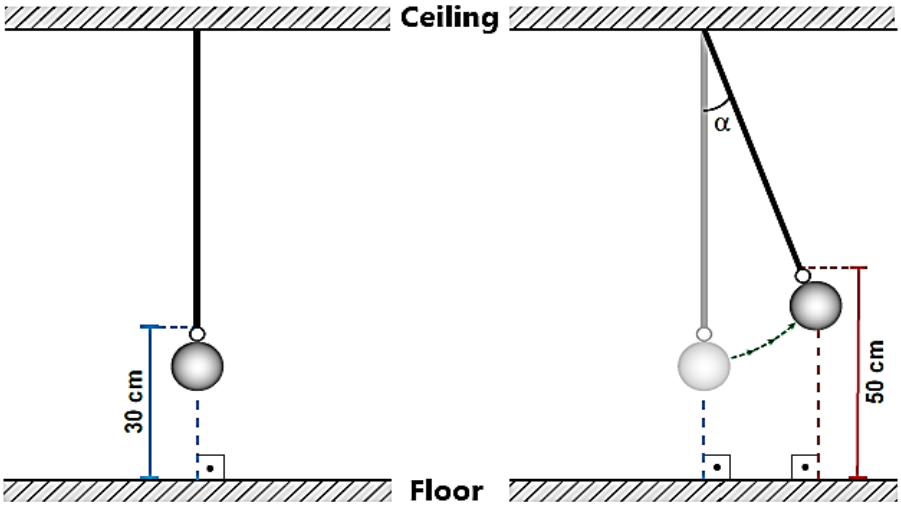
and Turkish, there are almost no similar words apart from the numbers. This illustrates one of the challenges.



Şekil I'de verilen sarkaç zeminden 200 cm yükseklikteki tavana bağlanmıştır. Sarkacın hareketsiz olduğu anda bağlı bulunduğu ipin ucu zeminden 30 cm yüksektedir. Sarkaç Şekil II'deki konuma geldiğinde ipin ucunun zeminden yüksekliği 50 cm ve ipin ilk konumuyla yaptığı açının ölçüsü α'dır.	The pendulum in Figure I is attached to the ceiling at the height of 200 cm from the floor. When the pendulum is stationary, the end of the rope is 30 cm above the ground. When the pendulum is in the position as shown in Figure II, the height of the end of the rope from the ground is 50 cm and the angle of the rope with its initial position is α.
Buna göre sin α değeri kaçtır?	**Accordingly, what is the value of sin α?**

Figure 1. Mathematics question in Turkish and English

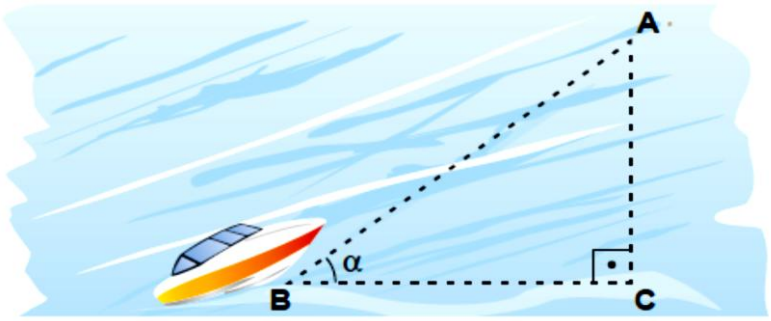
Below are three sample mathematics questions from the textbook used in the classroom (see Figures 2, 3, 4).



The pendulum in Figure I is attached to the ceiling at a height of 200 cm from the floor. When the pendulum is stationary, the end of the rope is 30 cm above the ground. When the pendulum is in the position shown in Figure II, the height of the end of the rope from the ground is 50 cm and the angle of the rope with its initial position is α.

Accordingly, what is the value of sin α?

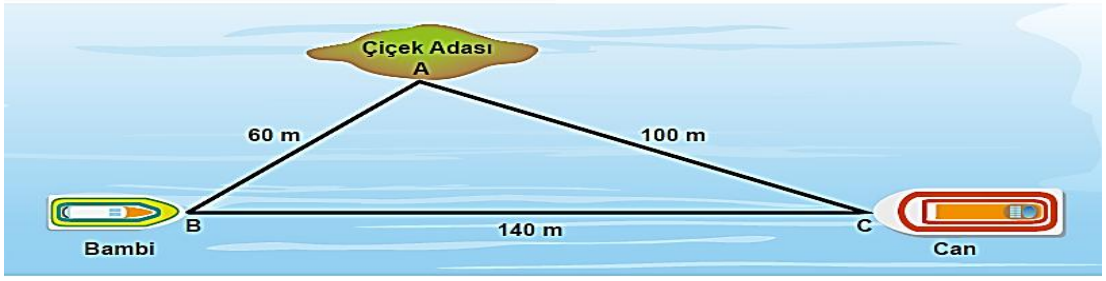
Figure 2. Sample question 1.



The motion of a boat is modeled in the Figure above. This boat reached point A after 2 hours at a constant speed of 10 miles per hour, making a positive angle α with the direction [BC] from point B.

[AC] ⊥ [BC] and arcsin (3/5) = (π/2)-α then, how many miles is |BC|?

Figure 3. Sample question 2.



The positions of the two boats, Bambi and Can, which are making an island tour in Ayvalık, are modeled with the ABC triangle when they stop near Çiçek Island, as shown in the Figure above.

If |AB| = 60m, |AC| = 100m, and |BC| = 140m, how many degrees is (BAC)?

Figure 4. Sample question 3.

4.1 Methods

A case study provides us with in-depth and vivid descriptions in a real-life context (Duff, 2008; Eisenhardt, 1989; Yin & Davis, 2007). Thus, a case study has many advantages, such as recognising the complexity, and helping capture unique features that may otherwise be lost in larger-scale data that observe a broader reality (Cohen, Manion & Morrison, 2007). Given these advantages, the present study was planned as a case study. As an empirical method, this case study sets out to investigate the trajectories in depth and within their real world to develop mathematics literacy including CLIL for maths classes in upper-secondary education in Turkey. While planning this case study, drawing on Adelman, Kemmis and Jenkins (1980), focus was given to opportunities to collect, check and triangulate data (including peer examination of the findings, respondent validation and reflexivity).

A needs analysis was conducted to identify students' needs when implementing CLIL in mathematics education (Rach, 2023; Schukajlow, Rakoczy, Pekrun, 2023) in order to identify mathematical terminology in English. As discussed by Illés and Bayyurt (2023), we need practical perspectives to better prepare our students for the reality of how the English language is used today in maths.

In this study, the data were collected using structured observation given that observational data are beneficial as they allow the researcher to collect 'live' data from 'live' situations first-hand. Also, structured observation is systematic and enables the researcher to generate quantitative data from the observations. In the structured observation form, it was recorded how active the students participating in the study were in the lessons, their level of English, their mastery of mathematical terminology in English and their gestures and facial expressions during the lessons. A structured interview with students, who were the participants of the study, was used to accompany the observation. The interview questions were about CLIL, the course process, students' feelings of involvement in the course and differences from other courses. Observational data enabled the practitioner-researcher to enter and understand the situation that is described in this study. The interview data allowed the

practitioner-researcher to reveal the issues that might otherwise have been unconsciously missed (Cohen et al., 2007). The observation and interview data were analyzed using content analysis. In the coding process of the content analysis, a deductive coding approach was used. This is a top-down approach where the researcher starts with a set of predetermined codes and then finds excerpts that fit those codes. The codebook was developed with possible codes predicted by the researcher, and after checking data, some new codes were added into codebook.

4.2 Participants

In this study, there were 38 11th and 12th-grade students in a state secondary school in western Turkey. Twenty of the students were female and 18 were male. Their socio-economic status was similar and mostly low. The native language of all students was Turkish, and students were learning English as a foreign language. The students' English language proficiency level was mostly at A2 level, with a few students at B1 level, according to the Common European Framework of Reference for Languages (CEFR). Their mathematics proficiency level was good.

The researcher in this study is a mathematics teacher, and has a Master's in Science in Secondary School Science and Mathematics Education from Bogazici University, Istanbul, Turkey; the medium of instruction of Bogazici University is English. Thus, although the maths teacher's native language is Turkish, he is able to teach mathematics in English and is very familiar with the English terminology of maths. In this study, the mathematics teacher implemented CLIL classes for an hour a week for almost two months.

5. Implementation and Results

Ten mathematics questions about trigonometry were chosen from the mathematics textbook. As the medium of instruction in the upper-secondary school where this study was conducted was Turkish, the mathematics textbook was in Turkish. The Turkish mathematics questions in this study were translated into English by the practitioner-researcher before the mathematics classes. Then, students were asked to read mathematics questions in English. None of the students understood the

questions, because of the unknown words. The researcher asked students to note down the unknown words in order to prepare a vocabulary part for course notes and also explain them in the course. When the data for the unknown words were analyzed, there were target words in mathematics questions in English that were identified, such as *tangent*, *circular*, *exponential*, *pendulum*, *stationary* and *constant*, which students reported as unknown English words which they had to know in order to understand the questions in mathematics, as shown in Figures 5 and 6 below.

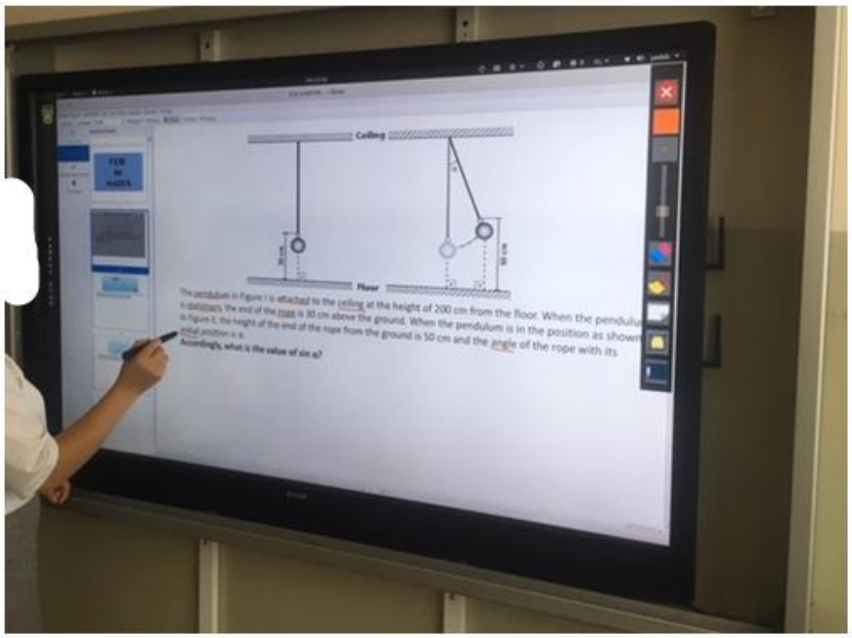


Figure 5. Student underlining and writing unknown English words and terms in a mathematics question

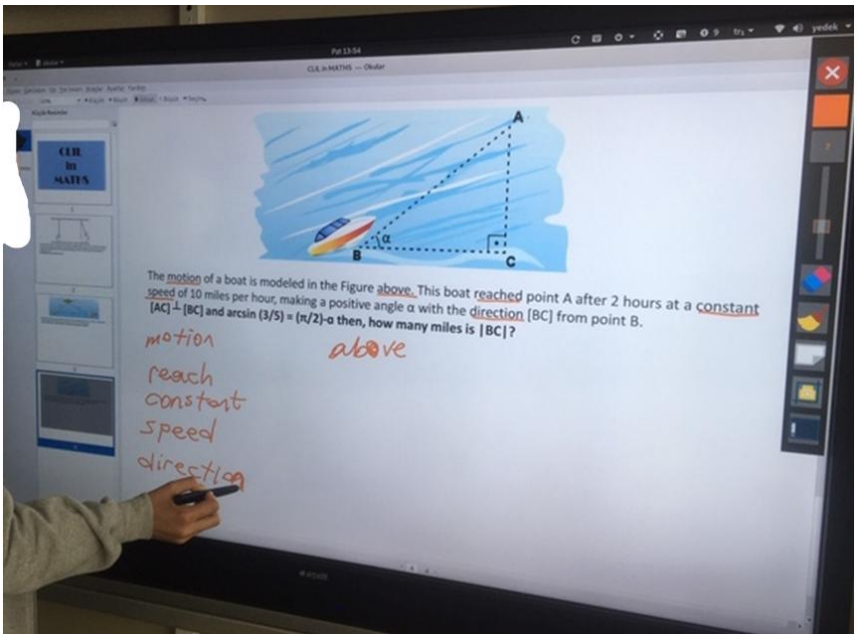


Figure 6. Student underlining unknown English words and terms in a mathematics question

As can be seen in Figures 5 and 6, each student chose different means to report the unknown words in English in mathematics. In Figure 5, the student underlined the words, while the student in Figure 6 both underlined and listed the words. The researcher then explained these words and terms to students in English, and students were able to answer the questions in mathematics in English (see Figures 7, 8).

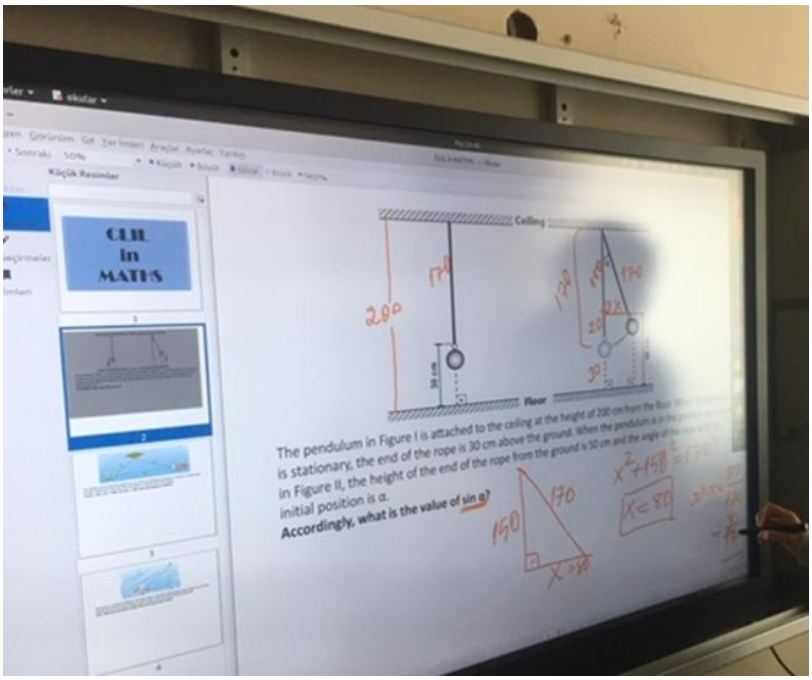


Figure 7. Student answering a mathematics question after mathematics teacher's explanations of unknown words and terms

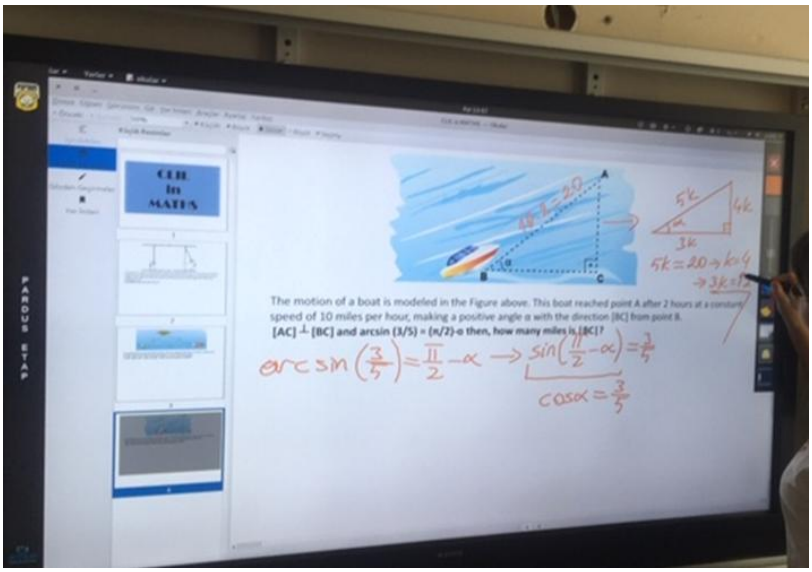


Figure 8. Student answering a mathematics question after mathematics teacher's explanations of unknown words and terms

After the CLIL lessons, face-to-face recorded interviews were conducted with the students. In these interviews, the students were asked pre-prepared questions about what they thought about the CLIL approach, how they felt about the CLIL lessons, how mathematics and language learning would change with this approach. An example of one of the interviews is presented below in Table 1.

Table 1. An example from interviews with students.

What are your thoughts on the CLIL approach?	From what I have witnessed, CLIL is a method that aims to teach mathematics and English together.
How did you feel during CLIL lessons?	Although my daily English is good, it was difficult to understand the lesson at first because I did not know the English of mathematical terms. But as I learned the terms, I began to understand what was taught more easily. I also became more confident in reading and speaking English. I think being able to understand and use foreign sources is another plus of this approach. I think it's more fun to learn English this way.
What do you think about having some of the classes in English?	I don't have any difficulty in courses such as mathematics and physics, other than learning the terminology, but I think I will have a hard time in more verbal courses such as history, biology, geography and literature.

Table 1 shows that at the end of this study, students had an idea about the CLIL approach. They shared how this practice made them feel and explained the good and bad aspects of the CLIL approach in their opinion. The majority of students showed a positive attitude towards CLIL implementation and stated that they found it beneficial for language learning and acquisition.

The data obtained from the interviews with the students are associated with the previously created codebook and shown in Table 2 with examples.

Table 2. Codes for data from the interviews with the students.

Coding category	Code	Examples
Students' feelings about the lessons	Enjoyable	The classes were very fun. I enjoyed the group work very much.
	Interesting	Listening and speaking English in math class was an interesting experience for me.
	Different	It was a different experience than I've had before and I would like all classes to be like this.
	Boring	I have trouble with mathematics and it was very boring to try to understand a lesson in a foreign language that I could not understand in my native language.
	Terrifying	I had a hard time in class and was very scared of the possibility of the teacher asking me questions.
Students' thoughts on the difficulty of the lessons	Easy	Once I learned the math terms in English, the lessons were very easy.
	Not different	It wasn't much different from our other math courses, except for the mathematical terminology.
	Difficult	Although I was good at math, the lessons were very difficult for me because my English was bad.
Students' thoughts on the CLIL approach and bilingual education	Useful	I think it is very useful to learn both math and English at the same time, so we can benefit from resources in foreign language.
	Efficient	In my opinion, it is a very effective method for learning a foreign language. If at least some of our classes were taught in English in primary and secondary school, my English level would have improved a lot.
	Unnecessary	I would like to learn English in English class and mathematics in mathematics class. I think it is a very unnecessary implementation.
	Useless	While the university entrance exam in our country is conducted in Turkish, learning

		mathematics and other courses in English is useless and unnecessary. It may even be detrimental to exam success.
Changes in students' attitudes towards mathematics	Better	I love both math and English lessons. Having both together made math more enjoyable for me.
	Not changed	I love mathematics. It doesn't matter to me what language it is in. Because mathematics is universal, and so is its language.
	Worse	I study hard for mathematics and I want to be successful. But I had a hard time in these lessons where the CLIL approach was used. I couldn't understand most of the things. Frankly, I've been alienated from mathematics.

As stated in the method section, the codebook was previously prepared by the practitioner-researcher. However, as can be seen from Table 2, the codes *different*, *terrifying* in coding category 'Students' feelings about the lessons', *not different* in coding category 'Students' thoughts on the difficulty of the lessons' and *useless* in coding category 'Students' thoughts on the CLIL approach and bilingual education' were added to the codebook based on the students' responses after data analysis. In the examples column, one example from the students' responses in the data was selected and placed in the table.

In addition, during CLIL lessons, the students' attitudes towards the lesson, their gestures and facial expressions, their dialogues among themselves and their reactions towards the teacher were observed by the researcher and these observations were noted. The findings obtained through both interviews and observation notes showed that the students' attitude in this study was very positive and students expressed that they could learn English and mathematics content with this implementation easily and in a more enjoyable way. This finding is consistent with the interview data and the previous studies in the literature (see Coyle, Meyer, & Staschen-Dielmann, 2023; Goris, 2023; Novotná & Hofmannová, 2000; Orozco& Pedrosa, 2022). In the interview data analysis, it was revealed that there was an increase in students' awareness of the

positive effects of CLIL implementation for their mathematical skills development, especially in solving verbal problems. Also, considerable positive effects on their view of learning English were observed. A surprising finding was that students were observed searching for mathematical terms in English that had not been addressed in the CLIL classes, such as *exponential*. This finding suggests that a CLIL class might foster learner autonomy. It was also observed that students' motivation to study increased, which is in line with the findings of studies conducted by Schukajlow et al. (2023), Arnandiz et al. (2022), Önder-Özdemir (2023) and Vlasenko et al. (2020). CLIL experts were contacted as external assessors for this study. One assessor, an EFL professor from Turkey who has studies on the CLIL approach, recommended at least two hours of CLIL classes in a week to increase the permanence and impact of lessons. The second assessor, a CLIL teacher from Italy, suggested project and task based learning to integrate CLIL classes.

6. Conclusion

The present study reported the steps followed to develop mathematics literacy for bilingual education in a state secondary school in Turkey. The steps in the present study suggest that while implementing CLIL, student-teacher interaction accompanied by a needs analysis can be the first step that can tailor the tasks and also facilitate both content and language learning to implement CLIL effectively. The steps in this study can be adapted to different levels of education where CLIL implementation aims to be utilized. When teachers design activities by tailoring them to students' needs, CLIL classes can be more successful. It is notable that in contrast with a traditional language learning approach, CLIL is student-centered. In this study, students determined the words and terms they did not know as a class, and after the teacher provided the necessary information, the students solved the questions. Students are at the center of the learning environment. The teacher took on the guiding role. This study has some limitations. Firstly, this is a preliminary study and is limited to one school. Secondly, the time frame was a limitation because students in this study were observed for eight consecutive weeks because the school administration granted eight weeks of leave for this study. Thirdly, this is the researcher's first study on CLIL and first implementation.

Further research should be conducted, especially over longer periods of time to teach more topics in maths and provide terminology knowledge in different contexts and with different age groups.

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Pluriliteracies in Higher Education: Developing English competence for interpreters and translators through a deeper learning episode

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Abstract

CLIL practices were widely introduced in Spanish education over twenty years ago (Jover et al., 2024; Otto et al., 2024). Nevertheless, the transition of this methodological innovation to university contexts in Spain seems challenging due to the lack of resources. In this paper, our main aim is to evaluate the potential of applying the principles of CLIL in a university setting, within the framework of a language module through the implementation of a pluriliteracies approach. For that purpose, we present an exploratory didactic proposal in the form of a deeper learning episode for the Language B English 4 (C1) course in a bachelor's degree in Translation and Interpreting at a Spanish online university. While respecting the fundamentals of CLIL, we aim to steer towards pluriliteracies, a more global approach in which learners develop a series of competencies that are key for interpreters and translators. Thus, this project offers a pragmatic example of how a language module can be transformed from a traditional language-led course to a content-based one which is more comprehensive and meaningful. In the learning episode, a series of values, attitudes and key skills such as knowledge and critical understanding begin to emerge (Council of Europe, 2016) through the topic of art and its cultural implications. This, in turn, translates into long-term sustainable curricula aligned with Sustainable Development Goal 4: Quality Education, target 4.7 (United Nations, 2015). Ultimately, this approach could provide language teachers with new opportunities to redefine their role.

Keywords

Deeper Learning; EFL; Pluriliteracies; Sustainable Curricula; Training of Translators and Interpreters.

1. INTRODUCTION

Bilingual school programmes were introduced in the Spanish school system in 2004, almost twenty years ago. This implies the first cohort from those programmes began their university studies in 2016. Despite the variety of models in Spain -18 different ones, according to the Bilingual Education Association[1], and their associated controversies (Anghel et al., 2012; Dobson et al., 2010; Palacios-Hidalgo, 2020), it is undeniable that at its very core lies the objective of improving not only language proficiency but also language education across the different educational levels. It is also indisputable that, in a globalised world, the spread of bilingual programmes is unstoppable.

In terms of university studies, however, advances in bilingual programmes have been more limited (Contero et al., 2018; López Pérez, 2017; Terrado et al., 2019). Nevertheless, there has been an exponential growth in the number of degrees that can be studied in English at Spanish universities as part of their internationalisation strategies. Whilst school programmes and pre-university teacher training have had Content and Language Integrated Learning (henceforth, CLIL) theories as their focal point, universities seem to have followed English as a Medium of Instruction (henceforth, EMI). The former is defined by Coyle, Hood and Marsh (2010) as,

> [...] a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language. Each is interwoven, even if the emphasis is greater on one or the other at a given time. CLIL is not a new form of language education. It is not a new form of subject education. It is an innovative fusion of both. (p. 1)

The latter, on the other hand, is conceptualised as "the use of English language to teach academic subjects [...] where the first language (L1) of the majority of the population is not English" (Dearden, 2014, p. 6). In EMI settings, thus, the focus seems to be on the teachers and their language skills to conduct a lecture in English. In contrast,

[1] https://www.ebspain.es/

CLIL is more centred around students' learning experience. Furthermore, CLIL aims to enhance language learning by immersing students in the target language, encouraging interdisciplinary connections between language and content areas, thus promoting a more holistic approach to education. Darn (2006) emphasizes the similarities between CLIL and current models of English Language Teaching (ELT):

> A CLIL 'approach' is not far removed from humanistic, communicative and lexical approaches in ELT, and aims to guide language processing and supports language production in the same way that an EFL/ESL course would by teaching techniques for exploiting reading or listening texts and structures for supporting spoken or written language. (p. 4)

The author also advocates for a revision of language education models whose pivotal elements are based on linguistic progression. More recently, Coyle and Meyer's (2021) pluriliteracies approach emphasized the development of multiple literacies beyond traditional reading and writing to enable learners to navigate, communicate, and participate meaningfully in a complex, multicultural, and technologically mediated global society.

Pluriliteracies encompass not only language and textual literacies but also digital, visual, and intercultural literacies. As such, it may open the door for "language teachers to experiment and adapt learning pathways in their classrooms to create their own pluriliteracies environment – which is *not* dependent on other subject disciplines" (p. 144).

Coyle, Halbach, Meyer and Schuck (2018) refer to these models as "language using for learning" (p. 353). Other authors such as Dale (2020) have been working on the reconceptualization of the role of language teachers as subject teachers within the pluriliteracies framework, "applying the pluriliteracies model and genre pedagogies to the teaching of text analysis may offer language teachers a usage-based view of language and provide usage-based pedagogical models for the teaching of their own subject" (p. 160).

Following these tenets, in this article we will explore the possibility of going beyond the traditional schemata of an English course by designing an educational experience that could better fulfil the needs of students in the degree in Translation and Interpreting.

2. CONTEXT

The Valencian International University (henceforth, VIU) is a fully online institution that delivers officially recognised courses at undergraduate and post-graduate levels, including doctoral programmes. The 4-year degree in Translation and Interpreting falls within the scope of the Faculty of Arts, Humanities and Communication.

Lessons at VIU are carried out synchronously, encouraging active participation. Students' involvement is key for the success of the courses, particularly those involving the learning of a foreign language. Students in the degree in Translation and Interpreting must follow the official program, which includes four English subjects which range from B1 to C1 level and have a study load of 6 ECTS each.

The focus of this paper is the subject Language B English 4 (C1 CEFR Level), of which one of the authors is the teacher. The competences and learning outcomes that students must attain at the end of the course are closely related to the Action-Oriented approach (Piccardo & North, 2019) embedded in the vision of the CEFR Companion Volume (2020). In each cohort, there are students who are native or bilingual together with others who are more aligned with the level of the subject in progress. Our challenge is to be able to offer a relevant educational experience in which everyone has an opportunity to learn.

As can be seen in Table 1, complex communicative skills are at the very core of this subject, as well as different textual genres and a variety of application contexts.

Table 1

Language B English 4 Specific Competences (SC) and Learning Outcomes (LO)

Specific Competences	Learning Outcomes
SC.8. Understand a wide variety of long texts with a certain level of proficiency in Language B, at level C1 of the CEFR.	**LR.1.** Demonstrate understanding of a wide variety of long texts with a certain level of demand, as well as to recognize implicit meanings in them.
SC.9. Express fluently without much obvious effort to find the appropriate expression in Language B, at level C1 of the CEFR.	**LR.2.** Express oneself fluently and spontaneously without very evident signs of effort to find the appropriate expression.
SC.10. Use language flexibly for different purposes in Language B at CEFR level C1.	**LR.3.** Produce clear, well-structured and detailed texts on topics of a certain complexity, showing a correct use of the organizational complexity, showing a correct use of the mechanisms of organization, articulation and cohesion of the text.
SC.11. Produce clear, well-structured and detailed texts on topics of a certain complexity, showing a correct use of language for different complexity, showing a correct use of the mechanisms of organization, articulation and cohesion of the text, in Language B, at level C1 of the CEFR.	
SC.15. Demonstrate skills in linguistic mediation.	

Note. Taken from the official course syllabus, SC and LO are present in the official and accredited curriculum.

Until the academic year 2021-2022, the course material chosen was "Viewpoint"[2], by Cambridge University Press. Whilst we consider this to be a valid resource, it has proven to be insufficient to address students' particular needs and enhance students' motivation due to its focus on a progression based on linguistic features – grammar and vocabulary. On the dedicated website for the book, the authors state that, "each unit consists of four two-page lessons that present grammar, vocabulary, and conversation strategies, and include listening, speaking and reading practice" (para. 2). They also

[2] https://www.cambridge.es/en/catalogue/adults/courses/viewpoint/components

highlight that there is "a 'Speaking naturally' activity at the back of the book that presents and practises a feature of pronunciation, linked to the language of the unit" (para. 5). Therefore, the communicative activities proposed in each unit are tailored to the language of the unit, a common occurrence for English teaching materials and course design.

Students have noticed the focus on linguistic aspects in the recurrent student survey that takes place at the end of every course, with negative comments about their learning experience such as:

> *It [the course] only focuses on grammatical competence, without work on other linguistic skills, such as comprehension and oral expression. There is not any work on the cultural aspects, so necessary for a translator*" (Student A, translated from Spanish), or "*Only the theoretical materials of Viewpoint [are used], and not many practical activities have been carried out in the classes, everything was practically theory* (Student B, translated from Spanish).

Translators and interpreters face great challenges in their work to ensure effective and accurate communication between languages and cultures. Information transfer, pragmatic awareness and conciseness are paramount for their professional success. Consequently, there is a need to provide degree students with opportunities to develop their competences. For that purpose, a Deeper Learning Episode (DLE) was planned following Coyle and Meyer's (2021) Pluriliteracies Approach to Teaching for Deeper Learning (PTDL).

A DLE transcends the concept of a traditional lesson. It is composed of different outcomes that allow learners and teachers to check that deeper learning is indeed taking place. Deeper Learning is understood as "helping learners 'connect the dots' to develop and internalise conceptual knowledge while practising relevant skills and strategies in such a way that they can be successfully transferred to other contexts and problems" (Coyle et al., 2023, p. 1).

At the core of DLEs design are the learners' strengths, needs and interests as well as a realisation of meaning making through Dalton-Puffer's (2013) classification of

cognitive discourse functions, which refer to the various ways in which language is used to convey and manipulate information, thoughts, and ideas in communication. Dalton-Puffer's framework is particularly valuable for understanding how language is used in various contexts and for teaching effective communication skills in different genres of discourse, such as narrative, expository, expressive, and directive. Hence, throughout the DLE students will need to establish relationships between knowledge and communication by engaging in the specific major activity domains integral to the subject (doing, organising, explaining and arguing).

In the following section, the different steps of the planning of a DLE for the Language B English 4 course (C1 CEFR Level) will be presented.

3. Didactic Proposal: Exploring Pluriliteracies through a Deeper Learning Episode on Linguistic and Intercultural Mediation

We believe that the transition towards meaningful learning in English language courses in this university degree may involve the implementation of PTDL. Using this approach will enable students to acquire and practise competences that will be useful not only in other academic areas, but also in their future professional lives.

For this reason, in this section, we present the steps that, according to Coyle and Meyer (2021), need to be taken by educational practitioners in order to make the shift towards a more holistic, critical and value-driven teaching-learning process. The focus is therefore on curricular sustainability, i.e. exploring options to promote deeper, significant learning without challenging the specific competences and learning outcomes that are set by the official regulations of the country.

3.1 Essential Steps to Planning a Deeper Learning Episode (DLE)

Coyle and Meyer (2021) propose using five questions "which position educators as designers of learnscapes" (p. 127). These five questions (Q) are key to beginning this transformation towards the planning of a meaningful teaching and learning experience within the pluriliteracies scheme. When designing a DLE, educators need to ask

themselves these fundamental questions. Below, we outline these enquiries in connection with the four dimensions (D) of the PTDL model (Coyle & Meyer, 2017).

- **D1**. Supporting knowledge building (facts, concepts, procedures and strategies).

  Q1. What do I want my learners to know or be able to?

  While focusing on knowledge (factual, conceptual, procedural, strategic /metacognitive), this question puts the students and their needs at the centre of the learning experience.

- **D2**. Ways of demonstrating understanding (purpose, genre, mode and style).

  Q2. How will I know they know?

  With different milestones set throughout the DLE, the success of the teaching and learning process can be determined. Through preliminary product outcomes (PPO) (or small preparatory activities that build up on each other) we aim to closely observe learners demonstrate their understanding so that they can perform well when they reach the main product outcome (MPO) (or final task).

- **D3**. Learner-teacher relationships (affect, engagement, mastery, and reflection).

  Q3. How can I support active knowledge co-construction for my learners?

  It is essential to connect subject-specific ways of constructing and communicating knowledge with learner's strengths, needs and interests to foster learner commitment and achievement. Social-interaction patterns and the use of digital media must be used to support this co-construction of knowledge and learning partnerships.

- **D4**. Ways in which mentoring learning can contribute to learner's growth mindset that directs and sustains their own learning (design, scaffolding, feedback and assessment).

Q4. How will I support my learners every step of the way?

Triggering and increasing student engagement and expertise through relevant topics, dynamic scaffolding, constant feedback, and assessment will help learners achieve the desired competences.

Q5. How will I create and sustain learner engagement?

The answer promotes growth mindsets for deeper learning, where relevance (personal and practical), transfer pathways and critical reflection, revision, and self-improvement are embedded in task design principles.

3.2 A Deeper Learning Episode for Language B English 4

First, in a conceptualising continuum, a DLE follows a logical pathway by focusing on facts in the early stages, then concepts, to finally implementing procedures and strategies. It is, therefore, grounded in the idea that internalisation of conceptual knowledge will only occur when promoting deep understanding, deep practice, and the cultivation of a growth mindset (Coyle & Meyer, 2021).

Secondly, opportunities shall be created for learners to develop the ability to take the content knowledge that was acquired in one setting and apply it to another while expressing understanding in a better and more sophisticated way, taking into account a communicating continuum with a focus on purpose, mode, genre and style (Meyer et al., 2015).

Finally, to make this process meaningful and engaging, the tasks will often involve shared learning and interactions with others as a community, as well as thought-provoking topics through which future translators and interpreters may develop expertise and competences.

The goals of this DLE are, thus, based on a combination of the general competences (GC) of the official Degree in Translation and Interpreting and the specific competences (SC) of the Language B English 4 course:

GC.1.- **Integrate knowledge** to formulate **judgments** based on information in **3 working languages** (A, B and C) and field of expertise (art), including **reflections on social and ethical responsibilities** in the field of Translation and Interpreting.

GC.7.- **Collaborate** actively with **other people**, areas and/or organizations in order to achieve common objectives, with the aim of explaining and prevent possible conflicts arising from **cultural differences**.

SC.8.- Understand a wide **variety** of long **texts** with a certain level of proficiency in Language B, at level C1 of the CEFR.

SC.10.- **Use language flexibly** for different purposes in Language B at CEFR level C1.

SC.11.- Produce clear, well-structured and detailed texts on topics of a certain complexity, showing a correct use of language for different complexity, demonstrating a **correct use of the mechanisms** of organization, articulation and cohesion of the text, in Language B, at level C1 of the CEFR.

SC.15.- Demonstrate skills in linguistic **mediation**.

As a means to integrating these competences, the key elements of the learnscape can be summarised as language proficiency, pluriliteracies, plurilingualism and cultural awareness. The challenge involves envisioning a final task that requires trainees to take these foundations to a practical level. An effective planning technique is to think about the main product outcome first and, from there, plan the episode, taking steps backwards by creating micro tasks which prepare learners (through continuous feedback and revision) to tackle the main assignment.

For the purpose of creating this holistic final task, and keeping the GCs and SCs in mind, the specific questions now become:

(1) Can we outline a task in which students are able to formulate judgements based on information in three working languages, including reflections on social and ethical responsibilities in the field of translation and interpreting?

(2) Is it possible for us to build a setting (online) in which the learners are able to work in a collaborative way?

(3) Could we create the conditions so that the trainees may use a variety of long texts (written, visual, audio, audio-visual) and produce well-structured texts at a C1 level?

(4) Can we create an outline so that learners are able to demonstrate knowledge, skills and strategies in linguistic and intercultural mediation?

The last big step towards the transformation of the course design also involves integrating the PTDL five guiding questions explored in section 3.1, which will be answered next.

Q1. What do I want my learners to know or be able to?

To answer this enquiry, the contents are selected from the course syllabus and have been re-designed considering Bloom's Taxonomy of thinking skills (Bloom et al., 1956; Anderson et al., 2001).

For promoting a conceptualising and communicating continuum, progression is guaranteed by setting up five different learning stages linked to cognitive discourse functions (CDFs): [1] basic understanding (identify and understand); [2] foundational skills (research, describe, explain, systematise and mediate); [3] deeper understanding (making connections and critical thinking); [4] deep practice (translate, mediate, write) and [5] transfer (apply) as can be seen in Table 2[3].

Taking all these notions into account, the final task can then be conceptualised. It consists of a role-play activity in which students work in small groups within a controversial scenario involving a conflict among cultures, which they are challenged to resolve by assuming a particular role. During the learning process, students will have to

[3] The planning grid has been dissected into Tables 2-6 so that the questions can be addressed gradually in this text, but it can be found in its entirety in Appendix A (see it here).

handle a variety of authentic text modalities in different languages and implement cultural, textual and communication mediation techniques.

The Table below shows how the contents evolve in each stage of the episode until they reach the transfer phase, where students are expected to be able to apply what they have learned in this course to other courses in the degree.

Table 2

Designing a Deeper Learning Episode (Q1)

What do I want my learners to know or be able to?
1. Basic understanding:
1.1 Identify artistic manifestations by relevant British artists.
1.2 Understand the controversies surrounding the world of art.
2. Foundational skills:
2.1 Do research on the political, environmental and social dimension of art in different languages.
2.2 Mediate and organize information.
2.3 Describe background and purpose of works of art.
2.4 Explain controversial issues surrounding art.
2.5 Keep a glossary of terminology to discuss arts.
3. Deeper understanding:
3.1 Discover the implications of art beyond the visual.
4. Deep practice:
4.1 Translate & mediate between the Source Text and English (Language B).
4.2 Use subject specific language.
4.3 Use formal debating code for argumentation.
4.4 Write formal texts.
5. Transfer:
5.1 Focus on specialized translation.

5.2 Debating code and conventions. 5.3 Mediating (cultural & linguistic), Interpreting & Translating - subject specific texts in three working languages. 5.4 Public speaking in English. 5.5 Writing formal texts & APA 7 citation system. 5.6 Global learning dimensions.

Appendix B[4], section "04 Deep Practice", shows the course materials[5] that have been conceived for the final product outcome. The first phase of the roleplay entails setting up the context, roles, and purpose of the task. In the second phase, specific information about each interlocutor and links to find useful documents to pursue their goals are provided.

[4] See Appendix B here.
[5] The complete teaching materials are available in Appendix B.

Figure 1

DLE Stage 4: Deep practice. Role-play (Phase 2)

Then, fostering a cooperative learning experience, using the Aronson's puzzle technique (Slavin, 1995; García et al., 2012), students will prepare their interventions together with their counterparts. This step will also create a chance for the instructor to give feedback on the students' notes and boost their confidence when they attend the final meeting.

The third phase of the simulation game sets the procedures for the final interaction. The "role-play meeting" worksheet facilitates specific instructions about the duration, dynamics and purpose of the conference. Besides, after the meeting, the group will write a formal letter of request which will need to be submitted together with the meeting recording and minutes. Special attention has been paid to clearly define the guidelines and progression of each activity so as to ensure a more accurate and fairer assessment of all students' submissions by applying the rubrics specifically designed for each task.

Once the content knowledge has been established in the learnscape from least to most cognitively challenging and the final product outcome has been defined, the remaining PTDL questions need to be addressed.

Q2. How will I know they know?

According to Coyle et al. (2023), deeper learning episodes integrate and combine stages of surface learning, consolidation and transfer of knowledge along with their corresponding tasks. This DLE aims to provide a range of opportunities for learners to demonstrate understanding, reflect on their own and their peers' learning progress, revise their work every step of the way using teachers' comments on each milestone and enable better comprehension. This idea connects to the second guiding question, developed in Table 3, which helps us consider the establishment of scaffolding tasks or preliminary product outcomes during the process to ensure effective teacher feedback, formative assessment and deeper learning.

Table 3

Designing a Deeper Learning Episode (Q2)

How will I know they know?
Preliminary product outcomes: ● Basic understanding. "Controversial works of art": read/listen and summarize information (1.2). ● Foundational skills. "Art. What should we consider?": complete an index card using resources in different languages and modes (2.1-2.4). ● Foundational skills. "Create your own glossary": identify terms, find equivalences and contextualize (2.5). ● Deeper understanding. "Discover the implications of art beyond the visual": open class discussion (3.1). ● Deep Practice. "Role-Play at Narita International Airport": meeting minutes (shared ideas and opinions properly justified with reasons and examples)(4.1-4.4). ● Deep Practice. "Role-Play at Narita International Airport": script produced by groups divided in their different roles (group 1: customs officers; group 2; art managers; group 3: cultural and linguistic mediators). Reviewed by the teacher, but not included in the final mark. ● Deep Practice. "Role-Play at Narita International Airport": formal letter of request) (4.1-4.4).

Main product outcome:

Purpose: facilitate the exhibition of Damien Hirst's work of art at The Mori Art Museum in Japan.

Genre: formal speech - negotiations at Narita International Airport.

Mode: text and video.

Style: formal language.

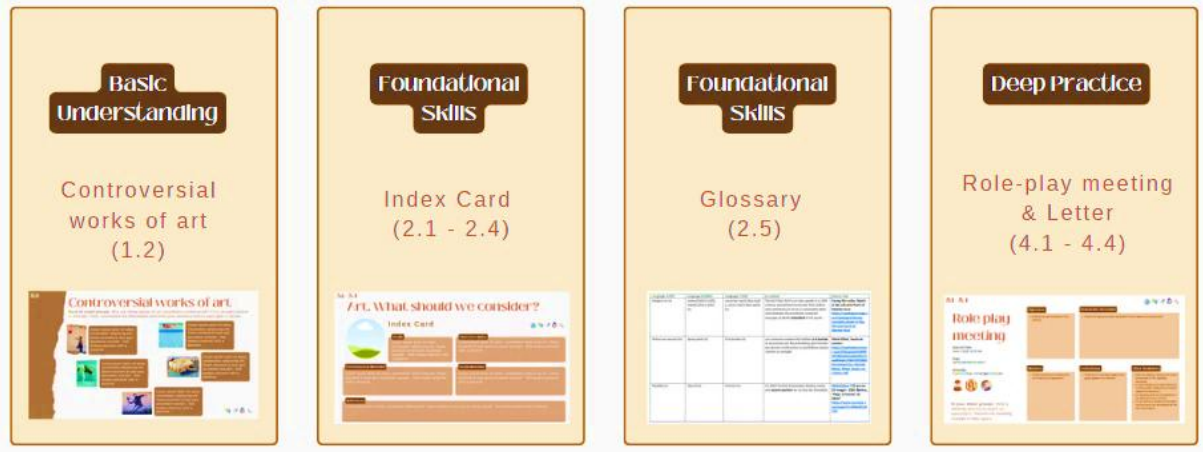
Possible Transfer:

- Mediating, Interpreting and Translating subject specific texts from Spanish & French (L1) into English (L2).
- Giving a public speech in English.
- Debating and formal meetings etiquette and procedures.
- Writing formal texts.

Considering this, Figure 2 depicts the four tasks that will help the teacher to "know what the students know" and will be considered for assessment: each activity should be associated with its rubric which will also be shared with the trainees as a pedagogical tool.

Figure 2

DLE: Preliminary and Main Product Outcomes



Q3. How can I support active knowledge co-construction for my learners?

The third guiding question focuses on the use of methodologies that contribute to co-construction of knowledge by paying attention to social interaction and the use of (digital) media. Table 4 reviews the foundations of the didactic proposal.

Table 4

Designing a Deeper Learning Episode (Q3)

How can I support active knowledge co-construction for my learners?
Construction of Knowledge: (X) inquiry-based learning (X) problem-based learning (X) gamification **Social Interaction:** ● Individual and collaborative work. ● Use of L1 and L2. **Use of (digital) media:** ● Discussions and meetings will be held digitally via *Blackboard Learn* (Break out rooms and Open Class Feedback). ● The meeting will be held and recorded on *Blackboard Learn*.

Q4. How will I support my learners every step of the way?

The role of the educator is completely transformed in this episode, becoming an instigator of creativity and interesting private and open-class discussions in which students can develop critical thinking and work with their peers. The tasks leave room for the student to choose which texts and topics to work on autonomously, completing them one step at a time so that the teacher can monitor the acquisition of content, language, and skills, addressing the problems before it is too late. Table 5 illustrates fundamental aspects in terms of scaffolding, feed-back, feed-up, feed-forward and assessment.

Table 5

Designing a Deeper Learning Episode (Q4)

How will I support my learners every step of the way?
Scaffolding: ● Initial research is scaffolded by providing some texts (written, audio-visual and in different languages: SP/FR/ENG). ● Class and small group discussions will be guided using index cards in which Ss will record their knowledge and conclusions. ● Mediation & Translation tasks will be done in pairs/small groups and monitored by the teacher. ● Examples and instructions will be provided (word count, structure and purpose of each task). ● Role-play. The class will be divided using the jigsaw technique/Aronson's puzzle (group 1: customs officers; group 2; art managers; group 3: cultural and linguistic mediators). Together, they will prepare a draft of the script for the meeting. They will use the resources facilitated by the instructor and other they consider relevant. The drafts will be submitted in advance for the teacher's supervision. **Feed-back:** ● Pair feedback during discussions. ● Individual teacher feedback on mediation tasks and meeting script. ● Peer & teacher feedback on role-play and letter. **Feed-up:** ● Structured worksheets, instructions and assessment grids. **Feed-forward:** ● Individual teacher feedback. ● Peer feedback. ● Self-assessment. **Assessment:** ● Learning goals and results made visible for students. ● Skills always present. ● Assessment grids available for each task.

Q5. How will I create and sustain learner engagement?

"Deep practice is a highly focused and reflective activity, it requires deep engagement and long-term commitment and motivation" (Coyle et al., 2023, p. 7). We must not lose sight of the fact that the topics to be covered and the activities proposed must be relevant and motivating so that learning experience is meaningful. In this English class we must add a value to the students' education and connect it, unavoidably, to other subjects and, ultimately, to the professional world.

Table 6

Designing a Deeper Learning Episode (Q5)

How can I support active knowledge co-construction for my learners?
Engagement: ● Thought provoking topic. ● Professional development. **Personal meaningfulness/relevance:** ● Students will become custom officers, art managers & cultural and linguistic mediators. They will all be working with different languages, registers, and texts. And will be involved in various mediating and translating experiences. ● Relevance of the topic as students will be future translators, mediators, and interpreters and will have to deal with cultural differences and various perspectives. ● Development of democratic citizenship: tolerance, acceptance, critical thinking. **Opportunities for autonomous learning:** ● Independent research on the different definitions and expressions of art. ● Meaningful conversations with peers. ● Individual development of critical thinking and cultural awareness. ● Acting as an expert, making value judgements using formal language. **Reflection & Revision:** ● Preparing ideas with justification and examples in order to offer meaningful contributions to the discussions. ● Collecting main arguments of a text within a cultural context and transferring them into another language and context.

Capturing the student's attention is the first step towards meaningful learning, therefore we must be particularly careful as to how we introduce the topic in the classroom. Appendix B, section "01 Basic Understanding" depicts the initial stage or **activation phase**. This stage seeks "to generate learner engagement, activate prior knowledge, establish relevance and set the ground for transfer of learning. Its focus is on facilitating learning by setting clear goals" (Coyle et al., 2023, p. 12). At the beginning of this educational experience, students will identify artistic manifestations by relevant British artists and try to make sense of some of the controversies surrounding the world of art. Prior knowledge is activated with controversial images and a triggering question that will be discussed in small groups.

Each picture comes with a link that redirects the participants to different text modalities (news reports, videos, and podcasts) in different languages (Spanish, language A; English, language B; and French, language C). Students will subsequently be asked to summarise the information in the spaces provided following an example (Appendix B, section "01 Basic Understanding").

When moving on to the next stage, coined the **surface phase** by Coyle, Meyer and Staschen-Dielmann (2023) "learners (will) explore new ideas, facts, concepts and skills to acquire a basic understanding of the content which they demonstrate through a first learning outcome or product. The teacher provides feed-back, feed-up and feed-forward at different levels" (p. 12).

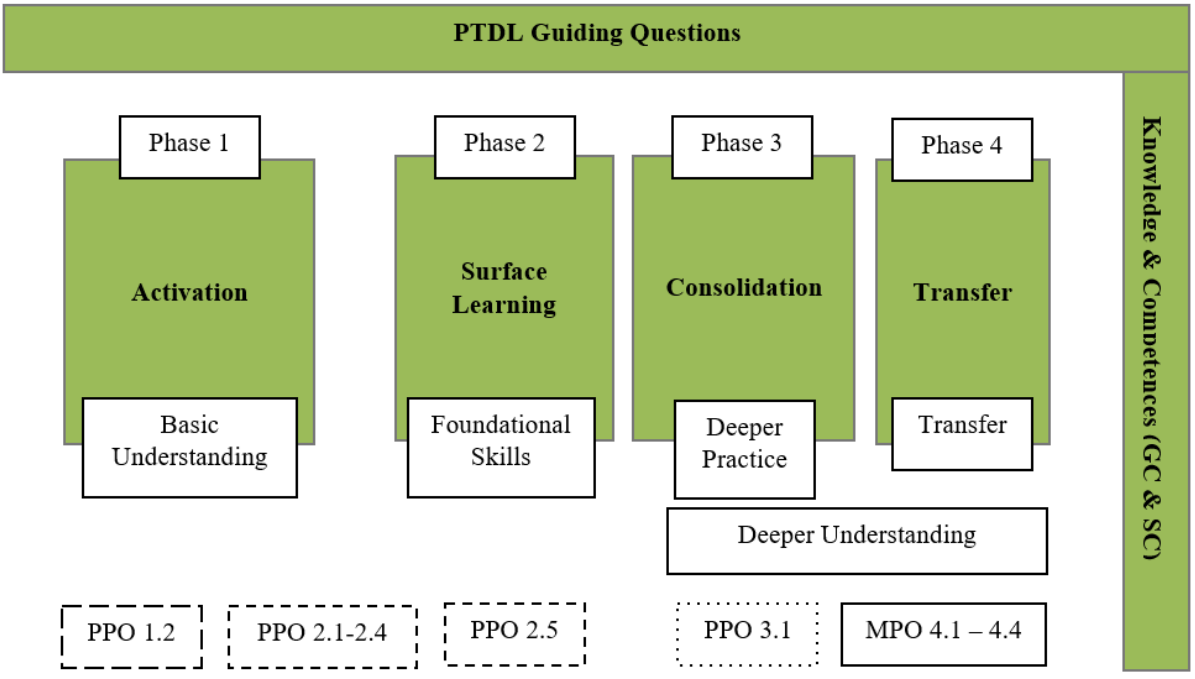
The first learning product was required at the initial stage as preparation for the second task that takes place in this surface phase. After group work and students-students-teacher communication, it is necessary to leave a space for reflection (and some teacher-student interaction) and, as a consequence, an opportunity for autonomous learning is created. The guidelines for each task have been clearly outlined so that students are fully aware of what to do and can work autonomously and independently. Nevertheless, the instructor will always be available to answer questions and monitor the learning process (Appendix B, section "02 Foundational Skills").

The **consolidation phase** focuses on creating opportunities for learners "to deepen their content understanding (to support the process of internalisation) and to deep-practise specific skillsets (to support the process of automatisation)" and future transfer (Coyle et al., 2023, p. 12). Students will be assigned another task to show their understanding and the improvement of their skills in a progressive way. Individual or joint reflection will be fostered, and students' work will be revised, providing them with specific feedback towards deeper learning (Appendix B, section "03 Deeper Understanding").

During the final, **transfer phase**, "learners are challenged to apply their knowledge to different contexts and situations. Such application involves utilizing their knowledge and skills through investigating, experimenting, problem solving or decision-making" (Coyle et al., 2023, p. 12). Tables 2 and 3 together with Appendix B, section "04 Deep Practice" and "05 Transfer" illustrate ways in which students will apply and use their newly acquired knowledge and competences in the future.

Figure 3

DLE "Art beyond the Visual": Structure Overview



4. Conclusion

At the beginning of this paper, it was argued that the pluriliteracies framework opens the possibility of a transformation of didactic planning through the promotion of deeper learning guided by a series of fundamental questions which may help educational practitioners shift current systems for the better. The teaching of English as a foreign language (EFL), in particular, can benefit from PTDL by becoming a subject that really fulfils students' needs in different contexts by providing a content of its own.

In order to demonstrate this, we have presented an alternative way of developing a meaningful learning experience – in the form of a Deeper Learning Episode – for a group of undergraduate students in the degree of Translation and Interpreting at an online university in Spain studying the subject English B, which corresponds to a C1 CEFR level.

Due to time constraints, there have only been partial interventions in the group with the material, but the change is already having an impact amongst students, who are now leaving positive comments like these in the end-of-course survey: "*Interesting classes, with varied material and oriented to our Professional future.*" (Student C, translated from Spanish); "*[the teacher] Relates the contents with the degree itself, not teaches us English only.*" (Student D, translated from Spanish); "*[the teacher] Integrates knowledge into practical part for our future role as translators.*" (Student E, translated from Spanish)

The positive responses have motivated our current and future research focus on the full implementation of these materials and techniques. In conclusion, this preliminary stage has encouraged us to pursue PTDL, potentially renewing language teachers' sense of identity and positively impacting students' learning experiences.

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Exploring interdisciplinary collaboration: Mixed methods insights from a higher education institution study

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Abstract

This article presents a mixed-method study exploring interdisciplinary collaboration at Castelo Branco Polytechnic University during the 2022-2023 academic year. The collaboration involves an English for Specific Purposes (ESP) teacher and a content teacher, examining receptiveness to collaboration and the impact of Integrated Content and Language in Higher Education (ICLHE). The study focuses on first-year undergraduate students in the fashion and textile design course, utilising questionnaires developed with Social Cognitive Theory (SCT) and Expectancy-Value Theory (EVT) for validity and reliability. The study provides a broad context based on research on interdisciplinary collaboration and ICLHE. Preliminary qualitative and quantitative analyses reveal significant challenges for students in technical language, underscoring the need for targeted support. The findings indicate a generally positive attitude towards ICLHE and collaborative teaching methods. Additionally, the study highlights how students' self-efficacy, expectancy beliefs, and task values influence their receptiveness and learning outcomes in interdisciplinary settings. The results emphasise the importance of clear learning objectives, active engagement, and adequate resources, suggesting that effective interdisciplinary collaboration can enhance technical language learning and overall educational experiences. These insights offer actionable recommendations for improving teaching practices and fostering successful interdisciplinary initiatives in higher education.

Keywords: Interdisciplinary collaboration, student receptiveness, ICLHE, Social Cognitive Theory, Expectancy-Value Theory

1. Introduction

In Higher Education Institutions (HEIs), student feedback primarily assesses course quality and learning outcomes, with limited research on students' receptiveness to different teaching methods. To address this gap, this study draws on existing research. It incorporates specific criteria to evaluate first-year undergraduate students' perspectives on interdisciplinary collaboration and Content and Language Integrated Learning (CLIL) in the fashion and textile design course. This article outlines the development of questionnaires, the initial analysis, and early findings from an ongoing study at Castelo Branco Polytechnic University, part of a PhD project at Porto University. The study focuses on interdisciplinary collaboration between an English for Specific Purposes (ESP) teacher and three content teachers, addressing challenges and opportunities in collaborative teaching. Given the study's extensive scope, this article specifically examines the responses of first-year undergraduate students to provide a detailed analysis of their perspectives on interdisciplinary collaboration within fashion and textile design.

Criteria for data collection methods are defined to assess interdisciplinary collaboration comprehensively. These criteria establish a research framework for teachers adapting to the evolving demands of globalisation. The subsequent sections will review pertinent literature, outline the research objectives, and detail the methodology, including criteria, data collection, and analysis techniques.

2. Literature Review

2.1 Collaborative teaching

Collaborative interdisciplinary endeavours within HEIs involve integrating diverse disciplines to address intricate challenges and advance research and education. Researchers (Axelrod, 2014; Hargreaves, 2019; Jortveit & Kovač, 2022; Marouli et al., 2017) emphasise the myriad benefits of interdisciplinary collaboration in higher education, such as fostering innovation, holistic understanding, and professional

development by merging diverse perspectives and expertise. Despite its significant real-world impact in addressing complex problems and benefiting communities (Alhassan et al., 2022; Jortveit & Kovač, 2022; Marouli et al., 2017), interdisciplinary collaboration faces challenges such as "difficulties in coordination," "unequal participation," "time constraints" (Jortveit & Kovač, 2022, p. 287), and "resistance to change" within disciplines (Marouli et al., 2017, p. 4820). However, these challenges can be overcome with careful planning and communication, leading to the realisation of the benefits of interdisciplinary collaboration (Chaovanapricha & Chaturongakul, 2020).

2.2 Integrating Content and Language in Higher Education

Integrating Content and Language in Higher Education (ICLHE) merges education and language through Content and Language Integrated Learning (CLIL), which combines language instruction with subject matter delivery (Coyle et al., 2010).

CLIL's effectiveness for language development, acknowledged by Lorenzo et al. (2011), aligns with the global focus of higher education, fostering motivation for foreign language acquisition. The impact of ICLHE on linguistic skills is evident in bilingual training programs, with ongoing discussions in higher education (Bamond et al., 2014; D'Alessio & Hardie, 2019b; Gabillon, 2020; Gil & Dueñas, 2023; McDougald, 2015; Vilkancienė & Rozgienė, 2017). showing that combining content and language enhances linguistic competence and academic knowledge, aiding language proficiency vital for academic and professional success.

2.3 ICLHE in Portugal

The internationalisation of Portuguese HEIs is a prominent focus in the evolving higher education landscape. Guided by EU directives and the strategic efforts of the Portuguese government, HEIs have established robust internationalisation policies (Coelho & Arau Ribeiro, 2018). As underscored in these policies, English's significance necessitates a balanced perspective. The importance of language instructional approaches, such as ESP, English Medium of Instruction (EMI), and ICLHE, becomes evident within this context.

In Portugal, ICLHE usage is uncommon despite interest from language and content teachers (Morgado et al., 2015). The 'CLIL-ReCLes.pt project' facilitated collaboration among language specialists and researchers from member institutions of the Association of Language Centres in Higher Education in Portugal (ReCLes.pt). It provided valuable insights into content teachers' and students' specific needs and challenges (Morgado et al., 2015). Subsequent studies have further emphasised the need for increased support for content teachers in Portuguese HEIs (Ellison et al., 2017).

In ICLHE courses, language specialists can collaborate with content experts to align language and subject matter objectives, providing crucial language support through workshops or dedicated courses. Their involvement varies based on institutional policies, program specifics, and language-related guidelines. Language specialists actively participate in most instances, working with content experts to merge language and subject matter in ICLHE courses (Fürstenberg et al., 2022; Kletzenbauer et al., 2022; Lyster, 2017), ensuring the "synchronisation of learning objectives and aiding students in developing language skills within subject-specific concepts" (Fürstenberg et al., 2022, p. 309).

2.4 Interdisciplinary Collaboration with English

Collaboration between English language teachers and content teachers in higher education is considered crucial for student success across contexts like EMI, ESP, and ICLHE (Alhassan et al., 2022; Chaovanapricha & Chaturongakul, 2020; Gustafsson et al., 2011; Zappa-Hollman, 2018). Research increasingly examines teachers' views on collaboration using the ICLHE approach, as seen in Ruiz de Zarobe and Cenoz's (2015) study on Spanish university-level teachers. The findings reveal that teachers perceive collaboration positively, recognising its value in enhancing teaching and supporting students' language learning needs, leading to improved student engagement and motivation.

Recent interdisciplinary collaboration studies (Chaovanapricha & Chaturongakul, 2020; Lasagabaster, 2018; Tiongson, 2019) have delved into various projects between English language and content teachers to enhance student outcomes and foster teacher

collaboration skills. Examples include research on CLIL in English as Foreign Language contexts, spanning technology-mediated collaboration (Arnó-Macià, 2014), policy development for collaboration and ICLHE practices (D'Alessio & Hardie, 2019a) collaboration in EMI contexts (Kletzenbauer et al., 2022), and the use of online forums and videoconferencing in the INCOLLAB Project (2018). These diverse approaches underscore the potential benefits for student learning and teacher professional development.

Student responses to collaborative teaching in ICLHE are consistently positive. Studies reveal that students enjoy simultaneously acquiring subject matter and language skills (Arnó-Macià et al., 2020; Mestre-Segarra & Ruiz-Garrido, 2022; Milcu, 2012). They value the support provided by English language teachers in grasping complex concepts and utilising subject-specific vocabulary. Furthermore, students appreciate the collaboration between content and English language teachers to understand subject matter and language proficiency development better (Ronfeldt et al., 2015; Swales, 1971; Zappa-Hollman, 2018). This collaborative approach enhances student engagement, motivation, and comprehension. In collaborative teaching settings, students report increased confidence in communicating in English, understanding subject-specific concepts, and expressing optimism about the interactive and engaging nature of the approach (Dugan & Letterman, 2008; Merino & Lasagabaster, 2018).

This study differs from previous research on interdisciplinary collaboration by focusing on Castelo Branco Polytechnic University and examining the receptiveness of its entire teaching staff in one scientific area. It offers an in-depth exploration across an entire semester of first-year undergraduate classes, extending to comparisons with third-year undergraduate and master's programs. This comprehensive approach provides a holistic understanding of interdisciplinary collaboration across academic levels. Additionally, the study highlights the proactive involvement of teachers in planning and monitoring student development and receptiveness throughout the semester, adding valuable insights into collaborative teaching dynamics.

3. METHODOLOGY

3.1 Objectives

The research instruments employed are deliberately aligned with specific objectives and questions, facilitating a detailed exploration of collaborative dynamics. The data is obtained from questionnaires administered to students at different stages of the study. These questionnaires provide an understanding of students' perspectives on interdisciplinary collaboration.

The research questions guiding the study are:

- What are the participants' perspectives on implementing interdisciplinary collaboration between ESP teachers and content teachers before and after the case study?
- To what extent does interdisciplinary collaboration enhance students' learning of the specific technical language of their content area?

The research uses questionnaires at two stages: initially to assess student receptiveness to interdisciplinary collaboration and later to gather feedback and reflections. The final stage is crucial for understanding the effectiveness of collaboration and its link to student receptiveness, providing insights for curricular improvements and teaching practices.

3.2 Research design

This study uses a mixed methods design, combining qualitative and quantitative data to explore interdisciplinary collaboration at Castelo Branco Polytechnic University. Quantitative questionnaires provide numerical data for statistical analysis, while qualitative questions offer descriptive insights into participants' experiences with collaboration and CLIL strategies. The qualitative data enhances the numerical findings, ensuring a comprehensive understanding of attitudes and perceptions. This approach provides a holistic view of interdisciplinary collaboration, examining trends, diverse perspectives, and student learning outcomes.

3.3 Participants

Thirty-six undergraduate students participated in the study. All students willingly participated by providing consent for inclusion in the case study. However, not all students completed every questionnaire, and in some cases, some questions were left unanswered during the study. Table 1 offers a comprehensive overview of the questionnaire participation and completion rates, emphasising the first-year fashion and textile students in the graduate course. This focused analysis facilitated a deeper understanding of the engagement levels of these specific students across various stages of the study, contributing to a nuanced interpretation of data collection dynamics within the specified courses.

Course	Total Enrolled Students	Students participating	Completed Questionnaires						
			pre	1	2	3	4	5	6
				Post Class Questionnaires					
Fashion and Textile Design (Undergraduate)	53	36	35	34	31	16	24	18	24

Table 1 *Participation and Completion of Questionnaires*

3.4 Questionnaires

Copies of the questionnaires, consent forms, and a comprehensive data management protocol were submitted to the University of Porto's Data Protection Unit. Appendix A: Overview of Questionnaires and Evaluation Criteria details the specific evaluation criteria addressed by each questionnaire. Previous research and surveys informed the development of student questionnaires, with insights from studies in HEIs shaping their structure and content. Data on student experiences in university and interdisciplinary education was used to refine the questionnaires, ensuring they effectively captured students' perspectives. (Aguilar & Rodríguez, 2012; Mestre-Segarra

& Ruiz-Garrido, 2022; Urgal, 2019; Walker, 1973; Zhou et al., 2019). Specific criteria were devised to address concerns raised by researchers regarding the validity of student questionnaires (Zhang & Aryadoust, 2022; Klemenčič & Chirikov, 2015). These criteria guided the choice of question formats and ensured that surveys effectively capture students' perceptions, attitudes, and experiences.

To ensure the accuracy and relevance of the data, it is crucial to re-validate interpretations and data usage in the new context, as emphasised by Zhang and Aryadoust (2022). Developing criteria for this re-validation process is essential, as supported by prior research such as Arnó Macià et al. (2020) and Dugan and Letterman (2008), which enhances the validity and reliability of the data. The study emphasises methodological and empirical validation in developing questionnaires to measure students' receptiveness, drawing on Social Cognitive Theory (Bandura, 1986) (SCT) and Expectancy-Value Theory (EVT) (Wigfield, 1994). These established frameworks are frequently used in research within HEIs to understand and enhance student learning and motivation (Alalwan et al., 2019; Gaspard et al., 2018; Guo et al., 2017; Meyer et al., 2019; Mishra, 2020; van Dinther et al., 2011). They provide insights into how students' beliefs and expectations impact their engagement and success. The questionnaire design criteria were based on SCT's focus on self-efficacy and outcome expectations and EVT's emphasis on task importance and utility.

4. DATA ANALYSIS

The analysis employs quantitative and qualitative methods. Detailed criteria and themes ensure a systematic examination of student feedback. Integrating EVT and SCT, the analysis explores motivational aspects, such as students' expectations and the value of interdisciplinary activities, self-efficacy, observational learning, and environmental factors like teacher and peer support. This combined approach provides a comprehensive understanding of the factors influencing students' engagement and learning outcomes in interdisciplinary education.

4.1 Pre-class questionnaire

This questionnaire explored students' attitudes, expectations, and experiences with interdisciplinary methodologies, drawing on SCT and EVT. For a detailed breakdown of how each question corresponds to SCT and EVT components, please refer to Appendix B: Overview of Pre-Class Questionnaire Aligned with SCT and EVT. In this appendix, Table B provides a comprehensive organisation of the questions by their theoretical relevance, clarifying their roles in intervention planning and execution. The quantitative analysis of the questionnaire focuses on structured data from closed-ended questions, offering statistical insights into students' attitudes and expectations based on both theories.

4.2 Post-class questionnaire

The questionnaire design criteria are detailed in Table 2, which categorises and analyses feedback on students' experiences and perceptions. The criteria were developed based on previous research on student feedback and interdisciplinary education (Mestre-Segarra & Ruiz-Garrido, 2022; Urgal, 2019; Zhang & Aryadoust, 2022; Zhou et al., 2020). This approach ensured that the questions were designed to effectively capture students' attitudes, experiences, and perceptions in a manner consistent with these studies' findings and recommendations.

Table 2

Framework for qualitative data analysis (post-class questionnaire): Categories and themes

Criteria for Coding	**Themes within Each Category**
1. Clarity of learning objectives	clear / unclear learning objectives
2. Integration of disciplines	Successful / limited integration
3. Active learning opportunities	frequent / infrequent active learning opportunities
4. Facilitation of interdisciplinary dialogue	encouraged / limited interdisciplinary discussions
5. Assessment methods	aligned / misaligned assessment methods

Criteria for Coding	Themes within Each Category
	no specific assessment mentioned
6. Faculty support and guidance	high / low satisfaction with faculty support
	no specific feedback
7. Resources and materials	adequate / inadequate resources and materials
	no specific feedback on resources and materials
8. Student feedback and reflection	positive aspects / challenges faced on the course
9. Overall satisfaction	high / low overall satisfaction

Additionally, SCT and EVT inform the design and analysis of the post-class questionnaire. The questionnaire comprises multiple qualitative questions, each addressing specific aspects. Appendix C with Table C provide a detailed alignment of each questionnaire item with the SCT and EVT.

5. RESULTS

The results reveal how interdisciplinary collaboration affects students' academic experiences and technical language skill development. Quantitative data measures engagement and satisfaction, while qualitative insights reveal benefits and challenges. Together, they offer a clear view of the effectiveness of interdisciplinary teaching and its effects on learning outcomes.

5.1 Pre-class questionnaire

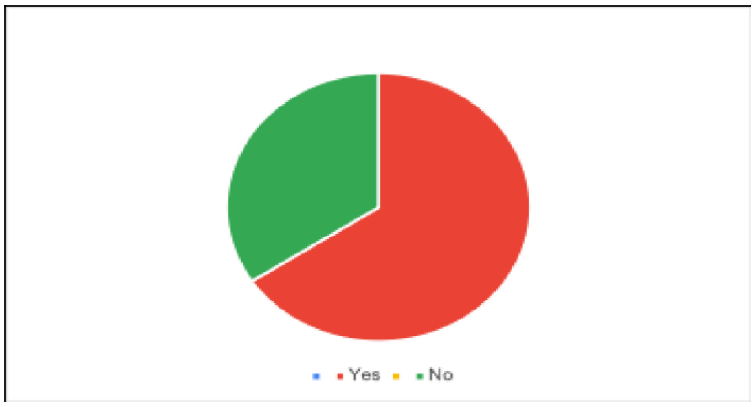
The pre-class questionnaire data indicates a positive receptiveness. Specifically, 15 students expressed a definite interest in collaboration by choosing "Yes," while 20 students indicated potential interest with a response of "Maybe." Notably, no responses indicated disinterest or an evident reluctance to participate ("No"). This initial data

suggests a favourable attitude, setting a promising foundation for interdisciplinary collaboration between ESP and content teachers.

Question 10 enquires about students' preferences regarding including English as a subject in their course. The data, as illustrated in Figure 1, shows that 23 out of 35 students strongly advocate for the addition of English to their course. The majority's receptiveness to this integration accentuates their positive attitude towards interdisciplinary collaboration, implying that aligning the curriculum with student preferences will enhance the success of the approach.

Figure 1

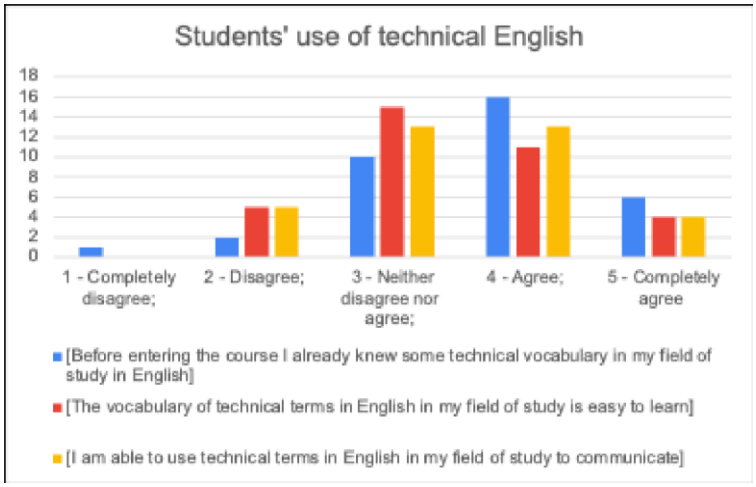
Student Preferences for English as a Curricular Subject: Pie Chart Analysis



Students assessed their familiarity with technical English vocabulary, focusing on prior knowledge, ease of learning, and use. This evaluation highlights their confidence and proficiency, crucial for determining readiness for interdisciplinary collaboration with an ESP teacher. Responses varied, with many reporting prior knowledge and confidence. These findings, illustrated in Figure 2, show varying comfort levels with technical vocabulary and inform the design of interdisciplinary collaborations.

Figure 2

Student proficiency and comfort with technical vocabulary in English: Pre-class insights



The analysis shows that 75% of students support collaborative teaching between English and other subjects, and 65.7% want English included in their curriculum, highlighting its value. While 42% have some knowledge of technical English vocabulary, only 35.7% find these terms easy to learn, and 57.1% are neutral or disagree. Confidence in using technical English varies, with 42.9% expressing confidence. Question 14 is critical for gauging receptiveness to interdisciplinary methods, as familiarity with technical terms may indicate prior exposure or understanding of interdisciplinary benefits. However, it is not the sole determinant of receptiveness.

These findings suggest the need for tailored language support and interactive teaching strategies. The significant interest in collaborative teaching and the desire for English in the curriculum highlight opportunities for integrating English into students' fields of study. Addressing diverse perceptions of vocabulary learning ease and promoting communication skills can enhance the effectiveness of interdisciplinary collaboration between ESP and content teachers.

5.2 Post-class questionnaire

The analysis is framed within the theoretical perspectives of SCT and EVT. Table 3 below summarises key quantitative findings from the questionnaire. These findings are categorised to reflect how they align with SCT and EVT, offering insights into the

effectiveness of the interdisciplinary teaching approach. As the questionnaires were distributed after each class, analysis refers to the subject content, namely symbolism, urbanisation, sustainability, MOOD, TONE and Tecidoteca.

Table 3

Quantitative Analysis Aligned with SCT and EVT

Question	**Findings**	**SCT Alignment**	**EVT Alignment**
Clarity of learning objectives (Q 5)	clarity ranging from 44% to 86%.	Clear objectives: enhance self-efficacy clear expectations.	value, relevance, motivation
Integration of disciplines (Q7)	83.8% well integrated	Supports self-regulation and learning strategies.	practical value, motivation
Active learning opportunities (Q8)	95.1% frequent active engagement.	Fosters self-efficacy through mastery experiences and social modelling.	valuable, engagement, persistence
Facilitation of interdisciplinary dialogue (Q9)	99.3% encouraged to participate in interdisciplinary discussions	Encouragement supports social persuasion, boosting self-efficacy.	importance, utility, motivation
Assessment methods (Q10 & 11)	82.4% assessments were aligned with learning objectives	Aligned assessments: evaluate progress, enhancing self-efficacy.	value, motivation
Resources and materials (Q13)	87.32% resources were adequate	Adequate resources: effective learning strategies, self-regulation.	institutional support, value, engagement
Feedback and reflection (Q14 & 15)	Significant benefits include subject matter (97%) and practical application (36%);	Develop self-regulation skills, adjust learning strategies.	student expectations, motivation

Question	Findings	SCT Alignment	EVT Alignment
	challenges include language proficiency gaps.		
Overall satisfaction (Q16 & 17)	92.96% rated experience as 4 or 5	High satisfaction: positive mastery experiences, social persuasion, boosting self-efficacy.	perceived value, worthwhile

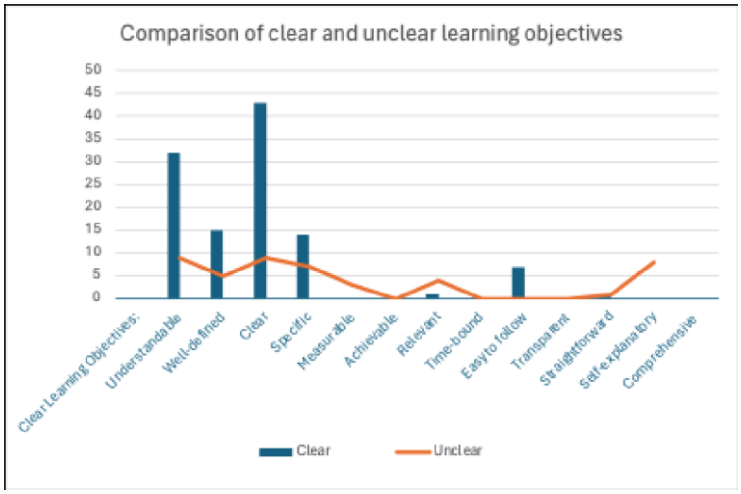
These findings suggest that clear, integrated, and engaging teaching practices positively influence students' self-efficacy and motivation. Addressing identified challenges, such as language proficiency gaps, is essential to enhancing the effectiveness of interdisciplinary teaching. These insights underscore the importance of tailored interventions and ongoing refinement to meet students' needs and expectations, fostering a supportive and effective learning environment.

5.2.2 Qualitative Analysis

As relates do Question 6, in the Symbolism class, 29 objectives were clear, and 28 were unclear, with feedback noting that clear objectives were well-defined and easy to follow, while unclear ones were vague and complex. The Urbanisation class received positive feedback but had some complex objectives. The Sustainability class had no unclear objectives but concerns about specificity. The MOOD and TONE classes received positive feedback but had fewer responses, suggesting potential engagement or time issues. The Tecidoteca class also had positive feedback but concerns about relevance.

Figure 3

Comparison of clear and unclear learning objectives

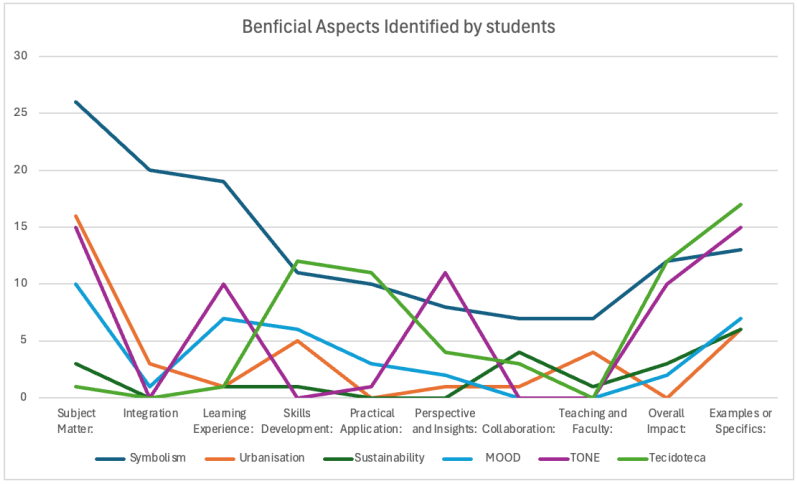


The feedback aligns with SCT's emphasis on self-efficacy and environmental influences. Clear learning objectives enhance students' confidence and understanding, which is crucial for effective learning and engagement. The varied feedback across classes illustrates how different environments and instructional practices impact students' self-efficacy and perceived effectiveness. With regards to EVT, the analysis reflects students' expectations and the perceived value of clear learning objectives. Positive perceptions of clear objectives align with the theory's focus on the importance of well-defined goals in motivating and engaging students. Addressing concerns about clarity and relevance aligns with enhancing the perceived value of the learning experience.

In relation to Question 14, the findings, illustrated in Figure 4, reveal distinct class features. The analysis reveals distinct patterns across classes. The Symbolism class is noted for its high recognition of concept integration, reflecting deep student engagement.

Figure 4

Beneficial aspects identified by students



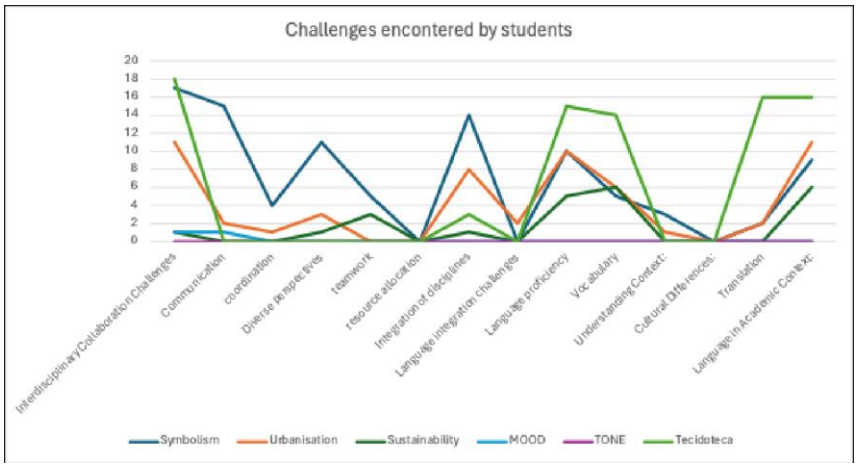
Urbanisation has strong positive perceptions and content appreciation, indicating high student interest. Sustainability is distinguished by its emphasis on collaboration and shared learning experiences. MOOD receives positive feedback for creating a satisfying and engaging learning environment. TONE is recognised for exploring diverse perspectives and enriching students' viewpoints, while Tecidoteca is celebrated for its focus on practical skill development and hands-on learning. These findings align with SCT, as positive feedback on clear benefits enhances students' self-efficacy and engagement, which are crucial for effective learning. Additionally, the EVT is reflected in the high appreciation of content and practical skills, underscoring the role of perceived benefits in motivating students.

In what purports to Question 15, the analysis of perceived challenges reveals that students in the Symbolism class faced communication and language issues, while those in Urbanisation needed help with language proficiency and academic context. Sustainability noted teamwork and language challenges, whereas MOOD and TONE reported minimal issues. Tecidoteca faced significant problems with language proficiency and translation. The sparse feedback from TONE and MOOD may indicate

fewer perceived challenges or reluctance to discuss them. These findings, consistent with SCT, highlight how challenges affect students' self-efficacy and engagement. They also align with EVT, as overcoming these challenges impacts students' motivation and expectations for interdisciplinary collaboration.

Figure 5

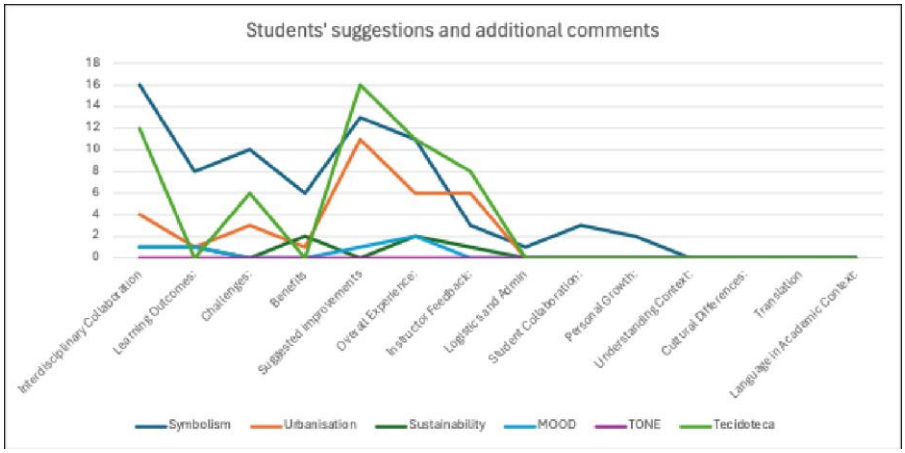
Challenges encountered by students.



In relation to Question 17, the analysis identifies several key themes across classes. In Symbolism, students highlighted "Interdisciplinary Collaboration" and suggested improvements. Urbanisation feedback focused on the need for better "Instructor Feedback" and areas for enhancement. The Sustainability class received positive comments on "Interdisciplinary Collaboration" and "Benefits," indicating a generally favourable experience. MOOD had positive sentiments about "Interdisciplinary Collaboration" and "Learning Outcomes," along with specific improvement suggestions. Tecidoteca feedback pointed out collaboration challenges and offered suggestions for improvement. These findings, illustrated in Figure 6, align with SCT and EVT, reflecting how students' experiences and feedback affect their self-efficacy, engagement, motivation, and expectations and guide future improvements in interdisciplinary teaching practices.

Figure 6

Students' suggestions and additional comments.



The challenges identified in interdisciplinary collaboration offer valuable insights for strategic recommendations. Consistent efforts to address language-related barriers, including proficiency, vocabulary, and academic context, are essential for effective communication and comprehension. Tailoring interventions to the unique needs of each class is crucial, acknowledging variations in challenges across interdisciplinary settings. Emphasising clear communication strategies, such as guidelines and collaborative tools, can mitigate communication difficulties.

6. CONCLUSIONS

The combined qualitative and quantitative findings underscore the importance of clarity, integration, active engagement, and collaborative dialogue in interdisciplinary teaching. Addressing language-related challenges and ensuring adequate resources and logistical support are critical for enhancing students' learning experiences. By aligning these insights with SCT and EVT, it becomes evident that fostering self-efficacy, providing clear objectives, and ensuring the perceived value of tasks are essential components of effective interdisciplinary education. The study's comprehensive approach supports the development of effective teaching strategies, as pointed out by

previous studies (Ellison et al., 2022; Morgado et al., 2015). It provides a foundation for ongoing refinement and adaptation, ensuring that interdisciplinary teaching continues to meet students' evolving needs and expectations, a factor that is seen as fundamental for students in other studies (Aguilar & Rodríguez, 2012; Arnó-Macià et al., 2020; Maiz-Arevalo & Domínguez Romero, 2013).

Integrating collaborative teaching plans and faculty support is crucial for the success of interdisciplinary initiatives. Continuous feedback from students is essential for refining these practices and enhancing their effectiveness, which other studies point out as student engagement and experiences (De las Heras et al., 2014; Marsh, 1984; van Dinther et al., 2011; Walker, 1973). This study suggests that adopting diverse pedagogical approaches to accommodate various learning styles can further boost engagement and outcomes.

Student receptiveness to interdisciplinary collaboration is evident from high levels of engagement and positive feedback, particularly regarding the integration of content and language and the encouragement of interdisciplinary discussions. This favourable disposition highlights the effectiveness of collaborative teaching approaches.

However, communication difficulties and language proficiency gaps persist and must be addressed. Continuous student feedback, diverse pedagogical approaches, and institutional support are essential for enhancing teaching practices and ensuring successful interdisciplinary initiatives. This study provides a solid foundation for refining interdisciplinary education and sets the stage for future research into the factors influencing student engagement and effectiveness.

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Appendix A

Overview of Questionnaires and Evaluation Criteria

Table A:
Detailed Overview of Questionnaires and Evaluation Criteria

Questionnaire	Criteria
Pre-class	awareness of interdisciplinary collaboration, expectations and motivations, perceived benefits, prior experiences and exposure, language skills and proficiency, use of English in context, expectations of collaboration, concerns or reservations
Post-class	perceived impact on language skills, integration of interdisciplinary content, engagement and motivation, interdisciplinary thinking and skills, collaboration and teamwork, application of knowledge personal growth and development, suggestions for improvement, long-term impact

Appendix B

Overview of Pre-Class Questionnaire Aligned with SCT and Expectancy-Value Theory

Table B:
Alignment of Pre-Class Questionnaire Questions with SCT and Expectancy-Value Theory

Question Number	Purpose	SCT	Expectancy-Value Theory
6	Importance of learning a foreign language	Value	Value
7	Previous English experience	Self-Efficacy	Expectancy
8	English proficiency level	Self-Efficacy	Expectancy
9	Curricular English subject	Self-Efficacy	Expectancy
10	Interest in having an English subject	Value	Value
11	Technical vocabulary in English	Self-Efficacy	Expectancy
12	Familiarity with interdisciplinary teaching	-	Value
13	Participation in interdisciplinary teaching	-	Value
14	Interest in collaborative teaching format	Value	Value
15	Self-assessed level of English	Self-Efficacy	Expectancy
16	Frequency of English use in various contexts	Self-Efficacy and Environmental Influences	Value

Note: Self-Efficacy: Refers to students' beliefs about their ability to succeed in English-related tasks and interdisciplinary collaboration. Value: Refers to the perceived importance and utility of learning English and participating in interdisciplinary methods.

Appendix C

Overview of Post-Class Questionnaire Aligned with SCT and Expectancy-Value Theory

Table C:
Alignment of Pre-Class Questionnaire Questions with SCT and Expectancy-Value Theory

Question Number	Purpose	SCT	Expectancy-Value Theory	Details
5	Assess clarity of learning objectives		Expectation of success	Influence perceived ability to achieve them, affecting motivation and engagement.
6	Understand reasons for clarity or lack of clarity in learning objectives		Value	Importance of understanding objectives for perceived relevance and engagement.
7	Evaluate integration of content and language	Observational learning		Integration supports modeling and observational learning, enhancing comprehension and application of interdisciplinary content.
8	Measure frequency of active engagement with course content	Engagement and self-efficacy		Builds confidence and learning through practice, promoting self-efficacy.
9	Determine if students felt encouraged to participate in interdisciplinary discussions	Self-efficacy and peer influence		Encouragement boosts confidence and emphasizes the value of peer interaction, enhancing self-efficacy.
10	Assess alignment of assessment methods with learning objectives		Expectation of success	Affects perceived fairness and ability to meet objectives, influencing motivation and engagement.
12	Gauge satisfaction with support and guidance provided by instructors	Environmental factors		Enhances the learning environment and perceived capability, contributing to student engagement and confidence.
13	Evaluate adequacy of resources and materials used in the lesson		Value	Adequate resources increase perceived value and relevance of the course, supporting student engagement and motivation.

Question Number	Purpose	SCT	Expectancy-Value Theory	Details
14	Identify the most beneficial aspects of the interdisciplinary course for student learning	Value and self-efficacy	Value	Highlight valued components and confidence-building activities, informing future instructional strategies.
15	Understand specific challenges related to interdisciplinary collaboration or language integration	Environmental factors		Indicate areas where support was lacking, providing insights into improvements for future interdisciplinary courses.
16	Measure overall satisfaction with the interdisciplinary lesson		Value	Reflects perceived value and relevance of the experience, providing a comprehensive measure of student engagement and motivation.
17	Collect additional comments and suggestions for improvement	Comprehensive insights	Comprehensive insights	Provide detail on value and self-efficacy aspects, offering a holistic view of student experiences and potential areas for enhancement in interdisciplinary courses.

Note: SCT focuses on self-efficacy, observational learning, and environmental factors, while Expectancy-Value Theory examines students' expectations of success and their value to interdisciplinary activities.

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The integration of social emotional learning into the CLIL classroom as a sustainable educational practice for society

Leonel Fuentes Moncada | University of Extremadura

Abstract

The following workshop description is part of an ongoing study in a thesis dissertation from the University of Extremadura in Spain, on "Social Emotional Learning and the curriculum". The primary aim of this study is to equip teachers with the necessary knowledge, practical strategies, and resources to integrate Social and Emotional Learning (SEL) principles seamlessly into Content and Language Integrated Learning (CLIL) instruction. This integration will nurture emotionally intelligent, socially adept students, foster enriched learning experiences and prepare students for the challenges of the 21st century. During the workshop, an online survey assessed participants' initial comprehension of the concepts, aligning them with existing literature to identify knowledge gaps. Next, teacher training strategies were explored, encouraging participants to share experiences and discuss methods for improving CLIL instruction using SEL principles. Through role-playing and lesson demonstrations, attendees could actively understand and learn to apply effective SEL strategies within the CLIL context and explore diverse resources for CLIL instruction, including online materials from SEL-focused organizations and adaptable resources for diverse learners. Challenges such as teacher resistance, resource limitations, and student motivation were addressed through guided discussions. Evaluation and assessment methods, including journaling, peer observation, and professional learning communities, were presented to gauge SEL's integration into CLIL

instruction. Through active engagement, small group discussions, and reflection exercises, participants collaborated throughout the workshop and by its conclusion, participants possessed a comprehensive understanding of integrating SEL into CLIL instruction, along with practical strategies and resources to enhance their teaching practices.

Keywords: *Social Emotional Learning (SEL), curriculum development, teacher education, secondary education, higher education.*

1 Introduction

This paper is based on a workshop given at the 2023 Working CLIL colloquium. It includes the views and opinions of the educators who attended the workshop, which are contrasted with the findings of experts in the fields of sustainability, such as Mireille Hubers (2020), whose research on reconceptualizing what it means to make educational changes that last, and why or how changes were or were not sustained over time delves into the way sustainability in education is needed nowadays. Also including the work of Do Coyle, Philip Hood and David Marsh (2010), who have defined CLIL and explained its integration into the classroom. Lastly, we discuss some of the findings made by Blanca Ibarra (2022), who explains how SEL can develop a sense of identity and belonging, as well as how crucial is the teacher's role in this matter. As education is an ever-evolving landscape, the quest for effective teaching methodologies has been relentless. Some solid references can be found in the school guide developed by the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2020), or also in the work of experts such as Sam Newbould (2018) who introduced us to the "class contract", which we will discuss further in this article. Whilst teachers strive to prepare their students for the challenges of the 21st century, they are increasingly recognizing the significance of holistic learning, which goes beyond the mere transmission of academic content. Experts are interested in how school programs are increasingly weaving into their curriculum techniques and strategies that seek positive development. Saras Chung and Amanda McBride (2015) discuss in their findings how positive this learning model proves to be. This recognition has given rise to a powerful synergy between two essential educational paradigms: Social and Emotional Learning (SEL) and Content and Language Integrated Learning (CLIL).

1.1 The Foundation: Understanding SEL and CLIL

The integration of SEL into CLIL represents a promising approach to education that is gaining traction around the world. SEL involves a comprehensive set of competencies designed to enhance emotional intelligence, self-awareness, interpersonal skills, and responsible decision-making. According to Elias (1997, as cited in Chung & McBride, 2015), SEL is "the process through which individuals learn to recognize and manage emotions, care about others, make good decisions, behave ethically and responsibly, develop positive relationships, and avoid negative behaviors" (p.193). The Collaborative for Academic, Social and Emotional Learning (CASEL) further divides SEL into five dimensions: Self-awareness, self-management, social awareness, responsible decision-making, and relationship skills.

On the other hand, Content and Language Integrated Learning (CLIL) is defined as:

> a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language. Each is interwoven, even if the emphasis is greater on one or the other at a given time. CLIL is not a new form of language education. It is not a new form of subject education. It is an innovative fusion of both. (Coyle et al., 2020, p.1)

These two paradigms, when combined, create a dynamic and enriching learning environment that not only equips students with essential life skills but also enhances their academic success and positive social interactions.

The integration of SEL into CLIL is not merely an educational trend; it is a transformative approach that has the potential to reshape the way we educate our students. Sustainability is not only part of a special project from a school's board, it needs consistent and persistent change to improve the learning ecosystem. Coburn (as cited in Hubers, 2020), explains that "Sustainability refers to changes that persist over time. Spread means that the reform is transmitted to greater numbers of classrooms and schools" (p.5). Therefore, change cannot be seen as

only part of a special project, it needs to be a part of the everyday formation process. The author continues to explain her point through the work of Eisner (as cited in Hubers, 2020,) who states that, "Deep, meaningful and substantial results are most likely to be achieved when a change effort affects all of these dimensions. That way, one thinks comprehensively about educational change and integrates the change effort within the ecology of schooling" (p.8). Therefore, if looking to make a meaningful impact in the whole school ecosystem, teachers must make the integration of SEL into CLIL as part of the institutional practices and curricular demands. Thus, this workshop intends, by equipping educators with the tools and knowledge needed to implement this approach effectively, to pave the way for enriched learning experiences, improved academic success, and the nurturing of emotionally intelligent, socially adept individuals prepared to thrive in the complex world of the 21st century.

1.2 Workshop structure

The workshop was designed to empower educators with the knowledge and tools they needed to effectively integrate SEL principles into their CLIL instruction. It was thoughtfully tailored to cater to teachers of all subjects in high school and higher education. Its overarching goal was to equip participants with a deep understanding of the benefits of SEL in the CLIL context, along with practical strategies and resources to enhance their teaching practices. Thus, the workshop was divided into the following steps:

Step 1: Building understanding.

Step 2: Defining concepts.

Step 3: Teacher training strategies

Step 4: Role play and lesson demonstrations

Step 5: Resource exploration

Step 6: Addressing implementation challenges

Step 7: Evaluation and assessment methods

Step 8: Active engagement and collaboration

2. THE WORKSHOP: MATERIALS AND METHODS

Step 1: Building understanding

The first step of the workshop was dedicated to building a solid understanding of SEL and CLIL. Educators were introduced to these concepts through guided presentations that draw upon existing research. This theoretical foundation is essential as it provides educators with the knowledge needed to make informed decisions about their teaching practices. Jones (as cited in Ibarra, 2022) on Understanding SEL to create a sense of belonging, affirms that "Teachers play an essential role in shaping the hearts and minds of students, and they must be intuitively aware of their strengths and weaknesses as an educator to nourish relationships with students effectively" (p.6).

This phase of the workshop consisted on a comprehensive exploration of SEL and CLIL by drawing from a multitude of sources, including the National Spanish Curriculum (Real Decreto 243/2022) for high school and core curriculums from various educational systems. This approach allowed us to delve into the theoretical underpinnings of both SEL and CLIL, providing participants with a holistic understanding rooted in diverse educational frameworks. The examination of the National Spanish Curriculum for high school proved particularly insightful, as it shed light on how SEL principles could be seamlessly integrated into CLIL instruction. Educators had the opportunity to analyse the curriculum's approach to SEL, identifying key components and strategies that could be harnessed within the CLIL context. Furthermore, exploration extended beyond national boundaries. We delved into core curriculums from various regions and countries, facilitating a comparative analysis.

Step 2: Defining concepts

The second step of the workshop went beyond theoretical exploration by delving into real-world examples of successful SEL programs implemented in schools worldwide. QuaverSEL in the USA, Move This World in Colombia, INTEMO (Emotional Intelligence in teenagers), or the EDI Program in Spain are some of the examples we discussed. These programs served as case studies, illustrating the practical application of SEL principles and strategies within diverse educational contexts. Researcher Jennifer Rowley (2002) states "case studies are useful in providing answers to 'How?' and 'Why?' questions, and in this role can be used for exploratory, descriptive or explanatory research" (p.16). Educators had the opportunity to analyze the outcomes and results of these programs, providing them with concrete evidence of the transformative power of SEL when integrated effectively.

Central to this phase of the workshop was the utilization of resources like the CASEL (Collaborative for Academic, Social, and Emotional Learning) handbook for SEL. The CASEL website served as a wellspring of invaluable materials dedicated to SEL instruction (CASEL, 2020). Participants were guided through this online repository, exploring a wealth of resources ranging from lesson plans and activity guides to research papers and toolkits. This handbook, renowned for its authoritative insights into SEL, became a compass, guiding educators through the intricate landscape of SEL principles.

Participants self-assessed their knowledge through the online survey and aligned their understanding with existing literature. The CASEL website (2024) proved to be of most help, since through its program guide users can compare effective SEL programs, their characteristics, results and more details, allowing to identify any gaps or misconceptions in the learning process. Particular attention was devoted to dissecting the techniques, strategies, and resources employed by these successful SEL programs. Educators scrutinized the intricacies of program design, classroom implementation, and support systems.

The knowledge gained in this phase equipped participants with the critical ability to assess and align their own understanding of SEL with the best practices and successes documented in the field.

This holistic approach positioned educators to navigate the upcoming moments with a deepened awareness of SEL principles and strategies, poised to integrate them seamlessly into their CLIL classrooms.

Step 3: Teacher training strategies

Having fortified their foundational knowledge of Social and Emotional Learning (SEL) and Content and Language Integrated Learning (CLIL), participants advanced to a pivotal phase of the workshop, exploring innovative strategies for teacher training through a wealth of real-life examples drawn from successful programs that have effectively woven SEL into the curriculum. Participants used real life examples presented in the CASEL handbook (2020), to analyse the integration of SEL and CLIL into the classroom. These real-life examples served as powerful case studies, illustrating how SEL principles could be translated into tangible teaching practices. Educators had the opportunity to examine and dissect these examples, extracting valuable strategies and techniques that have proven to be transformative in the classroom.

This was facilitated through collaborative learning. Laal & Ghodsi (2012) define collaborative learning as "an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product" (p.486). Workshop participants were encouraged to share their own teaching experiences and engage in discussions about how to enhance CLIL instruction using SEL principles.

Step 4: Role play and lesson demonstrations

In step four, to bridge theory and practice, the workshop employed role-playing and lesson demonstrations. As Jarvis et al (2002) state, "these strategies emphasize the social nature of learning, and see cooperative behaviour as

stimulating students both socially and intellectually. Role-playing as a teaching strategy offers several advantages for both teacher and student" (p.2).

Educators were introduced to the concept of a classroom contract, a collective agreement crafted by students and teachers, which outlines behavioural expectations, respect, and responsibility. Newbould (2018) presents this tool as "an activity for teachers to increase learner engagement and students' accountability for their own learning from the very first class" (p.38). Through the contract, students not only learn to be aware of their own emotions and actions but also acquire the skills to manage them in a responsible and empathetic manner. This technique promotes social awareness by encouraging students to consider the feelings and perspectives of their peers, ultimately leading to the development of positive relationship skills and the cultivation of a responsible decision-making mindset.

The presentation of a successful teaching technique took place in the fourth part of the workshop, the "contract" as presented by Newbould (2018). The contract technique emerged as a potent tool for creating a responsible and inclusive classroom environment.

The role-playing activities were not merely performative exercises; they were opportunities for participants to engage deeply with the SEL principles they had learned. After the role-playing and lesson demonstrations, they engaged in reflective discussions.

Step 5: Resource exploration

In step five the resource exploration phase took a collaborative turn by actively involving the attendees. They shared their own insights and recommendations regarding resources that had proven successful in their own classrooms, thereby enriching the pool of available materials. This collaborative sharing allowed participants to tap into the collective wisdom of their peers,

discovering new and innovative resources that had been tried and tested in real-world CLIL settings.

Step 6: Addressing implementation challenges

The sixth step of the workshop was dedicated to addressing the hurdles challenges in integrating SEL into CLIL prove to be. Providing educators with a platform for open dialogue, reflection, and collaborative problem-solving, an atmosphere of collaborative exploration surfaced. The discussion provided a platform for participants to collectively brainstorm solutions and share strategies for addressing implementation challenges effectively.

As the discussion progressed, participants agreed that in the pursuit of seamlessly integrating Social and Emotional Learning (SEL) into Content and Language Integrated Learning (CLIL), it's essential to have effective evaluation and assessment methods in place.

Step 7: Evaluation and assessment methods

In the seventh step of the workshop we delved into these methods, equipping teachers with tools and approaches to tangibly measure the impact of SEL on their CLIL instruction.

During this part of the workshop, we emphasized the significance of not only fostering students' SEL skills but also evaluating their growth. Participants explored various assessment methods aimed at gauging students' SEL development. This phase of the workshop presented journaling as a valuable tool for the integration of SEL and CLIL into the classroom. As stated by Hubbs & Brand (2005), "reflective journaling can provide instructors with glimpses of the inner workings of the students' mind" (p.62). The authors continue and explain how "journal entries allow the instructor to view, through the student's words the quality of comprehension and mastery of the material, as well as effective responses to the content" (p.65). Journaling is a reflective practice that encourages students to document their emotional journeys and personal growth. Through journaling,

educators can gain valuable insights into their students' emotional and social progress, providing valuable data on their SEL integration.

Step 8: Active engagement and collaboration

In the last step of the workshop, we highlighted the significance of Professional Learning Communities (PLCs) as a powerful assessment approach. Mitchell and Sackney (2000) and Toole & Louis (2002, as cited in Stoll et al., 2006) claim:

> There is no universal definition of professional learning communities. PLCs may have shades of interpretation in different contexts, but there appears to be a broad international consensus that suggests a group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way (p.223).

PLCs offer educators a platform for ongoing dialogue, sharing best practices, and collectively assessing the effectiveness of SEL integration. By collaborating within these communities, educators can refine their evaluation methods based on the experiences and insights of their peers, ultimately enhancing the quality of SEL-CLIL instruction.

From the workshop's inception to its conclusion, a central ethos prevailed active engagement and collaboration. In their study on the implementation of active engagement and through cooperative learning activities in lectures, Cavanagh (2011) found that:

> Students greatly valued opportunities for cooperative learning and active engagement in lectures, both as a means of improving their understanding of the unit content and in maintaining their interest during the sessions. In particular, students valued the variety of lectorial activities, especially the opportunities for small group and whole-class discussions, the clear focus on one or two central ideas, and the authenticity of the lectorial tasks, which the

students saw as closely related to learning and teaching in actual classrooms (p.29).

Active engagement was woven into the fabric of each part of the workshop, with participants embarking on hands-on activities that brought theoretical concepts to life. Role-playing, lesson demonstrations, and resource exploration were not passive exercises but vibrant engagements that allowed educators to witness SEL-CLIL integration in action. These activities served as powerful catalysts for profound learning experiences, enabling educators to not just understand but deeply internalize the principles they were exploring.

Collaboration was another cornerstone of the workshop's success. Small group discussions offered a platform for educators to exchange ideas, share experiences, and collectively grapple with challenges and solutions. This collaborative approach transcended the confines of the workshop room, fostering a sense of community among educators. They forged connections and support networks that extended far beyond the workshop's duration.

3 Insights

Holding the workshop was a ground-breaking experience, as it allowed meeting first-hand the reality of our study, real life voices from the main agents involved: the teachers. As all steps were designed with specific purposes, special attention was given to their effectiveness. The first step in the workshop was necessary and fundamental. Examining the National Spanish curriculum not only enriched the participants' theoretical understanding but also paved the way for practical applications in their own teaching practices. This phase allowed educators to discern the commonalities and variations in how SEL and CLIL were portrayed in different curricular frameworks. By examining these diverse perspectives, participants gained a global perspective on the integration of SEL into CLIL classrooms, further enriching their theoretical toolkit.

Ultimately, this served as the cornerstone upon which the entire workshop was built. The theoretical insights garnered from the National Spanish Curriculum and other core curriculums provided the attendees with a robust foundation for making informed decisions about their teaching practices. Armed with this knowledge, they were better equipped to navigate the subsequent phases, which delved into practical strategies, resource exploration, and addressing implementation challenges.

Later on, as the participants analysed the CASEL handbook, they encountered a wealth of knowledge regarding the core dimensions of SEL, which include self-awareness, self-management, social awareness, responsible decision-making, and relationship skills. Delving into these dimensions allowed participants to explore the very essence of SEL, understanding how it encompasses the development of crucial life skills that extend beyond academic knowledge. After analysing real-world examples, participants were better equipped to envision how they could integrate SEL principles into their own teaching practices.

Equally significant was the examination of evaluation techniques employed by these programs. Participants learned how to measure the impact of SEL, fostering a deeper appreciation for the importance of assessment and continuous improvement in SEL integration. In essence, this phase of the workshop served a dual purpose. It allowed educators to self-assess their knowledge of CLIL and SEL, identifying any gaps or misconceptions that might hinder effective integration and it empowered participants with a profound understanding of SEL through the lens of the CASEL handbook and real-world success stories.

The third phase of the workshop was instrumental in arming participants with practical tools and insights to effectively infuse SEL principles into their CLIL instruction. By examining successful teaching techniques and practices, teachers discovered innovative ways to nurture emotional intelligence, self-awareness, and interpersonal skills within the context of CLIL. This adaptability was empowered by

the insights garnered from the successful programs discussed during the session, which showcased the versatility of SEL principles across different educational contexts. They finished this part of the workshop not only with a clearer understanding of how to infuse SEL into their CLIL instruction but also with the confidence and inspiration to embark on this transformative journey.

In the fourth step, the workshop took a pivotal turn as participants were invited to immerse themselves in practical applications through role-playing and lesson demonstrations. This reflection was key to the learning process, enabling attendees to articulate their observations, insights, and takeaways. The reflective discussions transformed the experience into a truly meaningful and introspective journey, reinforcing the practical applicability of SEL within the CLIL context. The contract technique emerged as a valuable tool, showcasing how SEL can be seamlessly woven into classroom dynamics to cultivate responsible, emotionally intelligent, and socially aware students.

In the resource exploration phase, participants discovered that while creating custom resources offers the advantage of alignment with unique curriculum goals and student demographics, it also poses challenges related to time, expertise, and availability of materials. This phase encouraged educators to weigh the pros and cons, fostering a sense of agency and creativity in their approach to SEL-CLIL integration. This sharing not only enriched individual toolkits but also created a sense of community and collaboration among educators. It fostered a supportive network where colleagues could continue to exchange resources and insights beyond the workshop, ensuring ongoing growth and development in the realm of SEL-infused CLIL instruction. This emphasis on resources underscored the practicality and sustainability of SEL integration and laid the foundation for continued growth in their educational journey.

As the workshop progressed into addressing implementation challenges, another hurdle surfaced in the form of a dearth of information and resources on how to effectively integrate SEL into the CLIL classroom. Educators noted that

there was a scarcity of publications and readily available guidance in this specific area, which can hinder teachers' confidence and competence in incorporating SEL principles. However, as the workshop progressed, the recognition of SEL's potential to benefit society at large and create richer opportunities for all students served as a motivating factor.

The evaluation and assessment methods part of the workshop showed that gathering feedback from peers enables educators to collaborate, gain fresh perspectives, and enhance their collective understanding of the impact of SEL integration. These findings reinforced the notion that SEL is not merely an educational trend but a substantiated and evidence-based approach with far-reaching benefits. Developing rubrics and scales provided educators with structured guidance for assessing SEL competencies, ensuring consistency and objectivity in the evaluation process. By embracing these evaluation and assessment methods, teachers were empowered to not only impart SEL skills to their students but also to measure and refine the impact of SEL-CLIL integration. This commitment to assessment contributed to a more nuanced understanding of the transformative potential of SEL within the CLIL context, fostering ongoing growth and improvement in both teachers and their students.

Lastly, as the central ethos of the workshop was revealed, the participants learned that reflection exercises served as vital moments of introspection. After each activity or session, educators took time to reflect on their experiences, insights, and takeaways. This reflective process not only solidified their learning but also encouraged self-awareness and metacognition, vital skills that SEL seeks to nurture.

4. Personal reflections

In this comprehensive workshop, participants embarked on a transformative journey to seamlessly integrate Social and Emotional Learning (SEL) into Content and Language Integrated Learning (CLIL). The eight distinct steps of the workshop provided educators with a robust foundation, practical strategies, and a wealth of

resources, ultimately equipping them to reshape their teaching practices and enrich their students' learning experiences.

Teacher training strategies empowered educators to implement SEL seamlessly into CLIL instruction, fostering emotional intelligence and interpersonal skills. Collaborative learning and the exchange of real-life examples enriched their toolkits.

The exchange of ideas, insights, and real-world anecdotes fostered an environment of collective learning, where each participant tapped into the expertise of their peers. As Yeager (2017) states, “effective universal SEL can transform adolescents’ lives for the better” (p.73). Thus, each program must be tailored for each student’s specific needs. Moreover, the moment underscored the importance of practicality and adaptability. Educators learned how to tailor SEL integration strategies to suit the unique needs of their students and classroom environments. Yeager (2017) continues stating that, “rather than encouraging adolescents to suppress their desire to feel autonomous or to garner the respect of their peers, SEL programs can give them a mindset that harnesses their developmental motivations” (p.84).

Role-playing and lesson demonstrations offered a dynamic bridge between theory and practice, highlighting the "contract" technique's power to nurture SEL competencies. Reflection exercises deepened the learning experience, making it meaningful and introspective. Newbould (2018) found when applying the tool in class, that “The contract is not a tool for punishment but rather a reminder of ideal classroom behaviour and practices that students and the teacher agree to” (p.39). Therefore, it sets a dynamic environment and providing positive outcomes. Also, Newbould (2018) says when including this SEL practice in the classroom, “students have a sense of ownership, and they are more likely to respect the rules, as they had a part in creating them” (p.39). These activities enabled educators to review effective SEL strategies within the context of CLIL. By actively participating in these exercises, educators gained valuable insights into how these strategies can

be applied in real classroom settings This dynamic phase of the workshop aimed to bridge the gap between theory and practice, offering educators a hands-on experience to review and internalize effective SEL strategies within the context of CLIL. It served as a powerful mean to connect everyone in the classroom, fostering an atmosphere of mutual respect and cooperation. What distinguishes the contract technique is its potential to deeply impact the development of the 5 areas identified by CASEL as constitutional in SEL.

In the contract, the participants witnessed first-hand the transformative potential of SEL integration within the CLIL framework. By stepping into the shoes of both teachers and students, educators gained valuable insights into how SEL strategies can be applied in real classroom settings to create a nurturing, respectful, and emotionally intelligent learning environment.

Resource exploration empowered educators with a diverse array of SEL materials, gathered from sources like CASEL and fellow educators' recommendations. Kurnia (2016, as cited in Pebriana et al, 2021), explains that "the existence of varied learning sources and making students not bored quickly and obtaining new things cause students to be more interested and play an active role" (p.60). These resources were meticulously selected to align with the principles and goals of SEL integration within the CLIL context. This phase not only empowered educators with readily available resources but also encouraged them to consider the possibility of creating their own, tailored to their unique classroom needs.

The workshop also ventured into the realm of resource creation. Educators engaged in thoughtful discussions about the benefits and challenges of crafting their own materials tailored to the specific needs of their classrooms, emphasizing on the need for adaptability and innovation.

The culmination of this resource exploration phase was a collective sharing session. Educators not only identified and gathered resources but also actively shared their discoveries with fellow participants. In essence, resource exploration did not serve solely to the collection of materials; it was a dynamic process that

empowered educators with the knowledge of where to find valuable resources and how to adapt them to their classrooms. By drawing from trusted sources, incorporating peer recommendations, and considering the possibility of resource creation, educators left the workshop armed with a versatile arsenal of materials to enrich their SEL-CLIL teaching practices.

Addressing implementation challenges encouraged educators to candidly reflect on obstacles and advantages. Challenges included a lack of consensus among authorities and limited resources, while advantages encompassed the transformative impact of SEL on students and society. Evidence-supported SEL integration offered them a promising outlook.

One significant challenge identified during these discussions was the lack of unanimous agreement among educational authorities responsible for implementing program changes. Kendziora & Yoder (2016) found that:

> educators indicate that they will be able to implement programming most effectively when they have quality professional learning experiences and administrative support from their schools and districts. The CDI demonstrates that it is possible for large urban school districts to adopt and maintain SEL as an essential element of education, even amid budgetary stress and leadership turnover (p.16).

Participants recognized that for SEL integration to be effective, it often required alignment and cooperation at multiple levels of the educational hierarchy. This challenge underscored the complexity of introducing systemic changes in educational programs.

However, amid these challenges, educators also explored the numerous advantages of SEL integration. They emphasized the transformative impact that SEL can have on students' personalities and emotional intelligence.

Moreover, educators drew upon research and studies that consistently demonstrated the positive outcomes of integrating SEL into learning environments.

Evaluation and assessment methods equipped educators to measure SEL's impact using journaling, peer observation, and custom rubrics. Professional learning communities fostered ongoing growth and assessment improvement. Peer observation and feedback emerged as another valuable assessment approach. Cosh (1999) talks about peer observation and considers it a reflective practice, stating:

> there is a great deal to be learnt by reassessing our teaching in the light of other teaching styles. It stimulates awareness, reflection, and a questioning approach, and it encourages experiment; it may also make us aware of exciting techniques that we are temperamentally unable to implement (p.25).

Participants discussed the benefits of observing how SEL principles manifest in their students' interactions, both with their peers and the subject matter.

Ultimately, step seven equipped educators with practical evaluation and assessment tools that extend beyond assessing students' SEL growth. It also underscored the importance of self-reflection and self-assessment for educators themselves.

Active engagement and collaboration were woven throughout the workshop, transforming theoretical knowledge into practical wisdom. Hands-on activities, small group discussions, and reflective exercises enriched the learning experience and fostered a supportive community of educators. The sense of community that emerged from this workshop may be extended into the educators' professional lives, creating a network of peers who could continue to share resources, insights, and experiences, ensuring ongoing growth and collaboration in the realm of SEL-infused CLIL instruction.

5. Conclusion

In summary, the workshop transcended a mere procedural approach, representing a transformative journey towards comprehensive SEL-CLIL integration. Participants gained not only an in-depth understanding but also acquired actionable strategies and formed a supportive network for ongoing collaboration. This workshop empowered educators to seamlessly integrate Social and Emotional Learning (SEL) into Content and Language Integrated Learning (CLIL). It included understanding SEL dimensions, exploring curricula, defining concepts, and aligning with best practices. Participants gained practical tools, engaged in collaborative learning, and developed a sense of community. Addressing challenges, evaluating SEL impact, and fostering continuous improvement were integral components of their learning. The workshop served as a catalyst for educators to reshape education through SEL-CLIL integration, leaving them with a strong foundation, practical strategies, and a supportive network for ongoing collaboration and growth.

They are now better poised to reshape education by nurturing emotionally intelligent, socially adept individuals ready to thrive in the 21st century's complex world.

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