UNIVERSIDAD DE EXTREMADURA

UEX

PhD DISSERTATION

Integrating Content and Language in Higher Education: Exploring Teacher Collaboration in a Portuguese Higher Education Polytechnic

TESIS DOCTORAL

La Integración de Contenidos y Lengua en la Educación Superior: una aproximación a la colaboración docente en un centro politécnico portugués de enseñanza superior

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PROGRAMA DE DOCTORADO EN LENGUAS Y CULTURAS

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Esta tesis cuenta con la autorización de la directora y codirectora de la misma y de la Comisión Académica del programa. Dichas autorizaciones constan en el Servicio de la escuela Internacional de Doctorado de la Universidad de Extremadura

2024

"It is the supreme art of the teacher

to awaken joy in creative expression and knowledge"

Albert Einstein

Dedication

To my son Gonçalo

Acknowledgments

Reaching this point would not have been achievable without the care, encouragement, and affection of all those who have accompanied me on this long and hard journey. To them I want to express my gratitude.

First, I express my deep appreciation and gratitude to my supervisors, Dr Ana María Piquer-Píriz and Dr Margarida Morgado. They have always encouraged me to move on and provided endless support. I would never achieve this stage without their inspiration and expertise.

I thank my colleagues at *Agrupamento de Escolas Nuno Álvares*, especially those of Group 330, for being with me along this year, providing endless support and being always there when I couldn't be. Thank you, Ana, for all the conversations and the so many times you actually did my part of the work. I thank Sandra for being there with me and helping me in so many ways and for our lunch conversations that have encouraged me to move on. I thank Paula for always letting me know that this is a hard process and that she knows what it is like, but that strong women can achieve it. I thank Márcia and Marina for being there to listen and for all the phone calls and messages.

I thank my friends and family who respected my time away and silence. I will keep my word and have time for each one of you. I am back into life again!

I would also like to thank my colleagues at IPCB, who have collaborated in this research and made it possible. I thank the 8 respondents for the long time they spent answering the interview so accurately. Thank you, Margarida and Marcelo, for accompanying me, for our teamwork and for being so many times my inspiration and motivation. It has been such a great journey!

I am thankful for each friend and colleague who called or simply sent me a message. They were very important to me and helped me a lot.

Finally, I thank my people. I thank Gonçalo, my son, for understanding all the moments I had to work and could not be with him. Without realising it, you were so many times the one who kept me on track, ensuring that I never gave up and always moved forwards. I thank my husband for the endless support, care, love, patience, help and the hard words I sometimes needed to hear throughout this

process. I thank my mother for helping me, being there and making me the person I am today. I ultimately thank my father, who did not live to be here with me, for being part of me. I finally did it!

Abstract

This PhD dissertation employs a mixed-method approach, combining quantitative and qualitative data analyses to investigate the impact of Teacher Autonomy, Teacher Collegiality and Language Competence on Teacher Collaboration for Integrated Content and Language in Higher Education (ICLHE) within the context of the Polytechnic University of Castelo Branco (IPCB). Involving 194 lecturers, the study employed a questionnaire, analysed through SmartPLS and 8 semi-structured interviews, analysed thematically using NVivo.

Results indicate that Teacher Autonomy and Teacher Collegiality influence Teacher Collaboration. A self-perceived high degree of autonomy may be used to implement new and innovative approaches. While IPCB lecturers do not use collegial interactions to engage in teaching collaborations with each other, it may be a starting point for collaboration. IPCB teachers believe they have adequate language competence to teach in English but argue that it is not their task to focus on specific language issues even though they recognise their need for training in this area. Lecturers view their students' English language skills as generally insufficient for participating in English taught classes as a potential obstacle for ICLHE implementation.

These findings contribute to the field of ICLHE/CLIL by highlighting the importance of interdisciplinary teacher collaboration for effective implementation of bilingual approaches in the context of both ICLHE and EMI. By assessing Teacher Autonomy, Collegiality, Collaboration and Language Competence to teach through the medium of English, this research sheds light into the optimal conditions for teacher collaboration in a particular Portuguese higher education institution which may be replicated in similar contexts.

Keywords: ICLHE, Teacher Collaboration, Higher Education

Resumen

Esta tesis doctoral analiza el impacto de la Autonomía, Colegialidad y Competencia Lingüística del profesorado en la Colaboración Docente para la Integración de Contenidos y Lenguas en la Educación Superior (ICLES) en la Universidad Politécnica de Castelo Branco (IPCB) utilizando un enfoque de métodos mixtos. Se emplearon un cuestionario, respondido por 194 profesores y analizado con SmartPLS, y 8 entrevistas semi-estructuradas, analizadas temáticamente con NVivo.

Los resultados obtenidos indican que la Autonomía y la Colegialidad del profesorado influyen en la Colaboración Docente. La autopercepción de una alta autonomía puede fomentar enfoques innovadores. Aunque los entrevistados no participan habitualmente en enseñanza colaborativa mediante interacciones colegiadas, esto podría ser un punto de partida para la colaboración docente. El profesorado se siente competente para enseñar en inglés, pero argumenta que no les corresponde abordar problemas lingüísticos específicos, aunque reconocen la necesidad de formación en este ámbito. Además, perciben que el dominio del inglés de sus estudiantes es insuficiente para seguir clases impartidas en ese idioma, lo que podría obstaculizar la implementación de un modelo ICLES.

Estos hallazgos enfatizan la importancia de la colaboración interdisciplinar entre profesores en enfoques bilingües dentro de los contextos de ICLES y de Inglés como Medio de Instrucción (EMI). Al evaluar la Autonomía, la Colegialidad, la Colaboración y la Competencia Lingüística del profesorado en la enseñanza en inglés, esta investigación identifica condiciones óptimas para la colaboración entre profesores dentro de una institución específica de educación superior en Portugal, que podrían ser aplicable en entornos similares.

Palabras clave: ICLES, Colaboración Docente y Educación Superior

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LIST OF ABBREVIATIONS

A3ES - Agency for the Assessment and Accreditation of Higher Education

AGECOM - Unidade de Investigação Interdisciplinar - Comunidades Envelhecidas Funcionais (Interdisciplinary Research Unit – Functional Ageing Communities)

AVE - Average Variance Extracted

CAQDAS - Computer Assisted Qualitative Data Analysis Software

CBI - Content Based Instruction

CB-SEM - Covariance Based - Structural Equation Model

CEDER - Centre of Studies and Regional Development

CERNAS - Centro de Estudos em Recursos Naturais, Ambiente e Sociedade (Centre for Studies in Natural Resources, Environment and Society)

CETAPS - Centre for English, Translation and Anglo-Portuguese Studies

CIPEC - Centro de Investigação em Património, Educação e Cultura (Research Centre in Heritage, Education and Culture)

CLIL - Content and Language Integrated Learning

COL - Collaboration

CoP - Community of Practice

CPLP - Community of Portuguese Speaking Countries

CPLP - Pedagogic Council

CTC - Scientific Technical Council

CU - Curricular Unit

DISAC - Digital Services, Applications and Content

EAP - English for Academic Purposes

ECML - European Centre for Modern Languages

EFL - English as a Foreign Language

EME - English Medium Education

EMEMUS - English Medium Education in Multilingual Settings

EMI - English as a Medium of Instruction

ESACB - Higher School of Agrarian Studies

ESALD - Higher School of Health

ESART - Higher School of Arts

ESECB - Higher School of Education

ESGIN - Higher School of Management

ESHTE - Escola Superior de Hotelaria e Turismo do Estoril

ESP - English for Specific Purposes

ESTCB - Higher School of Technology

ESTIG - Higher School of Technology and Management

FCT - Science and Technology Foundation

HE - Higher Education

HEI - Higer Education Institution

HTMT - Heterotrait-Monotrait Ration of Correlations

IaH - Internationalisation at Home

ICLHE - Integrated Content and Language in Higher Education

IEB - Ethical Board

INCOLLAB - Interdisciplinary Collaborative Approaches to Learning and Teaching

IPB - Instituto Politécnico de Bragança

IPCB - Instituto Politécnico de Castelo Branco

IPG - Instituto Politécnico da Guarda

IPP - Instituto Politécnico de Portalegre

LA - Language Awareness

LAC - Language Across the Curriculum

LC - Language Competence

LPP - Legitimate Peripheral Participation

MMR - Mixed Methods Approach

PLS-SEM - Partial Least Squares - Structural Equation Model

QRURAL - Qualidade de Vida no Mundo Rural (Quality of Life in Rural Areas)

QUAL - Qualitative

QUAN - Quantitative

RECLES - Network Association of Higher Education Language Centres in Portugal

SAS - Social Action Services

SGQ - Quality and Assessment System

SPOC - Small Private Online Course

TA - Teacher Autonomy

TC - Teacher Collaboration

TCAS - Teacher Collaboration Assessment Survey

TEP - Teacher Education Programme

UEX - Universidad de Extremadura

UID - Research and Development Unit

UTC - Technical Scientific Unit

VALIANT - Virtual Innovation and Support Networks

Preliminary considerations

This project is the result of several years of collaborative work using the ICLHE/CLIL approach to enhance and develop ESP. It is the result of the author's work in a HE polytechnic university in Portugal. Results from that work and this research study have been presented in several national and international conferences, and partially published in the following papers:

- Sampaio, C., Régio, M., & Sebastião, J. R. (2024). The Influence of Students' Perceptions and Motivation on Accounting and Taxation Careers. Administrative Sciences, 14(1). doi:10.3390/admsci14010018

- Sampaio, C., Régio, M., & Morgado, M. (2021). Implementing Integrated Content and Language in Higher Education in Accounting Classes: Implication for International Business Teaching. Journal of Teaching in International Business, 32(3–4), 236–261. doi:10.1080/08975930.2022.2033668

- Régio, M., Gaspar, M., & Morgado, M. (2019). Instructional Design in Electrotechnical Engineering: A Case Study on Integrated Online Approaches. Lecture Notes in Electrical Engineering, 505, 1125–1130. https://doi.org/10.1007/978-3-319-91334-6

- Régio, M., Gaspar, M., & Morgado, M. (2019). Instructional Design in Electrotechnical Engineering: A Case Study on Integrated Online Approaches. Lecture Notes in Electrical Engineering, 505, 1125–1130. https://doi.org/10.1007/978-3-319-91334-6

- Morgado, M., Gaspar, M., & Régio, M. (2018). Interdisciplinarity and Teacher Collaboration in Higher education Engineering Courses: Lean Thinking Applied to Teaching and Learning. Journal of Education Culture and Society, 9(2), 179–186. https://doi.org/10.15503/jecs20182.179.186

- Morgado, M., Régio, M., & Gaspar, M. (2017). Content, Language and Intercultural Challenges in Engineering Education: (E-)Strategies to Improve Instructional Design. New Trends and Issues Proceedings on Humanities and Social Sciences, 153–161. https://doi.org/10.18844/prosoc.v4i8.3026

- Régio, M., Gaspar, M., Farinha, L., & Morgado, M. (2017). Industry 4.0 and Telecollaboration to Promote Cooperation Networks: A Pilot Survey in the Portuguese Region of Castelo Branco. International Journal of Mechatronics and Applied Mechanics, 1, 243–248

- Gaspar, M., Régio, M., & Morgado, M. (2017). The Co-construction of a Bilingual Glossary of Terms for Engineering and Design Technologies as Part of Learning in Engineering Through a Collaborative CLIL Approach. 3214–3218

- Gaspar, M., Régio, M., & Morgado, M. (2017a). Lean-Green Manufacturing: Collaborative Content and Language Integrated Learning in Higher Education and

Engineering Courses. Journal of Education, Culture and Society, 1, 208–217. https://doi.org/10.15503/jecs20172.208.217

- Régio, M. M. A., Gaspar, M. R. C., Farinha, L. M. C., & Morgado, M. M. A. P. (2016). Forecasting the disruptive skillset alignment induced by the forthcoming industrial revolution. *Romanian Review Precision Mechanics, Optics and Mechatronics.* doi:http://doi.org/http://dx.doi.org/10.17683/rrpmom.issue.49

- Gaspar, M., Régio, M., & Morgado, M. (2016). Learning English Through 3D-Printing: A Case Study with Engineering and Design Students in Higher Education. In 8th International Conference on Education and New Learning Technologies (pp. 5132–5138). doi:10.21125/edulearn.2016.2212

- Morgado, M., Coelho, M., Ribeiro, M. del C. A., Albuquerque, A., Silva, M. M. da, Chorão, G., Chumbo, I. (2014). CLIL Training Guide: Creating a CLIL Learning Community in Higher Education.

Introduction

Since my first steps as a teacher, I remember and always have the following Ben Franklin's quotation in mind: *"Tell me I will forget, teach me and I'll remember, involve me and I'll learn".*

When a teacher is driven by the passion for teaching and for making a difference in students' learning, new challenges and approaches are always welcomed. The lack of student motivation to learn English for Specific Purposes was a motivation to research for solutions and new (better) ways of approaching foreign language teaching. This marks the onset of experimenting with ICLHE/CLIL in this teacher's life.

Choosing to collaborate with other Higher Education teachers was the result of several years of work using the ICLHE/ CLIL approach as an improvement and development of ESP. During these years, collaborative work was developed at the level of materials design, methodologies, teaching in class, and assessment. As a result, close and deeper interdisciplinary collaboration was developed with some colleagues. Moving from an empirical experiment to researching into it and finding the relevant arguments to explain why it may work and be scalable in a particular Higher Education context in Portugal, was the next move.

The international collaboration and exchange among European higher education institutions (HEIs) and across the globe have elevated the status of internationalisation as a catalyst for transformation within HEIs. This has introduced innovation and a fresh dynamism to the tertiary education sector, fostering new relationships with international partners and broadening the institutions' vision and range of activities.

According to Knight (2020), the process of internationalisation is reshaping the landscape of higher education. As argued by Marsh (2017), to engage internationally, proficiency in a common language is essential. Currently, English consistently serves as the global lingua franca.

However, other factors may influence the need to provide students with programmes taught in English, such as creating opportunities for international students, fostering the development of intercultural and global competencies among non-mobile students, elevating the institution's international standing, attracting the brightest students from both domestic and international backgrounds, and augmenting external funding through increased student enrolment (Wächter & Maiworm, 2014).

As an answer to this need, innovative methodologies which provide students with linguistic competence as an addition to technical skills have been arising all over European HEIs in the last decades. Research points out to different positive aspects of ICLHE/CLIL, such as lexical knowledge gains (Alejo & Piquer-Píriz, 2016; Castellano-Risco, 2018) as a beneficial framework to encourage foreign language acquisition (Cenoz et al., 2014; Dalton-Puffer, 2011; Pérez Cañado, 2012), positive effects on students' listening skills (Lasagabaster, 2011) and cognitive advantages and enhanced comprehension of subject matter (Van de Craen et al., 2007).

Pavón Vázquez and Ellison (2013) contend that the effectiveness of ICLHE/CLIL programmes, which entail the delivery of subject matter through a foreign language, is not solely dependent on the proficiency of both the language and the content instructors. Rather, it hinges on the extent and nature of collaboration between content and language lecturers. A close collaboration among content and language educators will enhance successful CLIL instruction. Within this framework, both teachers should engage in an active discussion regarding their professional expertise and how their instructional methods should be adapted to align with the objectives of ICLHE/CLIL within a specific context. This requires a high degree of introspection, dedication, and responsibility, as it compels instructors to step beyond their comfort zones and embrace an environment characterized by challenge and ambiguity. It also demands a significant investment of time, serious consideration of pedagogical skills and to the needs of the learners (Ellison, 2014).

As we delve into the dynamics of ICLHE/CLIL programmes and the fundamental role of teacher collaboration, it becomes increasingly apparent that the success of these actions goes beyond the proficiency of individual educators.

Collaboration between content and language instructors emerges as a key element, requiring a deep commitment to pedagogical innovation and an openness to adapt to the different challenges inherent in ICLHE/CLIL.

Given the imperative for Higher Education Institutions (HEIs) to transform into international organisations, equipping their students with vital competencies for the global job market, and enhancing their appeal to foreign students as a means to increase their reputation, this dissertation aims to determine the optimal conditions for interdisciplinary teacher collaboration for ICLHE/CLIL in a Polytechnic HE institution in Portugal by exploring and analysing such variables as autonomy, collegiality and language competence in teacher collaboration in HE contexts.

In-depth research on teacher collaboration, together with the author's field experience in teacher collaboration in a HE context, allowed to investigate and determine the latter as the most suitable variables for this research. Therefore, the exploration of each of these concepts showed they are closely related with collaboration.

There is some agreement that autonomy can be perceived as a type of professional self-isolation or a reluctance in getting engaged in joint decision-making with colleagues. A university lecturer's work comprises both autonomy and collaboration with peers and a balance between them may be achieved through a combination of professional attitudes and personal characteristics.

Literature indicates that, in the context of education, collegiality is characterised by a culture of cooperation, shared respect, and collaboration among colleagues (Kelly & Cherkowski, 2015). As such, strategies to foster collegiality will be presented in this dissertation, since promoting collegial habits may be essential for implementing ICLHE.

For ICLHE implementation, the language proficiency of both lecturers and students is necessary. Therefore, several practices and strategies to improve both instructors and learners' competences will be highlighted.

As mentioned before, teacher collaboration for ICLHE remains underexplored. However, there is also some agreement that it is crucial for successful CLIL implementation. Pavón Vázquez & Ellison (2013) contend that the success of

ICLHE/CLIL programmes hinges not solely on the teachers' linguistic and subject expertise. It also significantly depends on the nature and extent of collaboration between content and language teachers. The effectiveness of CLIL teaching relies upon the collaboration between content and language educators.

Therefore, this dissertation puts together teacher autonomy, collegiality, and language competence within the framework of teacher collaboration for successful CLIL implementation in HE contexts.

Thus, the structure of this thesis will now be presented and illustrated in Table 1 presenting a detailed description of its structure, with the headings of the different parts, chapters, and concise description of the content.

Table 1

PhD Dissertation Structure

Part	Chapter	Description
Part One: Conceptual Framework	Chapter 1	ICLHE/ CLIL
	Chapter 2	Exploring Autonomy, Collegiality and Language Competence in the Framework of Teacher Collaboration
Part Two: Experimental Study	Chapter 3	Research Context
	Chapter 4	Research Methodology and Design
	Chapter 5	Results
	Chapter 6	Results Discussion
	Chapter 7	Conclusions, Limitations and Further Research

Part One deals with the conceptual framework of this study and comprises two chapters. Chapter 1 is devoted to ICLHE/CLIL, providing an overview of ICLHE/CLIL and most relevant concepts associated to it and its implementation in Portugal. Chapter 2 explores autonomy, collegiality, and language competence in the framework of teacher collaboration. To elaborate on this topic, this chapter presents the most relevant literature in the field in order to contextualise the

relationship of autonomy, collegiality and language competence for teacher collaboration in Higher Education (HE).

As for the second part of this dissertation, a thorough examination of the collected data is conducted. This part aims to investigate the connection and influence of autonomy, collegiality and language competence in teacher collaboration. This part is made up of four chapters. Chapter 4 describes the context of the study. Chapter 5 deals with the description of the methodology, in which the research questions are posed, and participants, instruments, data treatment are detailed, and results are depicted. Then, in Chapter 6, the discussion of the results is presented. It aims at investigating the perceptions of lecturers regarding the key variables of the study. These perceptions are analysed in the light of the quantitative and qualitative results. Recommendations for the improvement of ICLHE practices at IPCB, based on the analysed perspectives of the lecturers involved will also be provided. Finally, Chapter 7 presents the conclusions of the study, together with the analysis of the limitations and some insights on further research.

PART ONE

CONCEPTUAL FRAMEWORK

Part One analyses and reviews some of the most influential literature on topics considered relevant to understand why ICLHE/CLIL (Integrated Content and Language in Higher Education/Content and Language Integrated Learning) may work in Higher Education by approaching the following concepts: ICLHE/CLIL, Teacher Language Competence, Teacher Collaboration, Teacher Collegiality and Teacher Autonomy.

As CLIL gained popularity in European compulsory education for enhancing students' language proficiency and subject knowledge, it has also found its way into Higher Education institutions over the past few decades to answer the forces of globalisation and the internationalisation efforts undertaken by universities, complementing the use of EMI. To describe the implementation of CLIL in Higher Education, the term ICLHE was coined, as proposed by Wilkinson (2018).

The two terms will be used along this dissertation, ICLHE for HE contexts, CLIL for general contexts. When they both apply, ICLHE/CLIL will be employed.

Chapter 1:

Integrating Content and Language in Higher Education (ICLHE) / Content and Language Integrated Learning (CLIL)

Chapter 1 contextualises ICLHE/CLIL considering its foundations and approaching initial forms of foreign language learning, content based learning and bilingual education. A special focus will be put on CLIL in Higher Education, namely ICLHE, and how as an approach to foreign language teaching it contends with the educational space of English for Specific Purposes (ESP) and English as a Medium of Instruction (EMI). CLIL implementation in Portugal will be explored in terms of how it responds to students' needs to be prepared for the labour market as well as teachers' needs to offer a comprehensive quality education to keep up with internationalisation of the Higher Education space and to motivate Higher Education students to use English to learn.

It is also highlighted the importance of creating and sustaining Communities of Practice (CoPs) as the basis for teacher collaboration in Higher Education that will sustain ICLHE/CLIL. Lastly the chapter delves into teachers' language competence as a complex issue in the context of using English to teach. At the end of the chapter, some concluding remarks are presented.

1.1.   The contexts from which CLIL and ICLHE emerged

The world is in a constant flux of change and now, more than ever, young people are exposed to knowledge and different ways of learning through digital media. As Coyle (2006) among others, points out, currently there are multi-tasking students that can listen to i-pods at the same time as they download information from the internet or that are able to communicate with friends while cutting and pasting compelling graphic imagery. Millennials and Generation Z seem to be completely adapted to living in a globalised world that requires an education

system based on the teaching and learning of foreign languages to enable communication worldwide. Innovative approaches are needed to motivate teachers and students for school learning when there are so many concurrent teaching and learning spaces. The *"'one-size fits all' provision is outmoded"* claims Coyle (2006, p. 2)*.

This need may justify the emergence of CLIL and its implementation success, as it is a different, creative, flexible, and dynamic approach where foreign languages and specific content-based topics are integrated and learned together at the same time. Coyle also highlights the fact that CLIL is not the same as teaching a subject in a foreign language but is the integration of language and content in the teaching and learning process. To achieve that, language teachers and content specialists need to collaborate and to work together to achieve common goals (Coyle, 2010). These common goals are not only the integration of content and language, but also creating a cognitive challenge to keep students motivated in learning and giving them appropriate cultural and scientific contexts in which they can use the language they are learning purposefully.

After an initial boost by Do Coyle, David Marsh and Peter Mehisto and some of their colleagues (Coyle et al., 2010; Marsh et al., 2010; Mehisto et al., 2008), CLIL experienced a boom among schools, national curricula and practitioners all over Europe (Eurydice, 2006; Lasagabaster, 2009; Ljalikova et al., 2021; Nikula, 2015; Pérez-Vidal, 2013). CLIL, as integration of the learning of a content subject with the development of students' linguistic skills in a foreign language, has become a key area of curricular innovation since it is aimed at improving both students' foreign language competence and content knowledge as well as increasing student motivation to learn.

CLIL is not a novelty or a radical move from previous practices in education. Interest in the CLIL approach gained momentum in the mid-1990s. The acronym was coined in 1994 by David Marsh, as a reflection on the state of foreign languages education in Europe and how it could be radically improved to integrate learning as a whole (Coyle, 2015). Marsh (1998) suggests that this innovative approach emerged as a solution for the need of an education for all, with equal opportunities for every European. He also calls CLIL a plurilingual approach (Marsh, 1998). Similarly, Coyle (2002) points to the importance of CLIL

in achieving the European Commission's learning objectives, because the aims of CLIL remain constant over time and are focussed on students and the learning process.

With the development of CLIL in Europe, which arose from the idea of plurilingualism and European citizenship, through which every European should be able to communicate in at least two different languages than their own, many questions have been raised comparing immersion programmes and CLIL (Cenoz et al., 2014). As argued by the Council of Europe, language competence is a feature of democratic citizenship in Europe and language education policies should promote and provide the learning of several languages for every European, so they can become plurilingual and intercultural citizens, capable of communicating and interacting with other European individuals (Breidbach, 2003, p. 7).

As a result, bilingual education has been recommended and promoted by specialists, researchers and European governments (Baker, 2006, 2010; Cummins & Corson, 1997; Garcia, 2011) with European policies of plurilingualism, multilingualism, and bilingual education approaches being advocated and implemented in the last decades (Berthoud et al., 2013; Dafouz-milne & Sánchez García, 2013; Earls, 2016; Eurydice, 2006; Marácz & Rosello, 2015; Martinez Agudo, 2012; Pérez Cañado, 2020b; Piccardo, 2018a, 2018b).

In Europe, three different types of bilingual education can be considered (Maurizio, 2016). The first are immersion programmes where the main purpose is to teach a country's additional or local language, which is frequently another official language. In these curricula teachers are usually native speakers. Submersion programmes constitute the second type: they are widely used in Europe with migrant children and are normally related to linguistic and cultural integration of migrants with the aim of developing competences in a language that is foreign to them but needed in their daily lives in school and society in general (Hurajová, 2015; Reljić et al., 2015). And the last but also the most recent type is CLIL, the teaching of curricular contents through an L2 (often English) as part of mainstream education at different stages (primary, secondary and at university settings, too).

From an historical perspective, similar practices to CLIL can be traced far back in time. According to Mehisto et al. (2008), the first known CLIL experience dates back to the region that is now known as Iraq some 5,000 years ago. The Akkadians conquered the Sumerians and wanted to learn the local language of the people. To achieve that, the Sumerian language was used to teach Akkadians several subjects (such as theology, botany, and zoology). By doing this they supported the learning of the Sumerian language and the technical content simultaneously and in an integrated manner.

However, more recently, CLIL could also be affiliated with the 1960s Canadian French-immersion programmes or with the 1970s Languages Across the Curriculum (LAC) movement in the UK and elsewhere.

The concept of immersion education refers to pioneering educational programmes that employed the French language as the primary medium of instruction for elementary school students whose native language was English. Olga Melikoff, Murielle Parkes and Valerie Neale were the leaders of the parent group behind the creation of Canada's first bilingual education program, in 1965, in Quebec. The three women were frustrated by the restricted opportunities that existed for their English-speaking children to learn fluent French. They were also interested about the opportunities that immersive education could offer their children and developed this pedagogical approach. They became known as the "founding mothers" of the French immersion programmes.

The French immersion programme has three major variations from standard CLIL practice. The early immersion starts in kindergarten and sporadically in grade 1, in which French is typically the exclusive language of instruction during kindergarten and grade 1, with an introduction of one period for English language arts in grades 2, 3, or occasionally as late as grade 4. The middle immersion initiates in grades 4 or 5 and late immersion begins in grade 7. In grades 5 and 6, instructional time is evenly split between the two languages. However, as students' progress, the proportion of time dedicated to French typically decreases to approximately 40% in grades 7, 8, and 9. At high school level, due to the availability of a more extensive range of course options in English compared to French, further reductions occur (Cummins, 1998).

Language Across the Curriculum (LAC) argues that language learning and education takes place within the educational context, in every subject or cognitive task and not only in specific language disciplines such as mother tongue education, foreign language education or second language education (Vollmer, 2006). This movement was started by a group of secondary teachers in London in 1966 who intended to examine the significance of communication through speech in the English language. They soon found out that English could not be studied alone and just by itself. Thus, science teachers, and later of other subjects, joined the group. The LAC movement developed slowly in the 1970's through the integration of practical work undertaken within schools, classroom research (such as action research undertaken by teachers) and theory development (Parker, 1985). The movement also gained ground in Canada and Australia from the mid 1970's. In these two countries writing and speaking were the priorities, while in England the main concern was to assist teachers in independently exploring the ramifications of concepts related to language, cognition, and education (Parker, 1985).

ICLHE/CLIL can be associated to both French immersion programmes and LAC, previous programmes in which language and content were taught and learned simultaneously. However, the main difference between these programmes and the CLIL approach lies in the fact is that in CLIL content and language are regarded as complementary to each other. Students, who are the primary focus in this approach, learn the language they need to understand the content, tailored to their specific individual needs.

Previously to CLIL, in the 1980s, experiments with Content Based Instruction (CBI) were thought to be inspiring. CBI was seen as a new and innovative method for teaching, radically different from conventional foreign language teaching (Leaver & Stryker, 1989) and from the communicative approaches in second language and foreign language teaching. CBI, which took roots in Canadian immersion and bilingual programmes, aimed at combining the study of a foreign language and a content topic, specific to a group of students (Leaver & Stryker, 1989). The type of activities used in CBI are in some ways similar to those used in CLIL, such as reading authentic texts, promoting student presentations and

classroom discussions or role plays. The content topic to learn about could be any, provided it was selected according to students' needs.

In an article which compares CBI and CLIL, Cenoz (2015) concludes that these two approaches share identical learning objectives and are not pedagogically different from each other. They both refer to the teaching of a content topic using a second or additional language. In her articles, which compare the teaching of subjects in Basque and English, results show that there are no important differences between the two methods (Cenoz, 2015; Cenoz et al., 2014).

When approaching CLIL as ICLHE, that is, its practices in Higher Education, its relationship with English for Specific Purposes (ESP) can be considered relevant. According to Dudley-Evans et al. (1998) ESP is centred in the language, genres, discourse and skills of a specific subject and included in a given higher education course. In the 1960s, ESP emerged as a reaction to a failure of English teaching and learning to meet the increasing needs of employers in terms of specific language competences of graduates in the labour market.

In 2010, the European Union, through the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, defined ESP as a teaching approach intended to meet mostly professional requirements of learners (European Comission, 2010).

Alhasani and Stojković (2016) recover Strevens' fundamental and variable characteristics of ESP: it aims to meet demands of the learner; its content is related to specific fields and subjects; it is focused on the language needed for the learning of specialized content; and, as such, it is opposed to general English. On the other hand, some characteristics of ESP can vary according to external aspects: it is limited to the language needed to learn the specific content; it does not use a pre-established method and it is language-based.

While analysing the common features between ESP and CLIL, Ruiz Garrido and Fortanet-Gómez (2009) define the former as a term to describe courses that aim to teach English for particular needs of the learners. ESP gives significance to language learning, although imbued with subject specific content. The authors further examine the connection between ESP and CLIL to indicate that this

relationship is not new, it comes from the 1990's and that there is a link between ESP and CBI, the predecessor of what we know today for CLIL. The main differences pointed out by these authors between ESP and CLIL are the focus and the method, since ESP focuses on the language while CLIL focuses on both language and content and more strategies to support learning are used and included in the learning process.

Räisänen and Fortanet-Gómez (2008) examine the implications of the Bologna reform on the instruction and acquisition of ESP in Western Europe. In their conceptualization of ESP, they encompass all the different forms of specialized English instruction within higher education, such as EAP, Business English (BE), and English for Science and Technology (EST).

Ruiz-Madrid and Fortanet-Gómez (2023) argue that terminology related to the integration of content and language in higher education has arisen from a multitude of policies and practices, leading to a lack of differentiation among the definitions employed in diverse contexts. The authors feel the need to clarify terms. They first delineate the emergence of CLIL and subsequently delve into the concept of ICLHE. They contend that ICLHE was created to emphasize the 'I' in the concept: integration. This integration incorporates language and subject matter within university courses delivered by non-native English-speaking instructors to non-native English-speaking students in countries where English is not the primary language of instruction (Ruiz-Madrid & Fortanet-Gómez, 2023).

Although Alhasani & Stojkovic (2016) advocate that ESP methodology is more efficient and more suitable than ICLHE/CLIL, other authors argue they both share common ground (González Ardeo, 2013; Leonardi, 2015; Vega & Moscoso, 2019; Wahyuningsih et al., 2016; Yang, 2016). Still, some other authors believe that ESP is the perfect companion to English Medium of Instruction (EMI), since the latter focuses mainly on content learning and places language acquisition in the background (Kırkgöz & Dikilitaş, 2018; Mancho-Barés & Arnó-Macià, 2017).

Research "shapes EMI as an umbrella term, catering for a range of realisations and constellations that each represent bundles of further characterising criteria" (Smit, 2023, p. 1). Smit also argues that, for the implementation of EMI, it is essential to have three fundamental components: (1) teaching academic subjects

in English, (2) offering these subjects to individuals who use English as their second language (L2), and (3) ensuring the presence of these elements (Smit, 2023).

While the integration of English as a Medium of Instruction (EMI) is typically linked to Higher Education Institutions' (HEIs) internationalisation strategies and often justified by the need for effective communication among lecturers and students from diverse linguistic backgrounds, there is a growing focus on understanding the significance of language itself in the context of EMI.

To encompass this idea that EMI serves as a platform for both content and language learning, the term "CLIL*ised* EMI" is employed by Moncada-Comas and Block (2019). In these authors' view the shift towards incorporating language learning as a primary objective of EMI results in the transformation of EMI into a CLIL*ised* approach. In fact, in recent research (Alejo-González, 2018; Macaro & Rose, 2023; Pérez Cañado, 2020a; Piquer-Píriz & Castellano-Risco, 2021; Ruiz-Madrid & Fortanet-Gómez, 2023), there has been a growing trend towards the incorporation of CLIL principles into English as a Medium of Instruction (EMI) in general and specifically within university EMI programs.

Pérez Cañado (Pérez Cañado, 2020a, 2021), who disseminated the term, argues that EMI should undergo a process of CLIL integration, which means that a significant emphasis on language should be integrated into EMI programs simultaneously with content development. Some authors have also advocated for the "CLILisation" of EMI programs in universities, both from a theoretical perspective (Alejo-González, 2018; Pérez Cañado, 2020a, 2021) or within a more applied and practical approach (Morgado et al., 2014, 2020).

In fact, research has been pointing out the connection between EMI and ICLHE/CLIL as complementary approaches rather than divergent ones (Alejo-González, 2018; Moncada-Comas & Block, 2019; Pérez Cañado, 2020a; Piquer-Píriz & Castellano-Risco, 2021).

However, research has also been focusing on the distinction between EMI, CLIL and ICLHE (Aguilar, 2017; Morgado & Coelho, 2013; Piquer-Píriz & Castellano-Risco, 2021; Woźniak & Crean, 2021). Woźniak, & Crean (2021) believe that these three terms are frequently used interchangeably within higher education

settings, leading to confusion regarding the true nature of ICLHE and EMI. This confusion arises because evidence of language support can be observed in assessment initiatives for tertiary CLIL, ICLHE, and EMI.

This perspective could be regarded as another rationale for the CLIL-isation of EMI, however it highlights the growing ambiguity between these concepts and the need to establish some shared understanding in these areas to further advance the research agenda, as argued by Pérez Cañado (2021).

In recent years, Dafouz and Smit (2014, 2020) have introduced the terms EME (English-Medium Education) and EMEMUS (English-Medium Education in Multilingual University Settings).

EMEMUS refers to a wider concept as it encompasses several research agendas, pedagogical methodologies, and forms of education, including, for example, online programs and teacher pedagogical education. The concept is clearer as it encompasses the broader term 'education', thereby including both 'instruction' and 'learning' without favouring one over the other. It explicitly delineates the sociolinguistic context under consideration, which is recognized in its broadest sense as 'multilingual'. This, in turn, acknowledges the coexistence of English as a medium together with other languages that are part of the multilingual environment (Dafouz & Smit, 2020).

1.2.   Defining CLIL and its implementation

CLIL is an innovative approach to education, the strength of which lies in the integration of content and language learning across several academic and school contexts. Any foreign language can be used, at any school level, with different age ranges and educational contexts. It also encompasses lifelong learning.

CLIL tasks, which are student centred, aim to provide meaningful learning experiences and strengthen students' motivation through engaging activities that contribute to lifelong learning and ameliorate the acquisition of cognitive skills through scaffolding and the use of ICT resources.

Beaten-Beardmore (2009) emphasizes that CLIL offers additional benefits. It fosters enhanced language acquisition through increased exposure to both

content and language. Furthermore, CLIL improves cognitive processes, specifically fostering the development of advanced cognitive skills, thereby contributing significantly to the promotion of lifelong learning through the creation of substantial educational opportunities.

The research literature seems to be unanimous in claiming that CLIL brings additional motivation for students to learn a foreign language (Doiz et al., 2014; Lasagabaster, 2011, 2019; Martí Arnándiz et al., 2022; Sylvén & Thompson, 2015; Tompkins, 2022; Verspoor et al., 2015; Vilkanciene, 2011) and that it contributes to the achievement of European goals of unity and diversity.

However, CLIL is not a uniform concept. Mehisto et al. (2008) define CLIL as an umbrella term encompassing several educational approaches, such as multilingualism, immersion or bilingual education, arguing that CLIL summarises and applies knowledge from all these approaches in a flexible way. Therefore, there are many types of CLIL: it can provide low- to high-intensity exposure to a second language.

Furthermore, CLIL is not only about foreign language and content integration, as it also develops students' learning skills. Mehisto et al. (2008) argue that it is the students wish to learn and to use the content which drives them to develop their language skills. As such, students' learning skills are the third driver in CLIL triad, language and content skills being the other two.

Coyle et al (Coyle et al., 2010) provide the best-known definition of CLIL:

> [CLIL] is 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.

The authors also reflect upon the driving forces beyond CLIL. A particular country or region can manifest special interest in CLIL as a response to specific situations (reactive) or as a reply to certain challenges and problems (proactive). CLIL can be part of a reactive reason in countries where the language of instruction is foreign to most students. This can happen in countries such as Mozambique or

South Africa in relation to English. CLIL can be a key solution for students' success in learning through English in these regions. Proactive reasons can be related to the promotion of bilingualism and the development of specific (official) languages. That is the case of the Canadian immersion programme, which intends to develop French language, Basque trilingual initiative which wishes to promote cultures and languages, or CLIL in the UK that seeks to encourage the promotion of French, German and Spanish.

Mehisto et al (2008) identify the six fundamental principles of good practice in CLIL and education, as represented in Table 2.

The six fundamental principles listed by Mehisto et al (2008), included in Table 2, are (1) multiple focus, in which language learning and content learning are both supported, (2) safe and enriching learning environment, which is based on building students' confidence to experiment with language and content, (3) authenticity, meaning using existing materials and accommodating students' interests and their experiences, (4) active learning, based on learner-centred teaching, negotiation of meaning and teacher as facilitator of learning, (5) scaffolding, built on students' prior knowledge, repackaging information and fostering students' creative and critical thinking while responding to their different learning styles; and (6) co-operation, implying collaboration with other teachers and involvement with society. These CLIL principles promote the active role of student while promoting learner autonomy.

Table 2

Principles of good practice in CLIL and education

Principles of good practice in CLIL and education	
Multiple focus	- supporting language learning in content classes - supporting content learning in language classes - integrating several subjects - organizing learning through cross-curricular themes and projects - supporting reflection on the learning process
Safe and enriching learning environment	- using routine activities and discourse - displaying language and content throughout the classroom - building student confidence to experiment with language and content - using classroom learning centres - guiding access to authentic learning materials and environments - increasing student language awareness
Authenticity	- letting the students ask for the language help they need - maximizing the accommodation of student interests - making a regular connection between learning and students' lives - connecting with other speakers of the CLIL language - using current materials from the media and other resources
Active learning	- students communicating more than the teacher - Students help set content, language and learning skills outcomes - students evaluate progress in achieving learning outcomes - favouring peer co-operative work - negotiating the meaning of language and content with students - teachers acting as facilitators
Scaffolding	- building on a student's existing knowledge, skills, attitudes, interests and experience - repackaging information in user friendly ways - responding to different learning styles - fostering creative and critical thinking - challenging students to take another step forward and not just coast in comfort
Co-operation	- planning courses/ lessons/ themes in co-operation with CLIL and non-CLIL teachers - involving parents in learning about CLIL and how to support students - involving the local community, authorities, and employers

Source: adapted from Mehisto et al. (2008)

Coyle (1999) developed, as mentioned above, the 4Cs CLIL Conceptual Framework arguing that quality CLIL depends on the relation and connection of different approaches. This framework is based on the interrelation between content, communication, cognition and culture and integrates learning (content and cognition), language (communication and culture) and intercultural experiences. Coyle states that effective CLIL takes place only when there is knowledge development, progress in content acquisition, cognitive processing

involvement, communicative interaction, language skills development and intercultural awareness (Coyle, 2007), as showed in Figure 1.

Figure 1

The 4Cs Framework
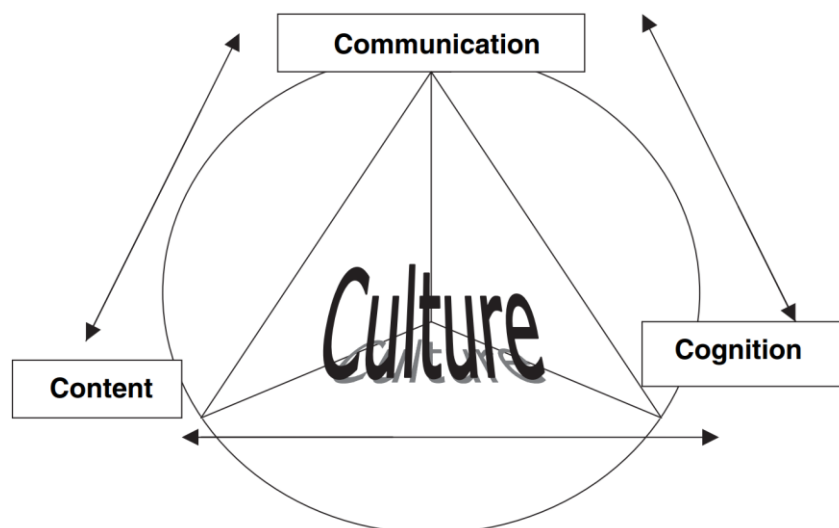
Source: Coyle (2006, p. 10)

The 4Cs Framework was built on six principles. The first, based on Lantolf (2000) and Vygotsky (1978) argues that learning a content topic is much more than simply acquiring competences and cognition, instead it is about the learner's own creation of knowledge and development of appropriate and relevant skills. The second principle is based on Met's (Met, 1978) belief that knowledge, skills and understanding require cognition or the learner's ability to learn and think. The third principle, based on Bloom (1956) and Mcguinness (1999) suggests that the process of thinking entails analysis of the linguistic requirements in order to enable progress. Krashen (1985) and Swain (2000) believe that language needs to be learned in context, which is the fourth principle: it entails adapting and recreating topics and, consequently, the associated cognitive processes by using a foreign or second language. The fifth principle frames communication and interaction as essential in learning environments. As Mohan (1997) claims, teachers should provide students with opportunities to explore their environment and the language they use, so they have the possibility to think through the resources and make them "their own". Finally, the sixth principle, following on Byram, Nichols and Stevens (2001), refers to the complex interrelation of

cultures, language and places. When the cultures of students are given centre stage, alternatives have to be created using different and unconventional methodologies; and global citizenship, student voice and 'identity investment' need to be taken into account to promote intercultural awareness (Schecter & Cummins, 2004).

Coyle (2002) defines four key concepts fostered by CLIL. The first, content, highlights how the success of learning a content topic and acquiring knowledge, competences and awareness are central for learning. The second concept, communication, considers language as a means to communicate and learn. The third, cognition, underlines that CLIL must include a cognitive challenge for students so they can develop their thinking, their interpersonal communication skills and improve their academic language competence. The last concept, culture, identifies CLIL as a chance for learners to function in a different culture using an alternative language.

The CLIL approach is adaptable and is appropriate for all types of learners and education levels, through a diversity of teaching approaches and syllabus models; it encourages the development of cross-curricular skills and offers opportunities for interaction with different societies and cultures.

In the 4Cs framework, language is used applying a different approach from the traditional ways of learning a foreign language. The emphasis is no more on language learning based on linguistic form and grammatical progression, but on the uses of language considering functional and cultural needs. Communication requires teachers and students to use language of learning, language for learning and language through learning as seen in Figure 1 Language of learning delves into the language requirements of learners to effectively access new knowledge and comprehension while engaging with the subject matter. Language for learning is the key element for accomplishing successful CLIL, as it exposes the specific language skills essential for learners to function in an educational setting in which the medium of instruction is not their first language. On the third level, new language will emerge through learning. Language acquisition will naturally evolve during the learning process. While it is not possible to predict and plan for all the language needs in CLIL, new language will emerge as learners develop their knowledge, skills, and comprehension. Furthermore, as language and

cognitive processing are interlinked, it is crucial to capitalise on both spontaneous and planned opportunities to enhance learning (Coyle et al., 2010).

Coyle's 4Cs framework advocates that it is via knowledge development, competence development, content expertise, cognition, the communication framework, appropriate language command, and increasing intercultural awareness that effective CLIL takes place. CLIL entails learning to use language correctly while using language to learn successfully Coyle (2010).

In a later publication (Coyle, 2018), the author claims that CLIL, or any other formal learning, can only be acquired via an interrelated perspective where learning processes are designed jointly, the collective and educational collaborations are planned and the participants' interactions, attitudes and actions are respected. Additionally, Coyle states that integration is in the centre of CLIL and is a common concern for every type of instruction, including those mainly monolingual.

Concomitantly, Coyle (2006) clearly identifies what CLIL is not, such as: copying successful models in very different environments; 'backdoor' language teaching or extra content teaching; favouring language over subject teaching; a risk to content teaching; teaching what students already know in a different language; a fad; aiming to make students bilingual; elitist; only affordable by some students; or dependent on 'buying in' foreign national instructors.

Many teachers and researchers consider CLIL to be a positive way of improving students' skills in both content and language. In research conducted in two Belgium universities, Bartik et al. (2009) found out that student's language and content competence improve within a CLIL context. Students referred that CLIL enhanced their linguistic skills, whether they were highly proficient or average users. They felt motivated to master the language and content. Concerning the productive skills, particularly in speaking, students indicated more substantial improvements in fluency, the breadth of vocabulary used, and the ease with which they expressed themselves. This fact can be assigned to the positive emotional impact commonly linked to CLIL. As students spend a considerable amount of time in CLIL lessons, even those who are less proficient in English, appear to become more comfortable and confident in spontaneously using the language for

face-to-face interactions. In this study, as in others, the most significant linguistic progress is evident in the acquisition of domain-specific terminology. By engaging in the study of content subjects in a foreign language through CLIL, learners develop extensive vocabularies encompassing technical and semi-technical terms. Even though several teachers engaged in this programme were concerned with the fact that using an L2 as the medium of instruction might result in diminished subject proficiency, either due to the students' insufficient comprehension or because teachers might simplify the content, in general, students claimed that they possessed an equivalent level of content knowledge compared to their peers who had been previously instructed in their native language. Rather than being an obstacle, L2 processing actually enhances the quality of learning subject-specific concepts (Bartik et al., 2009).

In a CLIL study developed in a Turkish university, Bozdogan and Karhdag (2013) realised that students perceived English instruction as highly advantageous, evoking feelings of accomplishment and self-assurance. However, they also conveyed that understanding the subject matter in a second language, particularly the terminology, posed a significant challenge. Furthermore, they asserted that with CLIL their course curricula were less complex compared to those delivered in their native language. Lasagabaster and Doiz (2016) studied CLIL students' perceptions of their language learning process and the longitudinal data revealed that students' perceived improvement in English was more significant in their CLIL classes compared to their regular English as a Foreign Language (EFL) classes. Sanad and Ahmed (2017) demonstrated the effectiveness of using CLIL in developing college students' EFL reading and vocabulary skills as well as retention. Yang (2015) investigated learners' performance when using the CLIL approach and the correlation between language competence and content achievement. The results indicated that the language proficiency of entry-level learners could influence their initial content achievements. However, this effect was not sustained after the first semester, as language proficiency continued to improve.

Nevertheless, there are others who consider that the CLIL approach has some disadvantages, especially in what concerns content. Asomoza's (2015) research on a CLIL programme in a Mexican university showed that teachers and students

struggle with the language, which affects the students, who face significant challenges primarily related to developing their academic skills, such as academic writing, proficiently employing academic genres, and expanding their academic vocabulary. The study also indicates that teachers should be trained and updated about current topics in their fields of expertise, ideally in English so they can have deeper knowledge of the content and language they teach and content knowledge is not sacrificed. Vega and Moscoso (2019), in a comparative study in HE, investigated and compared two different groups of students: one with the ESP method and another with a CLIL approach. Students who followed the CLIL approach indicated some disadvantages, such as challenges in following certain lessons and requiring more effort to understand the content. In CLIL, the integration of language and content can be influenced by the particular content subjects, teachers' beliefs, practices, and awareness, as well as the English language proficiency levels of both teachers and students (Villabona & Cenoz, 2022). If language and content are not integrated in students' learning their understanding of the subject matter can be compromised, which usually concerns content teachers.

Important studies report that when CLIL is applied, student results show higher levels and improvement in language learning with high impact in communicative skills (Aguilar & Rodríguez, 2012; Coyle et al., 2010; Pérez Cañado, 2012; Wannagat, 2007; Zanoni, 2021), student motivation (Babocká, 2015; Doiz et al., 2014; Lasagabaster, 2011, 2019; Lasagabaster & Sierra, 2009; Navarro-Pablo & García, 2018; Somers & Llinares, 2018; Sylvén & Thompson, 2015; Vlasenko et al., 2020), attitude towards learning (Dafouz et al., 2007; Maiz-Arevalo & Domínguez Romero, 2013; Tsuchiya & Pérez Murillo, 2015; Vilkanciene, 2011; Vlasenko et al., 2020), student autonomy and collaborative work (Chostelidou & Griva, 2014; Pellicer et al., 2016; Pereira et al., 2021; Sánchez-García & Pavón-Vázquez, 2021).

Furthermore, CLIL also seems to have a positive impact on interdisciplinary teacher collaboration. Donnison et al (2009) explain how their Community of Practice (CoP), created to promote students' retention and engagement, enhanced their own teaching practice, motivation and engagement. Morgado, Gaspar and Régio (2017, 2018) found out that CLIL could be the solution for

engineering students' lack of motivation to learn English and started a teacher CoP. Their collaboration has been lasting for several years with positive results for both teachers in terms of interdisciplinary pedagogical practice; and for students as they become involved in interdisciplinary modules and feel more motivated to use a foreign language.

Vangrieken et al (2015) concluded that teacher collaboration can present challenges, while also offers many advantages for students, teachers, and the institution. More studies point to the positive effect of CLIL in enhancing interdisciplinary teacher collaboration, such as Ostovar-Nameghi and Sheikhahmadi (2016), Sampaio at al. (2021), Régio et al. (2019a, 2019b), Romeu et al. (2015), Scager et al. (2016) and Vangrieken (2018), among others.

Research also warns about the several types of problems that can arise from teacher collaboration, such as tensions between content and language (many times teachers tend to think that their own area is the most relevant in the whole process and forget that both are as important and relevant), personal characteristics and interaction between instructors or co-teaching/team teaching/ tandem teaching (Aguilar, 2017; Buckingham et al., 2021; Escobar Urmeneta, 2020; Gaspar et al., 2017a). This topic will be further developed in Chapter 2 (vd Sections 2.4.), as it is one of the foci of the current research study.

Some concerns related to the way CLIL is implemented are also presented by some researchers (Delicado Puerto & Pavón Vázquez, 2016; Kung, 2018; Moncada-Comas & Block, 2019; Ruiz de Zarobe & Lyster, 2018; San Isidro, 2018; Smit & Dafouz, 2012; Vega & Moscoso, 2019).

A summary of the main concerns related to the implementation of CLIL, most of which have been discussed above, are displayed in Table 3.

Table 3

Main concerns related to the implementation of CLIL

Authors	Concerns
Delicado Puerto and Pavón Vázquez (2016)	- inadequate training of teachers - curriculum design and integration - collaboration between university and experienced teachers - practical application of CLIL principles and bridging theoretical - practical aspects
Isidro (2018)	- lack of homogeneity in implementation - self-selection of students - curriculum integration challenges - teacher training and curriculum planning - pedagogical practices and methodological components - research on empirical evidence of pedagogical impact - stakeholder perspectives and classroom practices
Kung (2018)	- English elitism - limited creativity and spontaneity - lack of teacher preparation - biased recruitment
Moncada-Comas and Block (2019)	The resistance to assuming an ELT role among lecturers in EMI settings can significantly impact the effectiveness of CLIL implementation: - lack of focus on language skills - limited use of English beyond vocabulary - absence of true CLIL-isation - misalignment with EMI experience
Ruiz de Zarobe and Lyster (2018)	- diverse implementation approaches - teacher training and development - language proficiency requirements - balancing content and language - collaboration between language and content instructors - conceptualization and standardization
Smit and Dafouz (2012)	- variability in implementation - teacher preparedness - English dominance - integration of language and content - policy and practice - student outcomes
Veja and Moscoso (2019)	- language proficiency - teaching methodology - student perception and performance - comparative analysis - implementation challenges

Source: Own elaboration

When there is lack of knowledge from the administration; or when and the needs of students regarding both content and language are not properly analysed, CLIL

implementation can become difficult and challenging (Harrop, 2012; McDougald, 2015; Pons-Seguí, 2020).

1.3.   CLIL implementation in Portugal

In an overview of CLIL in Europe up to the early 2010s, Pérez Cañado (2012) highlights how primacy is being given to foreign language education in Europe, as it has become compulsory to offer second foreign language education in almost every European Union country. Furthermore, regional education authorities are favouring plurilingual policies, which enhance the inclusion of CLIL in the curricula.

Nonetheless, the geographical distribution of CLIL in Europe is not even. In Northern European countries, a vast number of research studies (Babocká, 2015; Pérez Cañado, 2012, 2016b; Renau Renau & Mas Martí, 2019; Sylvén, 2013) show that CLIL programs have been massively used and applied. Research explores the effects of CLIL in foreign and mother tongue competence, content learning and participants' points of view. In Central European countries exploratory and experimental investigation examines the effects of CLIL. In Southern Europe, Pérez-Cañado highlights two countries, Italy and Spain. The CLIL situation in these two countries is very different. In Italy, CLIL is slowly prospering in northern parts of the country and with no systematic monitoring of the process. Spain contrasts with Italy in terms of CLIL research and implementation as the number of existing CLIL research and programs in Spain is high.

By the time Pérez-Cañado published her article (2012) there was no available research on CLIL experiences in Portugal, so she concludes that Portugal was not implementing CLIL in any way. But in fact, as the Eurydice report (2006) reflects, although in Portugal CLIL is not part of the curriculum, stakeholders could decide whether to implement it or not.

There are some documented experiences in Portugal, mainly resulting from the bilingual state CLIL pilot programme (2011-2015), promoted by the Ministry of Education – Directorate General of Education in collaboration with the British Council (*Direção Geral de Educação*, n.d.). This project is still in progress and in

July 2022 a new call for schools to apply to the bilingual schools education program was opened (*Direção Geral de Educação*, n.d.). This programme has had little impact in the country, since few schools embrace it or are considered suitable to trial it. If we compare Portugal to its neighbouring country, Spain, it is easy to acknowledge how different the scope of implementation and research is.

Ellison et al. (2022) published a recent study about CLIL in Portugal with the aim of providing an overview of the development of CLIL within pre-primary, primary, and secondary schools in Portugal. The publication seeks to describe diverse and pertinent scenarios of CLIL implementation, practice, and teacher training with the objective to assist CLIL teachers and teacher educators in gaining a clear understanding of the current situation in schools. In relation to the Bilingual Schools Programme, the authors describe how the initial trial programme was considered successful and substituted by the Bilingual Schools Programme in English. It was extended form the 1st cycle to 2nd cycle (10-12 years old) and the 3rd cycle (12-14 years old) from the academic year 2017/2018. However, as the authors claim, its growth is slow and has little national impact:

> In terms of numbers of schools involved, PEBI is not a particularly ambitious programme given that its goal for 2020 was to have bilingual education in a mere 5% of the schools/school clusters in continental Portugal. The current goal is 7% by 2025. (Ellison et al., 2022, p. 37)

At Higher Education level, English for Specific Purposes (ESP) or English as a Medium of Instruction (EMI) are much more used and familiar to teachers than CLIL (Morgado & Coelho, 2013).

Ceia and Hurst (2018) provide insights into the use of EMI in Portugal. Their research highlights that various higher education institutions (HEIs) in Portugal have been incorporating EMI for different subjects across various courses. One example cited is the Lisbon School of Economics and Management, part of Lisbon University, where an entire undergraduate course in Economics is delivered in English. EMI adoption is part of broader adjustments that will change lecturers' attitudes, practices, routines, and approaches.

The authors discuss EMI it in the context of educational reforms and the internationalisation of higher education in Portugal. These changes arose from the Bologna Process and the increasing autonomy given to Portuguese HEIs, leading to a lack of curricular consistency when institutions are compared and to different interpretations and implementations of EMI and other educational strategies. The article also discusses the future challenges and opportunities arising from these changes, particularly in terms of language policy, curriculum design, and the preparation of students for a more international and intercultural educational environment. Lourenço and Mourão (2017) on the internationalisation of higher education in Portugal, refer that. EMI has become a reality at the Portuguese higher education level to attract international students. English-taught programs, especially at the Master's and PhD levels, are increasingly common in Portuguese higher education institutions. This shows the efforts to make Portuguese universities more globally competitive and attractive to students from around the world. The article argues that these changes are part of educational restructurings and the increasing autonomy given to Portuguese HEIs, which leads to different interpretations and implementations of EMI.

Lourenço and Pinto (2019) delve into the perspectives of teachers on EMI in higher education in Portugal. The article provides an overview of teachers' beliefs and experiences regarding EMI in a Portuguese higher education context, emphasizing its complex nature and the need for careful consideration and support during its implementation. They claim that EMI has been increasing as a dominant language policy initiative in higher education institutions worldwide, including Portugal. It is seen as a way to develop students' English proficiency, attract international students, promote mobility and increase national and international competitiveness.

The study explores the beliefs of both expatriate and home teachers at a Portuguese HEI concerning the benefits and challenges of EMI. It concludes that although there are common concerns among teachers, they also have different perspectives based on their backgrounds. Lecturers highlighted several EMI benefits, such as the promotion of internationalisation, enhancement of student mobility and employability, and the development of intercultural competences.

However, both groups of teachers identified significant challenges with EMI: lack of proficiency in English among both students and teachers, which can slow down effective teaching and learning; resistance to change; weakening of the Portuguese language and culture; and lack of policies to support teachers.

Moreira (2020) provides an insight on the language policies and internationalisation strategies at the University of Aveiro in Portugal, with a considerable emphasis on EMI and the language landscape in higher education. This article presents details of EMI and language policy development in the context of HE in Portugal, particularly at the University of Aveiro, highlighting the balance between internationalisation needs and local language realities.

The study examines the University of Aveiro's internationalisation and language strategies through its official strategy documents from 2010-2018 and concludes that languages are important in the institution's internationalisation strategy, but balance between Portuguese and English is important.

EMI is seen as a requirement for internationalisation, attracting international students, and enhancing mobility and employability. However, it also presents challenges, as guaranteeing the quality of teaching and learning, addressing the students' and teachers' proficiency and considering the impact on local language and culture.

Some attempts have been made to approach CLIL in Portugal from a research perspective (Arau Ribeiro et al., 2019; Coelho, 2022; Ellison, 2014, 2018; Gaspar et al., 2016, 2017b, 2017a; Morgado et al., 2017, 2018; Morgado & Coelho, 2014; Régio et al., 2017, 2019a; Ribeiro & Coelho, 2019; Sampaio et al., 2021). There have also been some Erasmus + projects that document ICLHE/CLIL approaches in Portuguese Higher Education institutions, such as INCOLLAB (Project Reference: 2019-1-CZ01-KA203-061163, https://incollabeu.wixsite.com/proj—ect/about, 09-2019 to 02-2022), TC Nurse Transcultural Nursing (Project Reference: 2018-1-ES01-KA203-050800, https://tcnurse.eu/, 09-2018 to 08-2021) or Transversal Skills in Dentistry: Content and Language Integrated Approach (Project Reference: 2015-1-LV01-KA203-013401, 12-2015 to 11-2017).

From 2012 to 2015 a nationally-funded project was launched that piloted CLIL introduction into Higher Education Polytechnics. This was called the CLIL-ReCLes project, which involved six Higher Education Institutions (HEIs): *Instituto Politécnico de Castelo Branco* (IPCB), *Instituto Politécnico de Bragança* (IPB), *Instituto Politécnico da Guarda* (IPG), *Instituto Politécnico de Portalegre* (IPP), *Instituto Politécnico do Porto- ISCAP*, and *Escola Superior de Hotelaria e Turismo do Estoril* (ESHTE). The project gained visibility through the Network Association of Higher Education Language Centres in Portugal – RECLES.pt (http://recles.pt). It started with a training course for HE teachers to learn about the CLIL approach and to develop the necessary linguistic and pedagogic skills to teach effectively in or through English, out of which resulted a Training Guide (Morgado et al., 2014). As part of the training, where content and language teachers (mainly ESP teachers) were invited to participate together with content lecturers, local experimentation with CLIL modules was encouraged as was collaboration among participants (content and language teachers). Several pilot modules were planned, materials designed and implemented within three years (2012-2015) and shared among the community of practice of all those that taught and participated in the training. The implementation of those CLIL modules was undertaken by both language and content teachers in their own classes and monitored through surveys and teaching logs that teachers were encouraged to keep. In order to value this pedagogical experience (as it was mostly interpreted by participating teachers and students), teachers were encouraged to conduct research on their practice and publish about all project stages or to create case studies (Arau Ribeiro et al., 2015, 2017, 2018; Morgado et al., 2015a, 2015b, 2016; Morgado & Coelho, 2013, 2014; Silva & Albuquerque, 2014).

The training guide, *CLIL Training Guide. Creating a CLIL Learning Community in Higher Education* (Morgado et al., 2014) which resulted from this project was written collaboratively by a group of language teachers from the six polytechnic institutes. It emphasised the importance of building Communities of Practice (CoPs), terminology-based CLIL or TerminoCLIL was used (Silva & Albuquerque, 2014) and a move from lecture-type classes to more interactive learning to give students the opportunity to engage orally and in written form in English.

For some of these HEIs, the ReCLes.pt project created the roots for CLIL in HE and, simultaneously, the need for local contextualised developments to sustain the local CoPs and encourage the further development of collaborative teacher networks who experiment with the CLIL approach. This was achieved in some cases through Erasmus+-funded international projects. IPCB was part of the Interdisciplinary Collaborative Approaches to Learning and Teaching (INCOLLAB) Erasmus+ project, whose main objective was to create, encourage and incorporate "innovative interdisciplinary, collaborative content-based approaches to language learning and teaching". From 2019 to 2022 CoPs of content and language teachers were created. These communities planned, designed and created further ICLHE/CLIL modules with dedicated materials that were implemented within the partner institutions (Pereira et al., 2021; Piquer-Píriz et al., 2021; Sampaio et al., 2021).

Another major development in Portuguese Higher Education was the creation of a research strand dedicated to CLIL, called 'Working CLIL' (https://www.cetaps.com/clil/), within a major university research centre, the Centre for English, Translation, and Anglo-Portuguese Studies (CETAPS) of Nova University of Lisbon and Porto University. 'Working CLIL' approaches CLIL across all education levels and maps the increase of bilingual/CLIL/ICLHE education in Portugal, organises an international conference every year and creates synergies between teacher education, teacher practice and research. Among its most recent activities, 'Working CLIL' explores interdisciplinary and whole-school approaches through CLIL across school levels in Portugal; publishes studies; congregates researchers on ICLHE/CLIL in Portugal; and participates in international CLIL networks.

The moves described have more to do with transforming the ways of teaching English and motivating HE students to engage with English in Portuguese HE institutions than with internationalisation of Higher Education Institutions (HEIs), which will be explored next.

1.4.   The internationalisation of Higher Education Institutions (HEIs) and ICLHE

Changes in the way people live and students' physical and virtual mobility all over the world are intimately related with globalisation. Consequently, HEIs are now concerned with internationalisation more than ever, namely the need to prepare students for this new reality and global world and becoming prepared to teach an increasingly more diverse and plurilingual audience of students.

When the topic internationalisation is approached, two essential concepts need to be considered namely 'Internationalisation at Home' (IaH) and 'Cross-border Education'. The first concept comprises the development of intercultural competence, interactions with local people, improvement of communication and language skills and integration of global and intercultural dimensions in curricular and extra-curricular activities (Knight, 2013). Cross-border education is related with the exchange of knowledge, values, ideas, innovation and academic mobility and it can consist of several types, such as people (involving faculty, students and scholars), programmes (twinning, franchise and double/ joint study programmes), providers (branch campus and virtual), projects (research, benchmarking and curriculum) and policies (credits and quality assurance) (Knight, 2013).

Recently, a dichotomy has been established between IaH and 'Internationalisation abroad'. Beelen and Jones (2015) define IaH as a set of methods used to help students developing intercultural and international competences in their home universities. Internationalisation abroad is related with all types of education which occur in a foreign country.

Piquer-Píriz and Castellano-Risco (2021) argue that IaH is being increasingly used in European Higher Education Institutions. One of the most dominant practices to boost universities internationalisation strategies is EMI. As defended by Macaro et al. (2019), HEIs are defining English as the language of communication in class and for academic purposes.

One of the most important tools for universities' internationalisation policies are languages, as institutions can only capture international students offering courses taught in a global language that students around the world can use and

understand. English is the most widely used language in this context, also known as a lingua franca. According to Coleman (2006) globalisation influences language use and economics in Higher Education Institutions. English is considered the language of science (Kruseman, 2003) and consequently, universities need to find strategies to provide students with the language skills required for an international career in such a globalised world.

In such a scenario, universities are in continuous search for improvements and different tools they can use to offer their students the best opportunities. In recent years several language teaching strategies have been used, namely: ICLHE/CLIL, EMI and bilingual education programmes (or even multilingual programmes), which were explored in a previous section of this chapter. These new approaches and methods, always involve the use of a lingua franca, can influence students' mobility and affect their decision on where to study. According to Mauranen (2012) using a lingua franca means being a user of a second language but not a learner. The emphasis is in the use of the language not on learning the language.

English is the lingua franca used for academic purposes around the world. It is used in academia to teach and communicate, in conferences and to write scientific indexed papers required for career progression in higher education. Therefore, universities and its professionals are trying to find new ways of accomplishing all these international requirements. An example of this has been the increase of training programmes for HE teachers on several linguistic and pedagogical areas, such as training to use EFL in multilingual settings: The ENRICH Erasmus+ funded Project (English as a Lingua Franca Practices for Inclusive Multilingual classrooms, Project Reference: 2018-1-EL01-KA201-047894) supports English Language Teachers in exploiting the benefits of ELF in adopting an inclusive pedagogical approach in multilingual classrooms. It recommends using innovative teaching practices, such as translanguaging and the appropriate (multi)cultural content to develop the learners' ELF-related communicative competences and other transversal skills, which are crucial for employability and social inclusion in today's increasingly multilingual and demanding world (for further information check http://enrichproject.eu/) (Cavalheiro et al., 2021).

Another example of how to cope with increasing internationalisation is experimentation with CLIL/ CLHE in opposition to or as part of EMI. When students struggle with content because of language problems, teachers may experiment with ICLHE/CLIL implementation. For learners who cannot follow the content, the use of a ICLHE/CLIL approach, in which language functions to understand the content are integrated, can enhance outcomes and motivation for learning.

Learning through a foreign language, is a demanding task for university students, who soon will be part of an international job market. In this sense, the implementation of ICLHE/CLIL is a long-term investment and there is a growing need for students to learn how to adapt to this new educational approach and for teachers to learn how to teach within it. CLIL represents the opportunity for content teachers to incorporate language awareness or language-sensitive teaching to their existing skills and for language teachers to realize how to teach a wider variety of curricular content topics in their language classes in articulation with what students are learning in their syllabi. This integration will give students the chance to develop transversal learning skills that in a near future will provide them with better career opportunities (Biçaku, 2011).

Several authors (Aguilar & Rodríguez, 2012; Biçaku, 2011; Chostelidou & Griva, 2014; Coyle, 2002, 2013; Smit & Dafouz, 2012), just to name a few, state and agree that there are several advantages with the use of ICLHE/CLIL in HEIs: motivation, language education as programmes' foundation, meaningful contexts, range of teaching and learning methods and time saving. Moreover, students are more motivated towards CLIL and classes where language is used for specific purposes and learning in an integrated manner (Biçaku, 2011; Doiz et al., 2014; Lasagabaster, 2011, 2019; Navarro-Pablo & García, 2018; Sylvén & Thompson, 2015; Vlasenko et al., 2020). Findings also state that in CLIL settings language learning is at the centre of the curriculum (Biçaku, 2011; Chostelidou & Griva, 2014; Goris et al., 2017, 2019; Lopriore, 2020; Skinnari & Nikula, 2017) since it increases the opportunities for language learning and practice without expanding the curriculum time and it promotes multilingualism and intercultural awareness.

One of the identified problems with traditional foreign language learning in HEIs, even ESP, is that learners feel the language teaching is unnatural. One of the advantages of ICLHE/CLIL is that the learning context becomes meaningful and students learn the language they need by concentrating on the content (Biçaku, 2011; Cenoz et al., 2014; McDougald, 2015; van Kampen et al., 2018). ICLHE/CLIL entails the teaching and learning of a content topic and a foreign language, which means that it saves time for students and, at the same time, exposes them to specialised language (Benvenuto et al., 2009; Biçaku, 2011; Merzlykin et al., 2018; Pirrung, 2014; Wolff, 2003). One of students' arguments, collected during ICLHE/CLIL classes and registered in several case studies, in favour of ICLHE/CLIL is that they can save time because they study and work both for the language subject and for specific content topics at the same time (Gaspar et al., 2016, 2017a, 2017b; Morgado et al., 2017, 2018, 2019; Régio et al., 2019a).

Additionally, CLIL is an innovative student-centred approach. As such, a wide variety of teaching methods are used and applied. In every subject, specific didactic means are used. As CLIL combines the teaching and learning of a content subject and a foreign language, the teaching methodologies double as well (Biçaku, 2011; Gallo, 2017; Iwaniec & Halbach, 2021; Novotná et al., 2001; Schwab, 2015; Suwannoppharat & Chinokul, 2015). This means that several methods need to be used and combined so that the content and language needs of students are attended to.

Normally, language teachers and content teachers use different methodologies. ICLHE/CLIL provides both teachers with the opportunity and challenge of combining their views to create something different and new that will provide their students with an innovative learning environment where their learning needs for progression and integration are catered for. Several studies indicate that students have successful results under the ICLHE/CLIL approach (Aguilar & Rodríguez, 2012; Bellés-Fortuño, 2021; O'Dwyer & de Boer, 2015), although others indicate that the integration of language and content in CLIL settings is not being made properly. Meyer et al's study (2015) focuses on "issues associated with the aspects of 'deficit' which are emerging from the literature" (p. 42). Students' progression will depend on the increasing ability to use language effectively or

articulate comprehension as it unfolds. Consequently, learners must acquire the necessary skills to employ a developing and progressively suitable range of language expressions. To answer this gap, a research project was created ('Literacies through Content and Language Integrated Learning: effective learning across subjects and languages' funded by the European Centre for Modern Languages (ECML)). The Graz Group (constituted by a range of international experts brought together) created and developed a model of pluriliteracies development presented in Figure 2.

Figure 2

The Graz Group model of pluriliteracies development
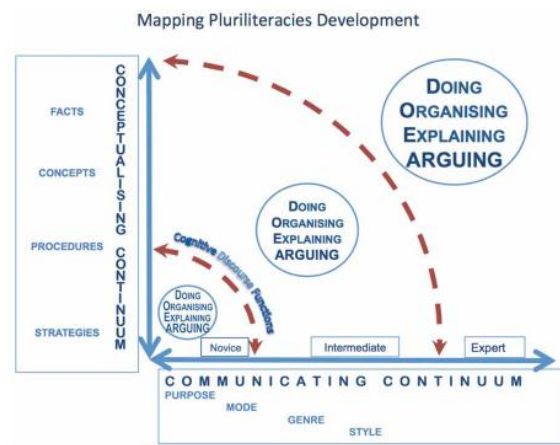
Source: Meyer et al. (2015, p. 49).

In this model, pluriliteracies development leads to an increasing proficiency in articulating subject-specific concepts or conceptual knowledge using the correct style and genre moves tailored to the specific communication purposes across a diverse range of modes, that is, students derive meaning by reinforcing the connections between the continuum of concepts and the continuum of communication. The integration of content learning and language learning will pave the way for more enriching learning experiences, as a mere connection between the two is insufficient to achieve deep learning.

One of the challenges for achieving this integration lies in lesson planning which results from the collaboration of language and content teachers, but also in

reframing the concept of learning as an interactive process of participation in an academic community, which will be explored subsequently.

1.5. Communities of Practice (CoP)

A few authors (Evnitskaya & Morton, 2011; Llinares & Morton, 2012; Moore & Dooly, 2010; Morgado et al., 2014, 2015a, 2016) have explicitly linked ICLHE/CLIL practice in higher education with the concept of communities of practice (CoP) as a foundation for teacher collaboration and for learning and teaching in a foreign language in an integrated manner.

The concept of CoP is established in sociocultural principles of learning and development, which argue that all human development is established upon social interaction in cultural or historical practices that are negotiated using cultural items, instruments, and symbols (Cole, 1996; Engeström, 2014; Vygotsky, 1978).

For Lave and Wenger (1991), the philosophy of CoPs presents a social theory of learning, since we learn and become who we are through interactions with other people and objects/media, such as books or computer programmes. Thus, CoPs move away from conceptualising learning as something with a distinct start and end point to something of a more fluid nature, where learning is informal and a product of everyday experience (Brandon & Charlton, 2011). Lave and Wenger (1991) characterise all learning, to some extent, as participation in communities of practice where people learn as they move from involvement that is, at first, secondary to total participation in the sociocultural practices of a certain community. The same authors introduced the concept as referring to specific situational learning.

According to Gutierrez (2000) and Ochs and Schieffelin (1984), language as instrument of communication and socialization is essential for learning and development. It is the means by which people make meaningful interactions, writes Cole (1996).

Although the concept was not known as such, CoPs have been around since human beings have lived and learned together. According to Wenger (1998), CoPs are groups of people who share a concern, an interest or an enthusiasm

for something and, consequently, learn how to do it better through frequent interactions or collaborations. In CoPs, acquiring knowledge is a social process where those engaged learn collectively in different ways. Individuals and the organisations they represent follow 'legitimate peripheral participation' (LPP). LPP refers to people achieving power as they become more central to gaining knowledge in specific situations. LPP was later related by the author with four interconnected topics: involvement versus reification, conceived versus emergent, identification versus negotiability and local versus global.

This view emphasises that CoP exist when a certain group of people share common objectives and intentions. In order to accomplish the group objectives, collaborative activities should be developed and sharing information and helping each other is essential. Members do not need to engage in daily interactions but need to be able to solve problems, request information, search for experiences, encourage interaction and synergy or engage themselves in fruitful discussions.

CoPs enable practitioners to manage knowledge collectively, to create a direct connection between learning and performance, to address knowledge creation and sharing and to create synergies (Wenger, 2011). They are designed to reach common goals through a 'negotiation of meaning' within a particular community. CoPs can often be both formal and informal. However, Wenger states that a certain organisation is not a single social community but a collection of interconnected CoPs (Wenger, 1998). This allows significant collected knowledge to be developed from a series of other knowledge basis (Brandon & Charlton, 2011).

Wenger (2011) describes three crucial characteristics in the CoPs: the domain, the community and the practice. The domain has a defined identity by sharing a field of interest. To be a member of a certain CoP entails dedication and commitment to the common area of interest. The community is present when members engage in collaborative activities and conversations that allow them to help and learn from each other. Practice means that members of a community are specialists and practitioners. They share practice by developing common resources: ways of solving problems, experiences, narratives, instruments, among others. Practice needs and takes time and continuous interaction.

Laksov, Mann and Dahlgren (2008) give a clarifying example of when members of a CoP engage through the negotiation of meaning that frequently takes place within it. Considering teaching, members of a community could give it a positive meaning, stating that it is something desirable to do, made with enthusiasm and that includes and requires professional development. In the same way, another CoP could work with a more negative view considering that teaching is only for those who are not successful investigators, that it is only a must-do thing, secondary to the central purpose of the community – research.

CoPs are very important in the context of higher education and essential in an ICLHE/CLIL setting. Arthur (2016) argues that the role of the academic workforce can change through CoPs as they develop networks, provide assistance, produce significant knowledge, enhance synergies and at the same time exploit the benefits of internationalisation. Furthermore, CoPs can be successful in reducing teacher isolation and in creating a supportive and friendly environment.

Examples of CoP that have contributed to strengthen the awareness of participating teachers into interdisciplinary learning and ICLHE/CLIL practices are those that resulted from European projects such as INCOLLAB[1] and VALIANT[2]. "Interdisciplinary Collaborative Approaches to Learning and Teaching" (INCOLLAB) aimed at developing, promoting and integrating innovative interdisciplinary, collaborative content-based approaches to language learning and teaching. A CoP was created to build an open, enabling education environment to promote Content and Language Integrated Learning (CLIL) in higher education. Several teaching modules were planned, designed and implemented and several research case studies were presented and published showcasing the results of the work of the Communities of Practice (Pereira et al., 2021; Sampaio et al., 2021).

"Virtual Innovation and Support Networks" (VALIANT), although not explicitly devoted to the development of ICLHE/CLIL practice, aimed at creating and developing CoPs through means of virtual exchanges. As referred in the project webpage (https://valiantproject.eu), Virtual Innovation and Support Networks are defined as Virtual Exchange programmes which bring together teachers, student

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[1] Project Reference: 2019-1-CZ01-KA203-061163

[2] Project Reference: 626134-EPP-1-2020-2-ES-EPPKA3-PI-POLICY

teachers and experts in facilitated online collaboration around real-world educational issues. This project also aims at testing if virtual innovation and support networks contribute to overcome teachers' feeling of isolation and low motivation. In order to achieve this goal, online Communities of Practice are created during the Virtual Exchange Programmes to promote collaboration among teachers from different countries who learn together to solve concrete classroom problems.

What CoP highlight most of the times is diversity and synergy of expertise of its practitioners. It stands on the willingness to collaborate to solve a problem or address an issue that stands high on the agenda of those involved. One of the issues identified in the CoPs that deal with ICLHE is connected with the self-perceived language competence of teacher participants and how they perceive their students' language competence to learn content in English. This will be addressed next section.

1.6. Teachers' Competences

Bruton (2013) and Pavón Vázquez and Ellison (2013) argue that being a CLIL teacher is not an easy task and that teaching in a foreign language requires additional competences. Pavón Vázquez (2014), specifically referring to the content teacher, states that they must be prepared to manage three different competences: knowledge of the discipline, proficient use of the foreign language and use of appropriate methodologies. Previously, Marsh et al (2010) had suggested that any teacher undertaking CLIL needs to develop certain skills in content topics, language and best practices. The teacher will also need to integrate these three competences and be capable of integrating CLIL in an educational institution.

Bertaux et al. (2010) in *The CLIL Teacher's Competence Grid* present the teachers' competences which can provide a rich CLIL learning environment. However, these competences need to be further contextualized. It is not mandatory for a successful CLIL teacher to have all these competences, they can balance the lack of knowledge in one area with another area with higher proficiency levels. The authors divide the grid in two sections: underpinning CLIL

and setting CLIL in motion. The first section refers to the competences and participants' interactions which are crucial to place the foundations for creating and maintaining a CLIL programme. The second is centred on the competences and stakeholder collaborations that are essential for implementing CLIL. Table 4 summarises the grid:

Table 4

CLIL Teacher's Competence Grid

Underpinning CLIL	
Areas of Competence	**Competences**
Programme parameters	Defining CLIL
	Adopting an approach to CLIL
CLIL Policy	Adapting CLIL to the local context
	Integrating CLIL into the curriculum
	Linking the CLIL programme with school ethos
	Articulating quality assurance measures for CLIL
Target language competences for teaching CLIL	Using Basic Interpersonal Communication Skills (BICS) (Cummins, 1999)
	Using Cognitive Academic Language Proficiency (CALP) (Cummins, 1999)
	Using the language of classroom management
	Using the language of teaching
	Using the language of learning activities
Course development	Designing a course
Partnerships in supporting student learning	Working with others to enhance student learning

	Building constructive relationships with students

Setting CLIL in Motion

Areas of Competence	Competences
Integration	Merging content, language and learning skills into an integrated approach
Implementation	Lesson planning
	Translating plans into action
	Fostering outcome attainment
Second language acquisition	Knowing second language attainment levels
	Applying SLA knowledge in lesson preparation
	Applying SLA knowledge in the classroom
Interculturality	Promoting cultural awareness & interculturality
Learning environment management	Taking into account the affective side of learning
	Making the CLIL learning process efficient
Learner focus on the CLIL environment	Applying interactive methodology
Learning skills focus on CLIL	Having knowledge and awareness of cognition and metacognition in the CLIL environment
Learning assessment and evaluation in CLIL	Knowing about and applying assessment and evaluation procedures and tools
Lifelong learning & Innovative teaching and learning approaches	Keeping up with new developments
	Using ICT as a teaching resource

Adapted from: Bertaux et al. (2010)

In an analysis of the situation of CLIL teaching in Spain, Pérez Cañado (2018) proposes seven fundamental competences for the CLIL teacher: linguistic competence, pedagogical competence, scientific knowledge, organizational competence, interpersonal and collaborative competences, and reflective and developmental competences. Table 5 summarizes all the seven core CLIL teacher competences required by any CLIL teacher today, covering the linguistic (that is essential and incorporates the intercultural part of communication), pedagogical (being aware of different learning environments and of student-centred approaches as well as varied assessment procedures), technical and scientific knowledge (mastering content and deep knowledge of ICLHE/CLIL foundations), organizational (managing time and groups in and outside class), interpersonal and collaborative (managing team work and conflicts), reflective and developmental competences (the process of lifelong learning and constant update).

The ability to collaborate with others (teacher collaboration), which is a central topic in this dissertation, is a specific competence ICLHE lecturers need to develop.

Table 5

Fundamental Competences of the CLIL teacher

Fundamental Competences of the CLIL teacher	
Linguistic Competence	- crucial at starting point
	- incorporates intercultural aspects
	- focuses on Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) (Cummins, 1999)
Pedagogical Competence	- to be familiarized with student-centered methodologies
	- to be acquainted with diverse learning environments
	- to use transparent, holistic and formative assessment
Scientific Knowledge	- to master the content
	- to have a complete understanding of CLIL theoretical foundations
Organizational Competence	- To know about groupings and learning modalities that prosper within CLIL
	- To be aware of classroom management and control strategies
Interpersonal and Collaborative Competence	- to create adequate and safe classroom atmosphere
	- to interact with colleagues, collaborate and work with them
Reflective and Developmental Competence	- To be aware of the need for lifelong learning
	- To demand for constant update with latest research on CLIL

Adapted from: Pérez Cañado (2018)

Teacher collaboration is very important when it comes to CLIL since content and language teachers should work together in order to fulfil their students' needs in terms of language and content. The integration of language and content is only achieved when both lecturers work together as a team to accomplish the common goal of integrating both the content and the language when they teach in a foreign

language. Table 6 provides an overview of the main teacher competences for ICLHE identified in the reviewed literature. Teacher preparation in terms of pedagogical updates such as classroom instruction discourse, motivating students through student-centred methodologies such as problem solving and creating interactive learning spaces looms large. Proficiency in the instruction language and adaptation of resources and materials to CLIL through scaffolding and adaptation to intercultural settings is another area for competence development that is discussed by several researchers. Thirdly, there is also a focus on reimagining teacher identities and a focus on qualifications and or dedicated professional development (across several pedagogical areas) to be successful as ICLHE teacher.

Table 6

Main competences of ICLHE teachers identified in literature

Author	Country	Competences identified
Pecorari & Malmström (2018)	Several (Literature Review) Australia, South Africa, Singapore, India, Hong Kong, among others.	- Classroom practices - Language features - Instructional setting - Teacher preparation - Teacher and student motivation
Robert O'Dowd (2018)	70 European universities (22 Spanish universities)	- Language proficiency - Student-centred approaches - Scaffolding of materials - Methodological shifts - Collaborative approaches - Focus on methodology in EMI training - Problem-based learning approaches - Adaptation of teaching methodology
Lauridsen (2017)	Denmark	- Language proficiency - Cultural and intercultural communication competences - Pedagogical knowledge and skills - Development of intercultural communication skills - Understanding of diverse educational contexts

Author	Country	Competences identified
Dafouz (2018)	Spain	- Linguistic capital
		- Professional growth and change
		- Identity transformation
		- Imagined identities and communities
		- Co-existence of languages
Dearden (2015)	Across 55 countries (included a preliminary study in three European countries - Austria, Italy, and Poland - and an overview study of 55 countries around the world).	- Lack of EMI teachers
		- Resources and guidelines
		- English proficiency
		- Alternative teaching methods
		- The role of the teacher
		- Qualifications and training
		- Interactive environment
		- Cultural sensitivity
		- Policy and strategy
Macaro, Jiménez-Muñoz and Lasagabaster (2019)	Spain	- Language proficiency
		- Pedagogical skills
		- Methodological skills
		- Subject-specific language
		- Classroom management and student interaction
		- Use of technology
		- Awareness of student challenges
Perez Cañado (2020b)	Spain	- Language level and academic register/complexity
		- Clear pronunciation and intelligibility
		- Command of content-specific materials and vocabular
		- Oral and written communication skills
		- Scaffolding for effective learning
		- Promoting student interaction and motivation
		- Classroom management tools
		- Methods for materials design and lesson planning
		- Strategies for student feedback
		- Additional skills for non-theoretical sessions
		- ICT-enhanced problem-solving

Author	Country	Competences identified
Perez Cañado (2020a)	Spain	- Theoretical underpinnings of bilingual education
		- Language competence (BICS (Basic Interpersonal Communicative Skills) & CALP (Cognitive Academic Language Proficiency))
		- Methodology and materials
		- Evaluation
		- Ongoing professional development and mobility
Doiz and Lasagabaster (2019)	Spain	- Ideal L2 self
		- Ought-to L2 self
		- L2 Learning experience
Piquer-Piriz and Castellano-Risco (2021)	Spain	- Linguistic competence
		- Methodology and classroom management
		- Resources and materials
		- Training needs
		- Overall rating of the EMI programme
Coelho (2022)	Portugal	- Linguistic competence
		- Methodology and classroom management
		- Resources and materials
		- Training needs
		- Overall rating of the EMI programme

Source: Own elaboration

Pavón Vázquez and Ellison (2013) argue that implementing CLIL is complex and demanding for teachers since they must develop competences in content, language, and the integration of both. Teachers need to adapt their methods and collaborate closely, regardless of whether they are language or content specialists. As such, CLIL's success relies on collaboration between content and language teachers, continuous professional development, and learning to adopt methodologies that foster understanding and use of both content and language.

Linguistic proficiency for teaching when using a CLIL approach is relevant and crucial. The topic of teacher language competence will be further approached in this research (see Chapter 2, section 2.3.).

1.7.   Concluding Remarks on ICLHE/CLIL

CLIL has been widely developed and implemented throughout Europe especially at the level of compulsory education and not so extensively in higher education where it acquires the designation ICLHE. In Higher Education, the concept contends with other practices, such as ESP, which is the teaching of English that focuses on developing communicative skills in a particular field, and EMI, which does not explicitly or directly involve teaching language but supports common internationalisation practices of HEIs and is generally exclusively centred on a content teacher teaching classes in English.

In Portugal, both CLIL and ICLHE have seen limited and slow implementation with only a few case studies documented, which highlight the importance of Communities of Practice for teacher collaboration and the relevance given to module development and materials design, thus essentially involving teacher pedagogical training.

Bilingual Education, the name by which CLIL school practices are known in Portugal, is not a reality fully developed yet in Portugal. Only 36 schools are currently part of the Bilingual Schools Programme, from preschool education to primary   education   and   lower   secondary   education (https://www.dge.mec.pt/programa-escolas-bilinguesbilingual-schools-programme, assessed on 10th December 2022). EMI is slowly gaining ground at Higher Education Institutions in Portugal, mainly as an answer to globalisation and to students' demands of becoming holders of an international curriculum that will help them develop better job skills and opportunities.

Wächter and Maiworm (2014) in a research about English-Taught Programmes in European Higher Education, including only programmes 100% taught in English, concluded that in South West Europe only 17.2% of institutions offer ETPs, of which only 2.1% fully in English. In 2013/14 only 0.5 % of students were enrolled in these programmes. In Southwest Europe they claim "no remarkable differences can be observed between France, Portugal, Spain and Italy. Overall, values in all countries of the region are low" (Wächter & Maiworm, 2014, p. 39). More recent data need to be collected to investigate how this may have changed

in the past ten years, as the situation in the mentioned countries has developed differently (see O'Dowd (2018) for EMI in Spain).

The chapter analysed the existing frameworks for ICLHE implementation in Portugal by exploring how it has been done elsewhere. It further explored what researchers have highlighted as ideal conditions for that implementation, namely teachers' linguistic and pedagogic competence, training needs and competencies to be developed.

The chapter also identified that although CLIL and ICLHE frameworks highlight the need for cooperation (Mehisto et al., 2008) integration of content and language (Bertaux et al., 2010) and the development of collaborative competencies (Pérez Cañado, 2018) not equal attention has been given to interdisciplinary teacher collaboration.

This dimension is highlighted in studies that link ICLHE practices to CoPs as the foundation for interdisciplinary teacher collaboration (Arau Ribeiro et al., 2016; Evnitskaya & Morton, 2011; Llinares & Morton, 2012; Moore & Dooly, 2010; Morgado et al., 2014, 2015a) for identification of problems and finding common solutions together in a non-threatening learning environment.

Later in this thesis, in the methods and results sections, IPCB experiments with ICLHE/CLIL will be approached in order to throw some light into the ideal conditions for CLIL implementation within the institution and to justify how creating a CoP may be perceived as a sustainable practice.

Chapter 2:

Exploring Autonomy, Collegiality and Language Competence in the Framework of Teacher Collaboration

In this chapter, the concepts of teacher autonomy, teacher collegiality and language competence in connection to teacher collaboration will be reviewed. Since teacher collaboration is the main topic of this thesis, it is relevant to explore how teacher collaboration relates to teacher autonomy. The latter can be interpreted in many different ways, from teachers' independence to make decisions about processes that occur within their own classroom walls, to autonomy to decide on syllabus management, school policy or own professional development. From a personal perspective, autonomy may be appreciated or shunned, it may lead to self-perceived isolation or even to a denial to get involved in collegial decision-making. However, the chapter argues that the professional work of a Higher Education teacher has to include both autonomy and collaboration with other teachers and shows how autonomy and collaboration can be reconciled through attitudes to the profession and personal characteristics.

The chapter also explores the concept of collegiality based on a systematic literature review on Scopus and WebofScience (WoS) databases. It further highlights the tension between managerial approaches and collegial approaches to the governance of HEIs and how this affects the collegial relationships of faculty staff. Lastly, it synthesizes strategies to foster collegiality and argues that collegiality habits may be an important starting point for CLIL in HE. As the author of this thesis is less familiar with the concept of collegiality, she used a different literature review method (a systematic literature review) to better understand it and connect it with the essence of this thesis, interdisciplinary collaboration for ICLHE[3].

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[3] More information about this will be in Chapter 2, Section 2.2.

Additionally, language competence will be investigated, specifically teacher language competence and student language competence and their connection with ICLHE.

In general, language competence refers to the ability of an individual to understand and to effectively use a language. Teacher language competence is usually defined as the language skills and proficiency that instructors need to teach effectively in a language. Student language competence refers to learners' ability to understand, interpret, and use a language.

The chapter also conceptualizes teacher collaboration in higher education contexts. While it may be true for most teachers that within the walls of their classrooms, they are autonomous and work in an isolated way, teacher isolation is a wider concept that goes beyond the physical conditions of teachers in classrooms to address social conditions and emotional feelings that impact on teacher professional well-being and self-efficacy. Schools and HEIs have several strategies in place for teacher collaboration, which can be defined as structural, procedural or voluntary, such as CoP. Teacher collaboration may also be a form of contrived collegiality. The chapter makes the point that effective ICLHE/CLIL practice is dependent on specific types of collaboration such as team teaching or co-teaching.

The relationship between teacher autonomy, collegiality and language competence may enhance teacher collaboration. Autonomy will ensure that teachers feel empowered and motivated to contribute with their knowledge and expertise. Collegiality will foster a supportive environment that encourages sharing ideas and collaborative problem-solving. Language competence will enable clear, effective communication, ensuring that collaborative efforts are consistent and aligned with the team's shared goals. These variables may be the framework for successful collaboration, contributing to the development of innovative pedagogical practices, enhanced professional development, and improved learning outcomes.

Thus, this chapter will explore autonomy, collegiality and language competence in the framework of teacher collaboration.

2.1. Teacher autonomy

The conceptualization of teachers' autonomy has changed over the years (Zeng, 2013). Street and Licata (1989) were the first to define teacher autonomy, which they described as teachers' beliefs of independence from the organization by making teaching decisions within their classrooms. In 1993, Pearson and Hall describe teacher autonomy as the right of teachers to control their classes by monitoring themselves and their work environment (Pearson & Hall, 1993). Later, in 2008, Shaw (2008) considered teacher autonomy the ability to control one's particular instruction. In fact, teacher autonomy should go beyond the classroom and encompass personal development, professional identity and the teaching and learning community.

For Hackman and Oldham (1975) autonomy is the freedom a member of staff has to plan work and to establish if the processes used to carry it out are often used. Husband and Short (1994), translating it into educational framework, claim autonomy is the capacity of controlling regular timetables, to instruct as each teacher chooses, to be able to make decisions on teaching, and generate new ideas. For Wilches (2007), teacher autonomy can be conceptualised as a particular feeling of independence from intrusion or just as lecturers' management of school issues. Benson (2000) sees teacher autonomy as teachers' general right to freedom instead of being under others' control. Little (1995) and Tort-Moloney (1997) argue that autonomy is the lecturers' ability to participate in self-directed instruction while Smith (2000) claims that teachers' autonomy is related to learning. Contreras (1997) views teachers' autonomy as a means of developing personal professional identity combined with the interests of the educational community. These perspectives highlight the complex relationship between autonomy, professional development, and the learning environment. Autonomy is usually related with the ability to innovate, adapt, and engage in meaningful professional interactions. It may also be relevant in fostering a collaborative and reflexive teaching practice.

Parker (2015) emphasises that autonomy is not innate but learned and influenced by individual abilities and everyone's context. He notes that autonomy is a flexible state, frequently influenced by authority, status, and social challenges. Parker

discusses several models of teacher autonomy: work autonomy, professional autonomy, engaged autonomy, responsible autonomy, regulated autonomy and occupational autonomy. Thus, fostering autonomy will require supportive environments that acknowledge individual needs and professional contexts by valuing diverse teaching practices meeting challenges and harnessing opportunities.

The work autonomy model was introduced by MacBeath (2012) advocating that teachers should control their activities and theoretical knowledge. Pitt (2010), who described the professional autonomy model, implies that autonomy is related with the individual professional identity of teachers and how they interact with their professional community. These models underline the role of autonomy to empower teachers by valuing their professional identity and community interactions.

According to Gabriel et al. (2011), engaged autonomy develops on the premise that autonomy is not associated to isolation. Teachers are encouraged to be innovative and develop independently while sustaining a sense of collaboration and valuing shared knowledge. Responsible autonomy, established by Hoyle and John (1995), suggests that teachers should have the freedom to make decisions while meeting the requirements of the educational context they belong to. Autonomy may be seen as a way to encourage shared knowledge and collective efforts of teachers within the community. As such, it should not be seen as a form of isolation, where teachers work isolated from their peers, but as a means to foster collaboration.

Dale (1982) describes regulated autonomy, a more restricted form of autonomy where teachers have some freedom but are significantly restricted by external factors. Introduced by Berry (2012), occupational autonomy implies a context where teachers can make certain choices about how they teach, but in which the general goals and assessments are predetermined. Sehrawat (2014) defines teacher autonomy as the instructors' ability to control their own teaching, including the liberty to study, learn and teach without significant interference from higher authorities. Teacher autonomy is essential to create a learning environment that attends to diverse needs, promotes a collaborative environment among teachers and enables personal and professional development.

Kreis and Brockopp (1986) focus on the relationship between teacher autonomy and job satisfaction. The study examines the relationship between the perceived degree of autonomy and job satisfaction among teachers. The authors observed a correlation between perceived autonomy inside the classroom and job satisfaction among teachers. However, autonomy perceptions within the school, but outside the classroom, did not relate to job satisfaction. Perceived autonomy in the classroom and job satisfaction may be related to each other and they can also influence the overall well-being and professional satisfaction of teachers. Enhancing teacher autonomy within the classroom will contribute to more positive professional experiences. However, the challenge will be to extend this sense of autonomy beyond the classroom to influence school decisions and culture.

The literature indicates that while teachers are presumed to have autonomy over their classroom environment, they often lack authority in school decisions, which may lead to discouragement among teaching staff. To address this gap, opportunities to enhance both teachers' work efficiency and job satisfaction should be promoted. If instructors feel empowered by their teaching practices, a sense of community will grow and collaboration may increase.

According to Strong and Yoshida (2014), teachers perceive autonomy as being central to their jobs and as strongly affecting their professional reputation and work satisfaction. For Dikilitaş and Griffiths (2017) teacher autonomy includes understanding how to be free from impositions; establishing connections between theory and practice; associating needs with things-to-do; contemplating actions and capabilities; and overcoming contextual limitations by changing beliefs and practices. Autonomy can impact teachers' professional identity and job satisfaction. Thus, by fostering autonomy, institutions will support lecturers and motivate them to improve their pedagogical practices, which will enhance the quality of education.

Huang (2005) reviews the concept of teacher autonomy, its definitions and its importance for the development of learner autonomy in the context of second language learning. In the author's perspective, teacher autonomy is generally known as teachers' willingness, ability, and independence to control their own teaching and learning. Promoting learner autonomy depends on encouraging teacher autonomy, this dynamic being essential for effective language learning.

However, there are challenges while trying to achieve teacher autonomy, such as institutional and policy requirements and the need for teachers to mediate between such limitations and the principles of fostering autonomy (Huang, 2005).

In the context of language learning, there may be a connection between teacher and learner autonomy. Teacher autonomy may enable a learning environment which promotes independent learning considering, at the same time, institutional constrains. To fulfil all these challenges, approaches that support and promote teacher autonomy, pedagogical innovation and learners' success will be essential.

Successful autonomous teachers have personal responsibility for their teaching, by continuously reflecting and exploring their independence (Little, 1995). However, internal and external constraints on teacher autonomy may arise, including teachers' beliefs about language teaching and learning, and external factors like educational systems and curricula requirements (Lamb, 2008).

Lamb (2008) similarly highlights the importance of teachers' critical reflection for overcoming limitations and points out to ongoing professional development for understanding and changing power relations in educational contexts.

Autonomy thus seems to be particularly emphasised as desirable for professional development. Smith (2008), for example, characterizes teacher autonomy as self-managed actions taken for professional development. These actions can be divided into three categories: willingness, capability, and freedom. According to Zeng (2013), and based on Smith's model, teacher autonomy can be seen as teachers' willingness, ability and freedom to manage their personal teaching and learning.

Literature indicates that teacher autonomy helps teachers' professional development (Adhikari, 2021; Iida, 2009; Zeng, 2013; Zhang et al., 2022). Teachers go through different steps throughout the learning process of autonomous development.

Zimmerman (2000) created a model of self-regulation which entails three major stages: the planning and preparation phase, the implementation period, and the self-reflection stage, as shown in Figure 3.

Figure 3

Triadic forms of self-regulation
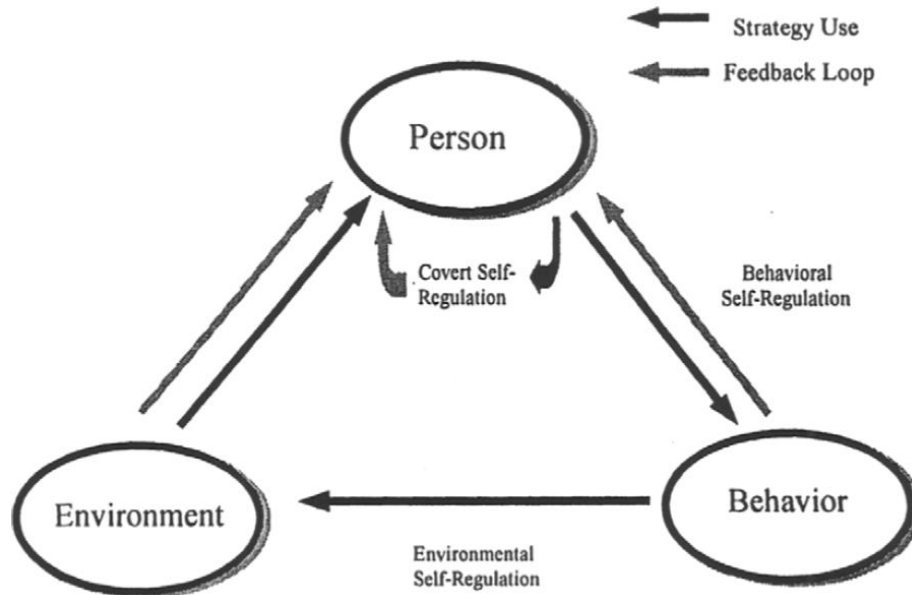
Source: Zimmerman (2000, p. 15)

Zimmerman's model of self-regulation provides the framework for understanding teacher autonomy. This model emphasizes the importance of planning, action, and reflection in the development of autonomous teaching practices. By integrating such self-regulatory processes into their professional activities, teachers can enhance their autonomy, which will lead to tailored and more effective educational experiences for their students.

Hoffman and Pearson (2000) argue that there are three levels of teacher learning: knowledge-for-practice, knowledge-in-practice, knowledge-from-practice. This means that a teacher is in continuous professional development: learning in order to teach, learning during instructional practice and learning from experience. Engagement in ongoing learning, both formal and informal, may be essential for teachers' adaptation to growing educational demands and sustained professional development. Thus, fostering environments that support autonomy and encourage teachers to explore, reflect, and innovate throughout their careers, can be relevant.

From an historical perspective the concept of autonomy was sometimes presented as a dyad (Willner, 1990). On the one hand, in the light of more recent research, independence is associated with isolation and alienation, "eggcrate mentality". On the other hand, in the light of more recent research, independence involves collaborative decision-making and the liberty to make professional choices. These contradictory definitions of autonomy in time take us to what Vangrieken et al. (2017) define as a contradictory relationship with collaboration since the authors argue that teacher autonomy is often linked to independence and individuality, thus excluding collaboration and collaborative work by definition.

Associating autonomy to independence, it is claimed, may generate a negative attitude towards collaboration because teachers may view it as a risk to their autonomy (Moolenaar, 2010; Vangrieken et al., 2015). As it was previously stated, teachers can feel and actually be isolated from their peers. This leads to a sense of individual autonomy and independence or separation from others. Anderson (1987) and Lortie (2002), through his 'egg-crate' school metaphor, associate teachers' autonomy with teachers' isolation because of the traditional school organization. However, as Vangrieken et al. (2015) argue, this idea of autonomy and isolation contradicts the significant increase of collaboration policies within institutions. As a consequence, there is a difficult and complicated, occasionally much contradictory, relationship between autonomy and collaboration (Vangrieken et al., 2015), which goes back to what Sacks and Eisenstein (1979) claimed, that to be isolated in a classroom without collegial interaction or meaningful feedback is not the intended spirit of autonomy. The challenge then lies in integrating the desire for individual action with the benefits of collaborative engagement, since professional development and innovation require environments that support both autonomy and collaboration. If this balance is fostered, a culture of mutual support and shared learning will improve teaching quality.

Moomaw (2005) further points out that what seems like autonomy to one teacher may seem like isolation to another. A lecturer can see autonomy as a way to achieve considerable freedom from intrusion or supervision, while another can

view it as the liberty to improve collegial relationships and accomplish projects and responsibilities that expand outside the classroom.

According to Frase and Sorenson (1992) some teachers prosper on autonomy, while others understand it as a way for leaders to avoid their responsibilities. Sacks and Eisenstein (1979) referring to a teacher's answer to what autonomy is, highlight the teacher's view that it is trusting own capacity to do what they want, frequently assuming valuable and innovative steps to fulfil their own objectives and ambitions. Autonomy is, in the view of this teacher, something very personal, the feeling that they have power and control. Hence, autonomy can foster a sense of empowerment among teachers. When understood as the ability to innovate and make independent decisions, autonomy can impact teachers' sense of professional efficiency and job satisfaction. However, autonomy should also serve both personal and collective goals within the learning community.

Along these lines of reasoning, Willner (1990) argues that each teacher pursues autonomy with different determination. Some instructors need assistance and supervision and do not want autonomy. Willner goes further to conclude that even in schools where shared decision making is promoted, there may be low participation. Teachers with specific types of personalities would rather not want to make decisions on significant matters but would choose to be informed about what to do (Willner, 1990). Encouraging autonomy should not be a one-size-fits-all approach but rather an approach that aligns with each teacher's needs, preferences, and professional goals.

However, Firestone and Pennell (1993) distinguish autonomy from participation in decision making, arguing that these two notions are completely different. The difference has to do with the areas a teacher can influence, such as classroom decisions but not participation in decision-making at the school level. Autonomy in the classroom is essential, but it should be complemented by opportunities for teachers to engage in broader decision-making processes within the school. By fostering both autonomy and participatory governance, schools can create a more inclusive, democratic, and empowering professional environment for teachers.

Autonomy is essential for fostering a sense of professional identity among teachers. It allows teachers to explore innovative teaching methods and tailor instructional approaches to student needs. However, without a supportive collegial environment, autonomy can lead to isolation, since lecturers may find themselves working alone, separated from the collaborative networks that may enhance their practice and professional growth.

On the contrary, teacher isolation can interfere with the exercise of autonomy. When lecturers feel isolated, they do not have the collegial support and the communication with peers that may improve autonomous decision-making. Exchanging ideas, having feedback from colleagues and engaging in collaborative reflection may be very important for validating and improving autonomous practices. Thus, isolation can limit collaboration and also reduce the full potential of autonomy in enhancing teaching and learning. A close relationship between autonomy, isolation, and collaboration should exist. Thus, as it was previously stated, institutions should foster environments that encourage autonomy, but also collaboration. By doing so, schools can help teachers to recognise the benefits of autonomy enhancing, at the same time, their ability to make informed, reflective decisions that contribute to teaching and learning.

To avoid teacher isolation and promote teacher autonomy, HEIs must help to create an environment where independence and collaboration among lecturers are promoted. This may involve developing opportunities for regular collaboration among lecturers, such as professional learning communities, interdisciplinary projects or collaborative research initiatives. Such initiatives encourage teachers to share their autonomous innovations, to seek feedback, and to engage in collective problem-solving, thereby reducing negative feelings of isolation.

Teacher isolation will be addressed in the next section to give an understanding of the topic and its relationship with teacher autonomy and teacher collaboration.

2.1.1. Teacher isolation

Literature on teacher isolation has been growing but the concept of 'isolation' needs to be approached in its many meanings. Biordi and Nicholson (2013)

define isolation as being apart from other human beings. They define social isolation as "the distancing of an individual psychologically, physically or both from his or her network of desired or needed relationships with other persons" (Biordi & Nicholson, 2013, p. 85). They suggest (citing Nan Lin & Ensel, 1986) that isolation contains four layers. The inner layer is the relationship the person has with himself/herself and how the individual sees himself/herself integrated into the overall bi-polarities of belongingness and isolation. The second layer incorporates the individual's friends and close relationships. The next layer consists of work environment and encompasses the institutions within which the person connects and integrates, such as work, church or entertainment. The outer layer refers to the connection of the individual to the wider community (Bissessar, 2022), as showed in Figure 4.

Figure 4

Teacher isolation layers
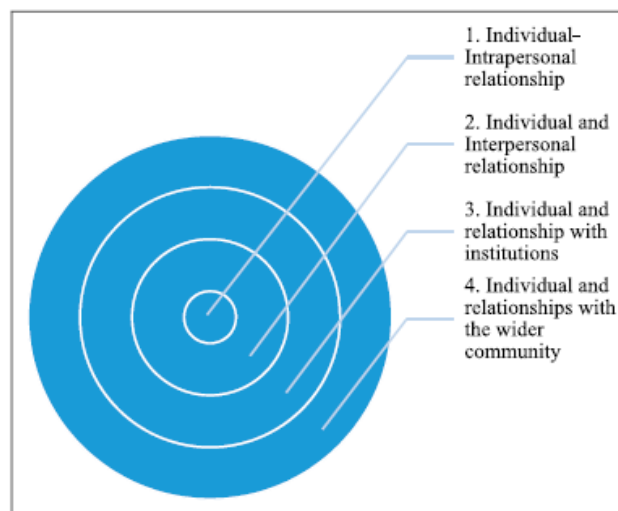
Source: Bissessar (2022, p. 117)

Little et al. (2003), for example, claim that "teachers are usually alone when they examine student work and think about student performance" (p.185) referring to the assessment task that teachers do on their own. Isolation could also refer to feeling isolated from other teachers in terms of understanding what they are doing, feeling isolated because feeling unsupported or feeling isolated from administration when school conditions hamper teaching and learning. These feelings and situations can be applied to professionals in a new job or isolated

teachers from one specific area working alone among other colleagues from a different field. As an example, this might apply to an ESP teacher working in a technology and management school in higher education where most teachers relate to common specific scientific areas that have little in common with the humanities or language teaching area. It can be really hard for a teacher from a different area (English, for example) to find opportunities for collaboration due to a lack of common academic discourse or similar academic and career interests. The specific technical content of the subjects makes it even harder for an ESP teacher to understand the content they use in order to prepare ESP classes and materials for students in the same curricular programme. As a consequence, there is the feeling of being completely isolated and alone.

Lortie (2002) describes three types of isolation. The first is egg-crate isolation, defined as the physical separation of classrooms. The school physically planned in a way that teachers lack contact with each other, they simply enter the room, close the door and find themselves alone with the students. The second is psychological isolation, which has to do with teachers' response to mutual interactions. And the third is adaptive isolation, related with the overwhelming state of mind when teachers struggle with new challenges and demands.

Lortie's description of isolation provides a framework for understanding the different forms of isolation teachers may experience. It highlights the importance of addressing both the organizational and emotional aspects of isolation in order to support teacher well-being and professional development.

Ostovar-Nameghi and Sheikhahmadi (2016) claim that the school structure perpetuates professional isolation, causing constrains for teachers to observe, and interact with, each other. Other authors think that organization, time and planning are a cause of professional isolation. The schools' egg-crate structure and the condensed and full teachers' timetables make collaboration among them very difficult (Cookson, 2005). Other causes for teacher isolation are suggested in the literature. Teachers work alone with discrete student groups in separated classrooms. There is little time to engage in dialogue with colleagues about the teaching practice. Usually in a school only one or two experts for each subject are hired, who have few opportunities to talk about student learning and share problems, concerns and accomplishments (Tower & Gallagher, 2008). Another

reason is that interaction among faculty members is most of the times limited to cordial everyday talk instead of conversations about student learning or new educational approaches, which may accentuate professional isolation among teachers (Hadar & Brody, 2010).

To avoid isolation, institutional changes that enable individual interactions and different types of collaboration among teachers may be needed. Addressing teacher isolation requires a holistic approach that considers the structural, temporal, and cultural dimensions of educational institutions.

Peplau et al. (1982) argue that 'normal' people's behaviour is to search for reasons and seek possible explanations for their loneliness. Accounts of loneliness can be categorized into three different elements. The first is related with the fact that isolated people are usually able to point out the facts that signalled the beginning of their loneliness. The second element is when people examine the causes of their isolation, which normally include characteristics of the self (for example, being too shy) or of the situation itself (for instance, being in a place where it is difficult to meet new people). Finally, isolated people usually know what sort of changes would lessen their isolation (Peplau et al., 1982).

Peplau et al.'s findings suggest that addressing teacher isolation requires both understanding its causes and implementing targeted interventions that support teachers' social and professional networks.

Schlichte, Yssel, and Merbler (2005) argue that an antidote to feelings of loneliness and isolation may well be opportunities for socialization and collegiality and in a teacher's career there are many opportunities for voluntary collaborative work with other teachers.

While professional isolation leads to a state of burnout and a feeling of extreme helplessness, a collaborative atmosphere is conducive to professional growth and job satisfaction.

However, relatively few can say with certainty what teacher collaboration looks and feels like, how to determine if the structural, procedural, and inter-professional relationships within teacher teams are healthy, or how to make them better (Gajda & Koliba, 2007), which is what will be analysed next.

All these definitions and reflections shed light on the nature of teacher autonomy. This understanding provides ground for exploring how autonomy undertakes a different meaning in the sphere of Higher Education, where teachers become curriculum designers rather than mere curriculum representations, as we shall now describe.

2.1.2. The autonomous teacher in Higher Education

Literature on teachers' autonomy in the specific context of Higher Education is scarce. As mentioned above, in this context teacher autonomy may imply that teachers become curriculum designers and not just curriculum representations (Castle, 2004). Literature also suggests that more autonomous teachers feel more job satisfaction (Davis & Wilson, 2000; Pearson & Moomaw, 2006), experience better results in education (Little, 1995), and tend to avoid stress, professional discouragement and attrition or burnout (Pearson & Moomaw, 2005). Pearson & Moomaw (2006) argue that autonomy is needed for a teacher's perception of professionalism.

Marshall (2019) in a study about teacher autonomy in English communication courses in Japanese universities states that, on the one hand, most teachers perceive themselves as able to be creative, to select activities, to choose teaching approaches and strategies, to control the use of classroom space and to control scheduling for their own classes. On the other hand, most teachers believe that what they teach, when, and how content is imparted, the skills taught, the materials and resources used, the requirements and guidelines adhered to, the methods, and the objectives are largely determined by them. Marshall concludes that at HEIs the majority of lecturers have a high level of teaching autonomy, no matter what their position or contractual condition.

Yassine-Diab and Monnier (2013), who conducted a pilot study on professional autonomy of French Higher Education language teachers, questioned higher education language teachers about what professional autonomy meant for them and to what degree it could affect their instruction. Results indicate that teachers feel that "autonomy is power" (p. 846). They also feel that being able to control or being able to give control are both important, since autonomy with lack of control

is not relevant or important. Autonomy without the corresponding recognition of effort holds no value or worth. Another conclusion shows that autonomy without meaningful human connections is inherently sterile. The significant level of autonomy that HE lecturers possess, may empower them to tailor their teaching methods to the needs of their students and their own pedagogical goals.

The emphasis on control and the need for meaningful relationships underline the requirements for effective autonomy in Higher Education and may suggest that autonomy by itself is not enough and that an encouraging environment is needed.

In the few studies developed about Higher Education Institutions there is the common conclusion that lecturers possess a high level of autonomy. Lecturers can choose contents, activities and materials, assessment, and the way they manage classes and classrooms. Contrarily to the teachers who work at other educational stages and who have a very low degree of autonomy, everything being directed by government and managed by schools' management teams, at HEI level teachers are given autonomy to make pedagogical and scientific/ academic decisions that concern course syllabi, resources, methods and assessment.

However, according to Gavriliuk and Lakhno (2013) what particular skills and circumstances are required for teachers to be autonomous and what influences teachers' beliefs of their level of autonomy remain open questions. Gavriliuk and Lakhno's observation points to the ongoing need for research about the conditions that can enable a profounder understanding of teacher autonomy in Higher Education.

For Dikilitas (2020), as seen in Figure 5, which reviews several authors on autonomy, there are attributes that autonomous teachers have in common and there are capabilities that announce their readiness for autonomous professional engagement. The qualities highlighted by the author are the following: being willing and capable of being independent from institutional structures and eventually influencing them; acting and making professional decisions and choices; making transformations and reflecting upon choices and decisions; being willing to take risks and make efforts; and being responsible and able to

control their affections and cognition. These qualities make teachers capable of autonomous attitudes towards their job and teaching environment.

When it comes to manifestations in practice of these attributes, collaboration plays a role in deciding whether to seek help from other teachers, as does cooperation with others to upgrade own skills. Another capability of the autonomous teacher is critical reflexivity about classroom dilemmas and tensions and own decisions regarding classroom instruction and management. The autonomous teacher experiments with learning situations and is attentive to students' needs, interests and values. Lastly, the autonomous teacher is able to create a space for professional freedom exempt from outside interference.

Figure 5

Attributes of autonomous teachers

Autonomous teachers are characterized by qualities such as:
– being willing and able to exert control over educational settings (Vieira, 2003)
– having inner desires to influence the environment (Mackenzie, 2002)
– having the power to act, influence, make decisions and choices, and take stances related to their work and professional identities (Vähäsantanen, 2015)
– being transformative and critically reflective (Vieira et al., 2008)
– being reflective, risk-taking, and effortful (McGrath, 2000)
– being personally responsible, continuously reflective and analytic, and affectively and cognitively controlling (Little, 1995)

Autonomous teachers are able to:
– develop a collaborative attitude (Vangrieken et al., 2017)
– react to dilemmas or tension in the classroom (Wermke & Höstfält, 2014)
– make personal choices and collaborative decisions (Zeng, 2013)
– struggle against various constraints, be self-critical (Benson, 2010)
– prioritize when one becomes self-aware, produce something oneself, and make decisions (Smith & Erdoğan, 2008)
– develop internal capacity to grow and to widen the space of professional freedom (McGrath, 2000; Benson & Huang, 2008)
– develop a personal sense of freedom from interference or in terms of teachers' exercise of control over school matters (Usma Wilches, 2007)
– develop appropriate skills, knowledge, and attitudes for oneself as a teacher in cooperation with others (Smith, 2003)
– empower themselves to create "spaces and opportunities for manoeuvre" (Lamb, 2000, p. 128)
– make informed choices based on an awareness of their needs, interests, and values (Koestner & Losier, 1996)
– permit choice in learning situations, make pupils responsible for the activities, and allow and encourage learners to begin to express who they are, what they think and what they would like to do (Kenny, 1993)

Source: Dikilitaş (2020, p. 55)

Averill and Major (2020) examine the reasons that drive HE lecturers to innovate in their teaching in a study that implies that enhancing lecturers' autonomy is necessary for initiating innovative practice. Lecturers are motivated to innovate

when they feel they have the freedom to control their teaching methods and approaches to attend to students' needs and their own teaching aims. The commitment and motivation to embrace innovative approaches sometimes runs against challenges such as institutional frameworks and procedures, lack of access to specific technologies and the time needed to implement new teaching approaches. As a consequence, institutional support is needed to foster autonomy and encourage innovative teaching practices. Similar results were found in this research study (see Chapter 6).

The insights from Averill and Major's study highlight the relationship between autonomy, innovation, and institutional support in Higher Education. The challenges identified emphasize the need for institutions to provide the resources and flexibility needed to support innovative teaching practices.

Autonomous teachers can collaborate with others, react to unexpected events inside their classroom, make personal decisions and choose to have collaborative attitudes and overcome difficulties. They are self-critical, prioritize and make decisions, they have the ability to develop and to expand professional freedom, they develop cooperative skills, they empower themselves and encourage students to express themselves. These characteristics are essential for developing teachers' autonomy.

Kamii (2000) claims that autonomy is the capability, not the right, to be self-governant. In fact, according to Gavriliuk and Lakhno (2013), giving teachers freedom to do as they will does not necessarily lead to professional development and demonstration of professional autonomy by university teachers. These authors provide the example of USA universities which, despite actively promoting teacher autonomy, show a deficit of highly skilled lecturers. And thus, they argue that teacher professional autonomy should be established intentionally. Since in the USA, students can elect courses across the curriculum at university and given that universities compete for the best students, the authors conclude that professional competition is one of the most significant issues affecting a teacher's motivation for professional development and professional autonomy (Gavriliuk & Lakhno, 2013).

In their study about professional autonomy of university teachers Gavriliuk and Lakhno (2013) define teacher professional autonomy as "freedom for" which implies social interaction, personal development, and self-actualization. They consider teacher autonomy as an important factor in preventing teacher attrition. The authors propose the following definition of teacher professional autonomy:

> Teacher professional autonomy is based on the responsibility and relative independence from external factors. It involves teacher capacity to intensify one's own professional activity and personal development, making intellectual and moral decisions by considering various perspectives, creating one's own professional goals, making free choices of educational forms, means, methods and content, and self-monitoring one's own professional experience (Gavriliuk & Lakhno, 2013, p. 460).

The concept of teacher autonomy in Higher Education represents an essential dimension of the teaching career, as evidenced by the scarce but valuable literature in this specific context. The attributes of autonomous teachers, as identified by Dikilitaş (2020), encompass a broad spectrum of qualities that empower educators to feel empowered to teach better and to innovate, harnessing cooperation and collaboration with colleagues when it is felt beneficial.

However, the delicate balance between autonomy and external influences remains a topic of ongoing debate, as Gavriliuk and Lakhno (2013) argue, particularly in educational systems that actively promote autonomy. As we continue to explore the concept of teacher autonomy, it is clear that it plays a key role in shaping lecturers' experiences in Higher Education.

Literature on teacher autonomy in HE may suggest that supporting lecturers to use their autonomy may be key to achieve quality and innovation in Higher Education.

2.2. Collegiality

Collegiality is another key concept that needs to be explored in connection with teacher collaboration. Collegiality supports professional growth, fosters teamwork, and positively impacts both teacher satisfaction and student outcomes. It also creates an environment conducive to continuous improvement and innovation in educational institutions.

Collegial relationships provide teachers with the opportunity to learn from one another. Operating within a collegial environment not only fosters teamwork and synergy but also promotes professional self-reflection, empowering teachers to assess and refine their own practices. A culture of collegiality fosters a positive atmosphere within the school, where teachers feel valued and connected to their peers, which can in turn, influence the overall school culture and climate. Above all, collegiality can foster collaboration and collaborative relationships among teachers, which is the main topic of this dissertation.

The procedure followed for a systematic literature review was to assess the present state of the art of the "collegiality" research stream, to answer unsolved research questions or to identify areas of high importance that are underreported in literature. A set of explicit replicable procedures were followed in order to reduce the bias in the analysis (Page et al., 2021). A process to evaluate the research on collegiality was undertaken. A search in the WoS and in the Scopus databases was conducted for document type "articles", published in the English language, with the word "collegiality" in the document's title and the terms "higher education" or "faculty" or "university" in the articles' title, keywords and abstracts. This search returned 47 documents in the WoS database and 79 documents in the Scopus database. An analysis of the document list was conducted, and 41 documents were found duplicated and removed from the analysis. The remaining 88 documents were subject to further analysis to assess if they fit the criteria of analysis, i.e., if they represented an empirical study about collegiality in higher education institutions. During this process, 32 documents were retained for the analysis and the remaining excluded.

Systematic literature reviews are usually conducted with one of two objectives: to provide theoretical background for future research or to present insights

regarding a field of research or a particular research question (Okoli & Schabram, 2012). Considering the purpose of this study, the literature analysis to the collegiality research stream intends to provide background for the development of a research model including collegiality, particularly, among higher education teachers and its relationship with teacher collaboration in the context of ICLHE.

According to literature, collegiality and teacher collaboration are closely connected in the field of education (Grimmett & Crehan, 2013; Kelchtermans, 2006). Collegiality refers to the spirit of cooperation, mutual respect, and collaboration among colleagues, particularly within an educational setting. This concept is fundamental to fostering effective teacher collaboration (Kelly & Cherkowski, 2015).

2.2.1. Defining Collegiality

For many institutions, the end of the academic year often brings with it a shared and increasingly anxiety-provoking rite: getting initial news of student matriculation/enrolment numbers for the next academic year from the admissions office. (Dean & Forray, 2018). This is a pressuring point for institutions, which will in turn pressure teachers and cause a very unstable and stressful working environment. Growing emphasis on managerial practices results in a reduction of collegiality.

From the perspective of higher education institutions, aspects regarding social relations, productivity or output in work teams have been widely addressed in literature, particularly under the collegiality research stream.

To begin with, the definition of the term collegiality is crucial. The term collegiality refers to cooperative relationship of colleagues. This definition involves three main terms, "cooperative", meaning that it involves some sort of cooperation, in a "relationship" between "colleagues", in this specific case, higher education teachers. The term collegiality involves cooperation among colleagues and entails their relationships. Nevertheless, this definition is somewhat incomplete, particularly in an academic environment. The Canadian Association of University Teachers (2021) defines collegiality as the "full participation of academic staff in the institutional processes that shape the conditions of academic work", further

adding that it "includes, but is not limited to participation in all governance structures, institutional systems of peer review, and decision-making process at all levels", meaning that "collegiality is a fundamental condition of academic work" (p. 1).

Following this idea, four models can be applied to describe and understand higher education institutions: 'collegial', 'bureaucratic', 'political' and 'anarchic' (Birnbaum, 1988; Birnbaum & Edelson, 1989). According to these authors, the collegial institution refers to a sense of community that involves intimate interaction among members of the institution and entails sharing similar values regarding the colleagues and the institution's purpose. Due to its size, the bureaucratic institution creates numerous rules and regulations. Such a number of regulations usually leads to confusion in faculty and among staff about the purposes of the institution, frequently causing fragmentation of norms and values. Concerning the political institution, authors depict it as a system where power is both diffuse and decentralized. Finally, the anarchic institution is seen as an organization where the goals are not clear, leading to uncertainty about how the place operates and predictions about the process of decision making (Birnbaum & Edelson, 1989).

Departing from the above framework, collegiality in higher education involves the University governance and all the key participants in the University's life within which teachers play a relevant role. Furthermore, the collegial college is generally, by necessity, small (Birnbaum & Edelson, 1989). This type of institution opposed to the remaining types of institutions (i.e., bureaucratic, political, and anarchic) can have different and diverse sizes, yet are frequently seen in larger institutions, particularly the bureaucratic and political ones. This does not mean that small institutions are free from presenting one of these latter forms. However, according to the Canadian Association of University Teachers (Canadian Association of University Teachers, 2021), collegiality implies an animating sensibility that is vital to the academic mission and is dependent from the support and autonomy of the academic staff. Moreover, the collegiality process must:

> (a)dhere to principles of democracy, procedural fairness, and transparency; allow for the expression of a diversity of views and opinions, protect participants so that no individual is given

inappropriate advantage (for example, due to power differentials) with respect to decisions; ensure inclusiveness so that all who should be participating are provided the opportunity to do so; and be secured by the rights to academic freedom and to equity in the workplace (Canadian Association of University Teachers, 2021).

Despite the above descriptions, there is no unanimous and easy definition of collegiality as, depending on the context, i.e., from one university to another, the practice of collegiality diverges (Burnes et al., 2014). According to Smyth (1991) collegiality implies teachers discussing and cooperating with other teachers, which represents a more minimalist understanding of the collegiality definition by the Canadian Association of University Teachers. It also puts it at an individual level such as the satisfaction with co-workers and interpersonal satisfaction (Donohue, 1986; Victorino et al., 2018; Volkwein & Parmley, 2000), sense of community (Barnes et al., 1998; Victorino et al., 2018) or recognition and support (Olsen et al., 1995; Victorino et al., 2018).

Overall, literature about collegiality indicates several perspectives, some of which point toward a three-way definition: respectful conduct, the academic guild system and the form of decision making (Macneil, 2016). Nevertheless, collegiality may also be represented in a two-way perspective. On the one hand, through a micro or individual level perspective and, on the other hand, on a macro or institutional level. The former through the interactions between individual people and their experiences, involving sharing, trust and participation instead of distrust, control and retribution (Smyth, 1989). In educational institutions, collegiality involves a mindset in which all the participants (teachers and learners) process, share and connect with each other in a way that all of them are aware of the connections, leading to a sense of empowerment and emancipation. Collegiality implies that teachers and learners share a commitment about assumptions and perspectives they hold about the nature of their work which binds them together, improving their shared work.

The institutional perspective is incorporated in the process of making decisions in higher education institutions and is related to the set of rules that drive institutions' governance. Traditionally, institutions present a collegial decision-making process, giving teachers great autonomy (Burnes et al., 2014). The

advent of a set of restrictions to collegiality through the increasing central power of administration and the decrease of professionals' autonomy (Santiago et al., 2006) undermined the conception of higher education institutions as autonomous, self-directing and peer-review organizations (Newson, 1993) and weakened the overall work conditions (Barry et al., 2001; Olaskoaga-Larrauri et al., 2019; Roberts, 2013).

From the macro, or institutional perspective, discussion about collegiality has been based on the argument that higher education institutions are being commercialised and subject to transition from collegialism to bureaucratisation, standardisation or managerialism (Olaskoaga-Larrauri et al., 2019). This transition fits, at least in part, within the scope of Birnbaum (1988)'s model that can be applied to describe four types of higher education institutions, i.e., 'collegial', 'bureaucratic', 'political', and 'anarchic'. However, it is opposed to the decentralized aspects of collegiality, such as academics' freedom, empowered within the decision-making process as it is being undercut by the financial and commercial attention (Buchbinder, 1993) of the managerialism centralised nature (Burnes et al., 2014; Murphy, 2019) which undercuts the autonomy of academics.

Despite the numerous definitions of collegiality, including the different types of perspectives through which the concept can be approached, or including a wider or narrower scope, there is some type of consensus regarding the main aspects seen in more collegial institutions: Collaboration between university and administration; being available and agreeing to serve on committees; performing tasks targeting the good of the group; carrying out all relevant responsibilities, respecting decision-making processes; communicating with others respectfully and in a constructive, supportive and professional way; all of which are considered major characteristics of collegial institutions (Cipriano & Buller, 2012).

2.2.2. Collegiality in Higher Education Institutions

Literature regarding collegiality in higher education institutions is extensive. This section follows a set of procedures adopted in the analysis, which will be used to review literature regarding collegiality in higher education institutions.

Overall, literature analysing collegiality in higher education institutions has focused on a multitude of aspects related to the interpersonal relationships between academics, including collaborative work, the degree of autonomy (micro or individual perspective), and the leadership type within institutions (macro or institutional perspective), as previously mentioned.

The perspective involving interpersonal relations between people (micro perspective) has a wide scope and mostly focuses on collaboration between colleges and the adopted procedures. For instance, Uchiyama and Radin (Uchiyama & Radin, 2009) developed a qualitative study regarding the implementation of a curriculum mapping by members of university. They found that it positively affected the emergence of clusters of collaboration and collegiality across the study's data source. Furthermore, the interaction among the project participants led to increasing collaboration and collegiality and enabled participants to share knowledge and beliefs about the teaching and learning process.

Claypool and Mershon (2016) tested hypotheses about the relationship between the degree of departmental diversity and friendliness, collegiality and productivity in every United States' faculty of political science departments. They observed that male faculty members tend to view their departments as more collegial and more tolerant than did female ones. As a result, greater female presence is associated with less positive reports on the collegiality of departments. However, as the number of minorities in department increased, collegiality and tolerance within the department also improved.

Murphy (2019) proposed a mechanism for assessing how the processes involved in developing blended courses is managed and realized that the development of these courses can be aligned with a managerialist-collegiality-neo-collegiality frame. Additionally, Murphy also concluded that the presented blended learning management gives insights for staff to identify how the chosen managing

approach could affect their processes, working-relationships and students' learning experience.

Koskenranta et al. (2022), in search of the best collegiality experiences and factors affecting health care educators in educational institutions, used a mixed methodology to perform a systematic review and concluded that "networking, collaboration, mentoring, mutual communication and the consideration of professional ethical issues" (p. 1) are among the main factors preserving collegiality among teachers. They further added that educational institutions should establish measures targeting collaboration among teachers and emphasised the role of collegiality in the education environment.

Popplewell at al. (1998) also using a qualitative analysis to data from journal entries, surveys and interviews, describe collegial relationships in higher education. They noticed two main themes bordering this topic: the characteristics of collegial relationships, such as compatibility, communication and commitment and the benefits of collegiality, such as productivity, quality and personal growth in higher education.

Hernandez-Maldonado et al. (2013) present an experiment concerning the implementation of the methodology of collegiate work in teaching subjects in the engineering area. Results indicate that developing a collegial mode is characterized by the growth of diversification of collegiality results, including

> the early inclusion of students in real learning environments through the development of interdisciplinary project research participation, transition of courses to distance learning, the partnership and peer evaluations, the development of opportunities for exchange of ideas between internal and external academies, implementation of assessment tools at the institutional level, between other (p. 4364)

Regarding the second perspective, or macro perspective, literature has been mostly focused on the discussion about collegiality and managerialism in higher education. For example, in a qualitative study regarding the increase of managerialism in higher education institutions in Portugal, Santiago et al. (Santiago et al., 2006) argue that, despite managerialism being present in the academics in charge of the overall governance of Portuguese universities, these

academics seem to be hesitant managers, with conflicting expectations and frequently desiring to spend more time on other things than managerial tasks. Despite managers' hesitance, these authors have found evidence of existing managerialism, particularly regarding organization and efficiency, strategic changes and stability of the university units' operations. On the other hand, the lack of experience in the administration of basic academic units and dispersion implied tensions which ultimately could lead to a more centralized process of decision and, consequently, to a more managerialist and bureaucratic control over the overall aspects of the academic work.

Similarly, Tight (2014) explores how collegiality and managerialism have been conceptualized, presented and researched in higher education and presents how collegiality and managerialism have been conceptualized in higher education literature. The author observed that these two concepts are not dichotomous and both have a role in the future of higher education. The same research line is followed by Kwiek (Kwiek, 2015), who focuses on university's governance and the applicability of theoretical governance models to the Polish higher education system. He concludes, contrarily to a less collegial system in Western Europe universities, that the Polish universities operate as a traditional collegial model seeing universities as a community of scholars. According to Kwiek, the Polish academia is based in the power of academic collegial bodies and the influence of collegial bodies on academic decision process is the highest in Europe. On the other hand, the power of the government and external stakeholders is the lowest.

Amaral et al. (2013) present a descriptive implementation of New Public Management (NPM) in the Portuguese higher education institutions. They noted that, among its traits, the concentration of power in central administration, reinforcement of personal responsibility, presence of external stakeholders in universities governance, use of performance contracts and a new system of institutional programme accreditation implied a dismissal of collegiality. Furthermore, the increasing privatisation of institutions, by allowing universities to become foundations under private law, reforms of the status of civil servants, which are in line with an increasing commercialisation of the academia (Olaskoaga-Larrauri et al., 2019) and a shifting focus on commercial and financial

aspects of higher education (Burnes et al., 2014; Murphy, 2019), implied a dismissal of collegiality in higher education institutions.

Olaskoaga-Larrauri et al. (2019) present similar conclusions regarding the Spanish higher education sector. They evaluate the consequences of changes in the Spanish higher education sector and its effects on job satisfaction among teachers. It shows a diminishing job satisfaction over the period in which the changes took place due to a related growth of standardisation and a loss of the principles of collegiality. Further negative effects on coordination between teaching staff and the assessment of the quality of their work are also among the main consequences with negative effects on collegiality.

Želvys et al. (2021b) in a paper focused on the perceptions of academics about managerialism in Lithuanian higher education system, investigate changes in the governance of these institutions. Governance policies are described as shifting to a market orientated paradigm, i.e., universities are perceived to be highly managerial, pointing to high managerialism, which in turn leads to a lack of collegiality in decision making.

Similarly, Kok et al. (2009) highlight the growing financial considerations and commercialisation of university. These authors also identify strong adherence to scholarly integrity and altruistic tendencies, showing that despite the growing role of a managerial perspective in higher education institutions, there is an embedded institutional and individual culture, more collegial, further highlighting the scholarly integrity and conduct within the collegial paradigm.

From all these studies, it can be inferred that discussion about collegiality and managerialism develops under the assumption that an increasing managerialism leads to a decrease in collegiality. The adoption of business and management principles in higher education institutions implies that professionals in higher education institutions behave less collegially. However, that does not mean that both principles are completely opposed. As a matter of fact, the discussion regarding the application of business and management principles to higher education institutions, according to university professionals, contributes to the achievement of organizations' objectives, in spite of their degree of resistance to

the introduction of these principles and a more positive attitude towards collegiality and democracy (Omar & Pereira, 2020).

Appendix 1 summarizes the empirical studies highlighting collegiality in higher education institutions, describing study reference, its main goal/short description, data and methods used and main conclusions. It highlights the dichotomy between an individual perspective of collegiality, based on the interactions and experiences among individuals, and the institutional perspective, which centres on the decision-making process.

Appendix 1 shows that both perspectives, the individual level and the institutional level, have been analysed from empirical literature. For instance, collegiality has been studied through a decision making level (Chong et al., 2018; Goebel et al., 2017; Hartley, 2010; Haviland et al., 2017; Hellawell & Hancock, 2001; Kok et al., 2009; Kwiek, 2015; Littlefair et al., 2019; Marini & Reale, 2016; McGrath et al., 2019; O'Connor & White, 2011; Ross, 1977; Yokoyama, 2006; Želvys et al., 2021b), particularly regarding the adoption of business management policies in higher education institutions decision making and overall governance, as opposed to a more democratic perspective shaped in the collegial decision making process. Furthermore, through an individual level, collegiality focuses on human relations among teachers, including their interactions, behaviour with each other, collaboration and autonomy (Bell & Thomson, 2018; Clark, 2013; Clarke & Reid, 2013; Congdon & French, 1995; Jeannin, 2017; Koskenranta, Kuivila, Männistö, et al., 2022; LaPointe Terosky & Heasley, 2015; Mignot-Gérard et al., 2022; Puranitee et al., 2022; Scoles et al., 2021; Stupnisky et al., 2017; Trigwell, 2005; Victorino et al., 2018; Zulkifly et al., 2021).

When evaluating the type of methodologies used in empirical studies about collegiality in higher education institutions, the analysis shows several relevant methods, including qualitative analysis of semi-structured or unstructured questionnaires (e.g., Alleman & Haviland, 2017; Bell & Thomson, 2018; Chong et al., 2018; Congdon & French, 1995; Haviland et al., 2017; LaPointe Terosky & Heasley, 2015; McGrath et al., 2019; O'Connor & White, 2011; Trigwell, 2005). Several studies use quantitative methods, particularly applying Likert type scales to a broad number of respondents, and several statistical methods, including structural equation modelling and regression analysis (Koskenranta, Kuivila,

Männistö, et al., 2022; Kwiek, 2015; Marini & Reale, 2016; Mignot-Gérard et al., 2022; Miles et al., 2015; Stupnisky et al., 2017; Su & Baird, 2017; Victorino et al., 2018) Mixed methods, that is, using both qualitative and quantitative methods, are also used in some studies. These types of analyses are very common and are usually characterised by a qualitative analysis of both unstructured or semi-structured questionnaires responses, and quantitative data, usually formed by Likert type scales (Puranitee et al., 2022; Ross, 1977; Trigwell, 2005; Želvys et al., 2021b).

Figure 6 shows a co-word analysis of the selected empirical literature about collegiality in higher education institutions. Co-word analysis represents a type of content analysis based on the analysis of the co-occurrence frequency of pairs of words in the corpus of text, to identify relationships between ideas and the underlying themes in the analysed texts (He, 1999). The main goal of this analysis is to identify networks of themes and, therefore, ideas (Callon et al., 1983). Co-word analysis is based on the premise that if words frequently co-occur, the underlying concepts are closely related (Zupic & Čater, 2015).

The 32 abstracts from the empirical studies included in Appendix 1 were analysed using VOSviewer software (Van Eck & Waltman, 2010) and a co-word map retrieved, depicted in Figure 6, representing three clusters of co-word occurrences.

Figure 6

Co-word analysis map
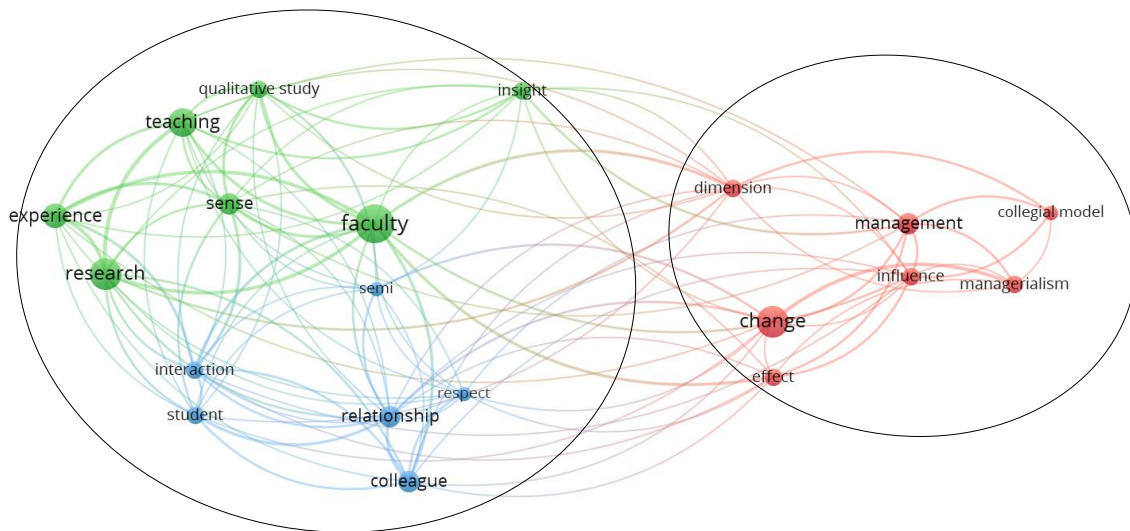
Source: Own elaboration

Figure 6 represents the co-occurrence of pairs of words. The performed analysis was computed. Words not fully inside the scope of the analysis were removed, such as 'article', 'extent', 'approach', and 'implication'.

The co-word network portrays three clusters representing the main group of ideas found in literature. Overall, this literature analysis shows that collegiality is generally analysed through two perspectives, an institutional view and an individual perspective or based on the relationships between individuals. Figure 6 shows something similar. The cluster depicted in red illustrates the institutional perspective based on the co-occurrences of words such as 'management', 'managerialism', or 'collegial model'. These words and the data from Appendix 1 present some evidence of the institutional perspective.

On the other hand, clusters green and blue focus on an individual perspective of collegiality, mainly due to the co-occurrence of words such as 'relationship', 'colleague', 'respect', 'interaction', 'sense', 'teaching', 'research', 'experience'. Despite presenting two clusters, the closeness between pairs of words shows some degree of proximity among the words of both clusters. Furthermore, terms such as 'qualitative study', 'research', 'semi' (which is part of the term semi-structured), and 'insight' depict the empirical nature of the analysed studies and

provides information, including about the most used method in empirical research concerning collegiality in higher education institutions, which is qualitative analysis, mainly based on semi-structured questionnaires.

The co-word analysis presented in Figure 6 has illustrated the diverse perspectives and themes within the empirical literature on collegiality in higher education institutions. This analysis has unveiled the complex network of concepts and relationships present within this field. The three distinct clusters identified in the co-word map represent the primary strands of thought prevalent in the analysed literature.

This co-word analysis not only shows the diversity of perspectives but also the connection of ideas in the field of collegiality. It underlines the need for a holistic understanding that encompasses both institutional and individual aspects in relation.

Collegiality is usually linked to an institutional view and an individual perspective based on the relationships between individuals. Literature does not generally relate it with collaboration. However, the results of this study (see Part Two) show that collegiality influences teacher collaboration.

2.3. Language Competence

Sokolova (2012), citing van Ek (van Ek, 1986), defines linguistic competence as "knowing how to use the grammar, syntax, and vocabulary of a language" (p.81). This competence encompasses phonological, lexical, and grammatical skills, as well as language awareness, which refers to the knowledge of how the language works.

Language competence is most of the times associated to language teaching and not in particular to content teachers using a foreign or second language to teach. However, research into language teaching in the context of ICLHE is applicable to both language and content teachers. Thus, while the following research studies focus exclusively on language teachers, it is desirable to extrapolate their results also to competences, skills and attitudes that should be shared by ICLHE teachers and EMI teachers.

Richards (2010) explores what skills, knowledge, values, attitudes and goals do language teachers need, and how can they be achieved. The paper analyses ten fundamental dimensions of skill and expertise for teachers in language teaching: language proficiency, content knowledge, teaching skills, contextual knowledge, language teacher identity, learner-focused teaching, specialized cognitive skills, theorizing from practice, joining a community of practice, and professionalism, as shown in Table 7 that summarises key aspects.

Table 7

Ten fundamental dimensions of skill and expertise for teachers in language teaching

Ten fundamental dimensions of skill and expertise in language teaching	
Language Proficiency	- native-like proficiency not necessary
	- competencies needed for effective language teaching: "to comprehend texts accurately, to provide good language models, to maintain use of the target language in the classroom, to maintain fluent use of the target, to give explanations and instructions in the target language, to provide examples of words and grammatical structures and give accurate explanations (e.g. of vocabulary and language points), to use appropriate classroom language, to select target-language resources (e.g. newspapers, magazines, internet websites), to monitor his or her own speech and writing for accuracy, to give correct feedback on learner language, to provide input at an appropriate level of difficulty and to provide language-enrichment experiences for learners" (Richards, 2010, p. 103)
	- threshold level of proficiency for non-native speakers
	- discourse skills for native speakers
	- level of language proficiency impacts on confidence
	- addressing language proficiency needs of non-native English teachers
Content Knowledge	- essential aspect of language teaching
	- difference between 'knowledge' and 'skill'
	- disciplinary knowledge and pedagogical content knowledge

Ten fundamental dimensions of skill and expertise in language teaching

	- pedagogical content knowledge prepares teachers to: "understand learners' needs, diagnose learners' learning problems, plan suitable instructional goals for lessons, select and design learning tasks, evaluate students' learning, design and adapt tests, evaluate and choose published materials, adapt commercial materials, make use of authentic materials, make appropriate use of technology and evaluate their own lessons" (Richards, 2010, pp. 105–106)
Teaching Skills	- fundamental teaching competencies for novice teachers: "opening the lesson, introducing and explaining tasks, setting up learning arrangements, checking students' understanding, guiding student practice, monitoring students' language use, making transitions from one task to another, ending the lesson" (Richards, 2010, p. 107) - cognitive dimension
Contextual Knowledge	- understanding teaching and learning social and physical context - teaching involves understanding the dynamics and relationships within the classroom and the specific rules and behaviours of a particular context - helps teachers to understand and respond to the school's objectives, mission, management style, resources, curriculum, learning programmes, and school teachers and students' characteristics
Language Teacher Identity	- Teacher trainee's different social and cultural roles - teacher-learner's identity changes while acquiring new discourse forms and roles
Learner-Focused Teaching	- fundamental aspect of language teaching

Ten fundamental dimensions of skill and expertise in language teaching

	- characterized by: students' engagement, response to learners, student participation, learning outcomes, learners' perspective and support students' needs
Pedagogical Reasoning Skills	- advanced thinking abilities teachers use to plan and conduct their lessons effectively
	- teachers with specialised cognitive skills can: analyse lesson content and identify how it can be used as a teaching resource, recognise linguistic goal, anticipate problems and ways of solving them and make correct decisions about time, structure and organization
Theorizing from Practice	- essential for teacher development
	- reflecting on practices to understand the nature of language teaching and learning
	- contributes to professional development
Joining a Community of Practice	- characterized by a group of people with common interests and focusing on teaching practices
	- collaboration with other instructors to understand the teaching and learning process, share knowledge and skills, implement changes and increase teamwork benefits
	- contributes to professional development
Professionalism	- two dimensions:
	1. institutionally prescribed professionalism - "represents the views of ministries of education, teaching organizations, regulatory bodies, school principals and so on that specify what teachers are expected to know and what quality teaching practices consist of" (Richards, 2010, p. 119)
	2. independent professionalism – "refers to teachers' own views of teaching and the processes by which teachers

Ten fundamental dimensions of skill and expertise in language teaching
engage in reflection on their own values, beliefs, and practices" (Richards, 2010, p. 119)

Source: Adapted from Richards (2010)

Teacher competence is important since it has direct impact on learning and directly influences the quality of teaching and the students' ability to learn English and use it effectively. Competent teachers feel more confident while teaching and are capable to adapt to student needs.

According to Sulistiyo (2016) teacher language competence comprises a set of skills and knowledge that give teachers confidence, as shown in Table 8. Notably the specialised skills that the author considers to impact on quality of teaching is almost exclusively focused on language specialisation: advanced proficiency in the language, native-like pronunciation, an understanding of grammar, syntax and phonology. Concomitantly there are also dimensions of language used in context that may have more to do with the competences needed by ICLHE or EMI teachers, such as adaptation of language use to contexts and situations.

Table 8

Specialised skills for language teachers

Specialised skills for language teachers	
Advanced Language Proficiency	- to have a high level of proficiency in English is needed - to have native or near-native level of pronunciation and intonation to be a good model for students
Deep Understanding of Language Structures	- to understand English grammar, syntax, and phonology
Pedagogical Grammar	- to simplify and explain complex language concepts so that they are clear to learners at different proficiency levels
Cultural and Pragmatic Knowledge	- to understand the cultural contexts in which English is spoken and be able to transmit them to students - to know how to use language appropriately in different situations
Reflective Knowledge	- to reflect on their language use and to improve their competence
Instructional Language	- to master the language of instruction

Source: Adapted from Sulistiyo (2016)

Similarly to Sulistyio, Budikova (2020) investigated linguistic competence within the context of foreign language learning and teaching and defines linguistic competence as the learner's knowledge of language structures, vocabulary, and the ability to produce and understand written texts. The article points out the connection between linguistic competence and the four essential language skills (reading, writing, listening, and speaking) and examines ways to develop them in class.

Sercu (2006) discusses the role of foreign language teachers further by highlighting the need to develop a new professional identity as "foreign language and intercultural competence teachers". The paper discusses the importance of these skills in the professional identity of language teachers and explores how they are currently being implemented in practice, which certainly resonates with the strategies for internationalisation at home where most ICLHE and EMI occurs.

While examining the role of in-service training for language teachers in improving their language competence, Pawlak (2011) highlights how teacher proficiency in the language they teach is essential for teaching success, as claimed specialists in the field of second language teacher education. The author calls attention to how teachers' language skills may decrease over time because of limited exposure to the target language or relying on the same materials for extended periods and recommends professional development of the communicative competence, which involves grammatical, discourse, sociolinguistic, and strategic dimensions. Pawlak (2011) further argues for in-service training to promote teacher autonomy and reflection, which includes encouraging self-evaluation, writing learning diaries, and developing language learning strategies.

While there is no doubt that language competence is relevant for teachers who teach a foreign language, literature on skills and competences of language teachers appears to specifically address mastery of the language, which are very specific, while also pointing to other skills and competences that may be better accepted by teachers who teach a specific content in a foreign language and do not see themselves as language teachers per se. The next section looks at one type of specialised English teaching, EAP, that may be productive for ICLHE /EMI teacher professional development.

2.3.1. English for Academic Purposes (EAP)

When addressing language needs in university contexts, approaches that may help teachers and students to develop their academic language are important. EAP, EMI and ICLHE may be considered significant approaches to language learning in HE settings and they may be considered interconnected.

English for Academic Purposes (EAP) constitutes another dimension that may be essential for lecturers teaching in English to develop, as it provides them with the linguistic and pedagogical skills to convey academic content effectively. According to Hyland (2006), EAP supports teachers in understanding the specific language needs of their students. It will also enable them to design courses that improve academic reading, writing, and speaking skills. Furthermore, Charles and Pecorari (2016) highlight the importance of EAP to foster students' critical

thinking and reasoning skills, ensuring they are well-prepared for the academic environment. When lecturers are able to apply EAP principles, they will improve their practices and, at the same time, impact their students' ability to engage with academic discourses (Biber et al., 2011).

According to Gillet (2022, para. 1), EAP "refers to the language and associated practices that people need in order to undertake study or work in English medium higher education". Gillet further explains that the purpose of an EAP course is to support learners in acquiring the language proficiency and cultural skills necessary for studying or working through the medium of English.

The correct use of the English language in academic contexts is very important when it comes to teaching in HE contexts.

Ellison et al. (2017) describe an EAP program designed to support teachers at the University of Porto in developing linguistic and methodological competences for EMI. The course was designed to support lecturers in developing both linguistic competence and methodological awareness for effective teaching in EMI settings. The article concludes that lecturers face significant challenges when using EAP, such as frustration, anxiety, and feelings of inadequacy. However, instructors mainly perceive their needs in terms of language proficiency and tend to associate them with improved ability to teach in English, often overlooking methodological aspects.

Associated to EAP is the concept of academic literacy, which refers to a set of skills and cultural knowledge required for successfully communicate in academic contexts. Academic literacy entails mastering all the skills and not only reading and writing (Hyland & Hamp-Lyons, 2002). EAP is very important for students as it provides them with the linguistic and academic skills necessary to overcome the challenges of university-level studies in English-speaking environments (Airey, 2016). EAP focuses on developing students' abilities in academic writing, critical reading, listening, and speaking, which are necessary for students to engage with academic content, discussions and research (Jordan, 1997). According to Gillett (2011) EAP fosters academic literacy by enabling students to interpret and produce texts that meet the standards of academic discourse. However, mastering EAP is not just about language proficiency, but about

becoming part of the academic community (Flowerdew & Peacock, 2001). Thus, EAP will help students to be part of the academic community, since language is not just a medium of communication but a tool for creating knowledge, fostering innovation, and connecting cultures.

When addressing language needs in university contexts approaches that may help teachers and students to develop their academic language are important. EAP, EMI and ICLHE may be considered significant approaches to language learning in HE settings and they may be considered interconnected.

Piquer-Píriz (2023) highlights the importance of academic language in university contexts, referring to both the everyday language used in social interactions and the specialized language necessary for academic contexts. She also discusses academic literacies, which encompass skills beyond reading and writing, such as interacting and sharing ideas within academic communities.

The complexity of academic language, especially for non-native English speakers, the internationalisation of HE and the increasing use of English in academic contexts, are contributing to EAP as a growing field. EMI classes encompass several types of language: disciplinary language, everyday language, and academic language (Piquer-Píriz, 2023).

Piquer-Píriz (2023) also refers to the importance of exploring the linguistic needs of EMI students. She argues that students' needs have been less researched compared to the needs of EMI lecturers. In fact, she exemplifies with a study conducted at the University of Extremadura analysing the linguistic needs of EMI students, particularly focusing on academic vocabulary and oral skills for class communication and public speaking.

Thus, EAP and academic literacies are essential for lectures and students to communicate in HE contexts.

2.3.2. ICLHE Teachers' Language Competence

Several studies indicate that the linguistic competence of teachers is essential for successful CLIL implementation (Chostelidou & Griva, 2014; Dafouz et al., 2007; Macaro et al., 2019; Vega & Moscoso, 2019; Vilkancienė, 2011).

Addressing the research gap in teacher training for EMI, Pérez Cañado (2020a) argues that there is a need to provide lecturers with appropriate language skills when considering any CLIL teacher training action or any plans aimed at introducing ICLHE.

When the context of higher education is considered, it cannot be overlooked that currently, in Europe and in the world, English is the main languagefor general and academic communication and that Higher Education teachers are expected to use it as a lingua franca to communicate internationally and at conferences as well as for research indexed publications (Macaro et al., 2019).

As was previously mentioned, given that in the last decade there has been a great increase in the number of courses taught in English at European Higher Education Institutions (Doiz et al., 2013a; Doiz & Lasagabaster, 2018; Ruiz-Madrid & Fortanet-Gómez, 2022; Valcke & Wilkinson, 2017), it should be acknowledged that the most common approach has been EMI and to a much lesser extent ICLHE/CLIL. Though not immediately perceived by EMI teachers, one important difference between these two approaches is that in EMI there is only one teacher (the content teacher); therefore, the language support is limited, while in an ICLHE/CLIL context, foreign language teaching and support are planned and part of the instruction (Doiz et al., 2012, 2013b). Pecorari and Malmström (2018) further highlight four characteristics of EMI: English is the language used for instructional purposes; English is not itself the subject being taught; language development is not a primary intended outcome, and, for most participants, English is a second language. However, these four characteristics point to the centrality of the language of instruction, which is English, and indirectly raise the issue of the teachers' language competence in these contexts.

The problem of a lack of official language policies has been highlighted by some researchers (Dafouz, 2018; Lasagabaster, 2019; Macaro et al., 2019; Piquer-Píriz & Castellano-Risco, 2021) with some exceptions, such as the case of Spain,

where the Board of Rectors of Spanish Universities published the Framework Document of Language Policy with some recommendations (Centellas et al., 2016). Descriptions of situations of courses taught in English have emphasised the need for more teacher training in Higher Education. O'Dowd (2018) in a research study that surveys seventy European universities about their practices in the training and accreditation of EMI lecturers shows that most Teacher Education Programmes (TEPs) focus mostly on providing English language support, mainly oral communication strategies. Lauridsen (2017) similarly argues that there are few TEPs and that those that exist are typically isolated and not integrated in continuing professional development programmes. Dafouz (2018) in a study resulting from her work as policy advisor for curricular internationalisation at her university, in which she designed and organised TEPs for in-service lecturers engaged in EMI, shows that during her first encounter with lecturers, the latter revealed their concerns with language, which led her to conclude that TEPs should essentially support teachers to overcome their needs not only in terms of language, but also in what concerns pedagogy and the lecturers' self-image.

Dearden (2015) observed that eighty-three per cent of the fifty-four EMI countries surveyed in her study lacked sufficiently qualified EMI teachers. She also found out that policy makers had not considered the need to certificate teachers' competences with the purpose of ensuring the adequate implementation of EMI programmes through teacher certification of competence.

Macaro et al. (2019) argue for the importance of certification of English Medium Instruction teachers in Spanish Higher Education Institutions. They investigated how much and what types of certifications were currently available in Spain, as well as the beliefs of teachers and managers in Spanish universities with regard to professional development and certification. Results demonstrate that in the perception of EMI teachers, the weaknesses of TEPs directed at them encompass an overemphasis on linguistic skills, which their classroom experience indicates to be insufficient. Additionally, they highlight a dearth of supplementary requirements beyond the willingness to use English. However, English has an important and leading role at universities due to its *'lingua franca'*

status sustained by peer competition, internationalisation at home strategies and faculty requirements to publish in highly ranked English-medium journals.

In an article addressing the research gap in teacher training for EMI, Pérez Cañado (2020a) highlights that results indicate that teachers tend to be confident about their language skills, especially those related to written expression and specific terminology. Doiz and Lasagabaster (2018) also reported that teachers' vision of the perfect self usually predominates over the real self. In the same article Pérez Cañado concludes that EMI should be CLIL-ized, which means that significant attention to language should be given together with content development. Other specialists had previously argued that the combination of language learning with the content learning would be the ideal educational environment (Doiz & Lasagabaster, 2018; Fortanet-Gómez, 2012; Macaro et al., 2018).

'Clil-isation' of EMI should also involve teacher collaboration. While at school level it is usual for the language specialist and the content teacher work together, this may be more difficult to achieve in HE where the degree of specialisms is higher and where the language specialist acts most of the time as language consultant rather than co-teacher.

As a result of a literature review, Piquer-Piriz and Castellano-Risco (2021) identify as the two most relevant teachers' needs, language proficiency level (Macaro et al., 2019; O'Dowd, 2018) and methodological training (Dafouz, 2018; Pérez Cañado, 2018). The authors argue that the first step to help teachers teach in English is to analyse their self-perceived needs. They analysed teachers needs according to the five dimensions identified by Pérez-Cañado (2020a): (1) linguistic competence; (2) methodology and classroom management; (3) resources and materials; (4) training needs, focused on linguistic and methodological needs, and (5) overall rating, which focused on participants' giving feedback based on their experience in EMI programmes. Results of the study reported the following teachers' training needs: specific management of classroom language and bilingual education methodologies.

Coelho (2022) in her study about language competence needs of teachers of the Polytechnic Institute of Portalegre in Portugal, found that teachers feel confident

about their language skills to engage in EMI. They are more concerned about methodology and finding suitable teaching materials in English. Coelho's Phd research study presents similar results to the studies by other scholars (Macaro et al., 2019; Pérez Cañado, 2016a, 2016b, 2020b; Piquer-Píriz & Castellano-Risco, 2021).

However, we would argue that ICLHE lecturers need to develop specific collaborative competences, in particular, the ability to collaborate with other colleagues for an interdisciplinary perspective of teacher collaboration, in addition to what has been identified by the above researchers.

Many studies report teachers' experiences in ICLHE contexts and have highlighted the main competencies of ICLHE lecturers (vd Chapter 1, Section 1.6., Table 4).

In the context of ICLHE or EMI, both linguistic proficiency and pedagogical/methodological competence are essential, but they have different purposes and require different types of development and support. An effective EMI or ICLHE program should provide support for teachers to develop both areas, recognizing that excellence in teaching requires both clear and effective communication in addition to well-designed, student-centred learning experiences. Key to successful bilingual education is balancing and enhancing both competences.

Linguistic proficiency focuses on the language used to deliver content, while pedagogical/methodological competence focuses on the strategies and techniques used to facilitate learning. Even though they are different, they are interconnected. High linguistic proficiency can enhance pedagogical effectiveness by making explanations clearer and communication more effective and strong pedagogical skills can balance lower linguistic proficiency by employing strategies that support understanding and encourage active learning.

2.3.3. Students' Language Competence for ICLHE

Content teachers often complain that their students' language competence may influence the success of ICLHE/CLIL. Several studies show that students' lack of proficiency in English may influence the success of ICLHE or EMI courses.

Gil and Dueñas (2023), within the context of providing training for ICLHE teachers, discuss the students' language competence at the university level to conclude that on entering university there are still many students who display language difficulties not only in using English to learn, but also, even in their mother tongue, because they need to develop linguistic skills associated with academic language. The authors thus contend that university teachers need to be aware of their students' linguistic needs prior to engaging in teaching through English. They also need to promote and support the development of their students' academic language. As an answer to this gap, one of the principles for the ICLHE training course for teachers at the Universidad de Zaragoza was that students' language competence development should not just be expected by teachers, but instead planned and fostered.

In a different study that aimed determining the perceived linguistic and professional competences acquired through an ICLHE approach among PE students, Álvarez-Domínguez et al. (2023) concluded that results show that students generally perceive an improvement in their linguistic and professional competences in these courses. Students' perceptions are also explored Moratinos-Johnston et al. (2018) regarding the impact of EMI on students' linguistic self-confidence and perceived English proficiency based on the number of ICLHE subjects they have taken. Results show a correlation between the number of ICLHE subjects students have taken and their linguistic self-confidence and perceived English proficiency. Those who have taken more ICLHE subjects report higher levels of self-confidence and perceive themselves as having better English skills. However, significant differences are noted only after taking more than four subjects.

This is corroborated by Ament and Pérez-Vidal (2015) who focus on the effects of English Medium Instruction (EMI) on students' linguistic improvements in a university context. The study investigates the linguistic increases of

undergraduates after one year in a semi-immersion and full-immersion EMI context and shows that significant linguistic gains were observed in the semi-immersion group, especially in grammar and that there was an overall improvement for full immersion students.

However, this may not happen for all students. While exploring the impact of ICLHE and Collaborative Online International Learning (COIL) approaches on students' learning experiences, Mestre-Segarra and Ruiz-Garrido (2022) show that at the beginning of the experience students expected to improve their language skills, particularly speaking and listening. However, in the end, perceptions indicated lower improvements than expected even though students felt their participation was positive and that the experience had enhanced their confidence.

In fact, the English level of students may be relevant for this discussion, as shown by Méndez García and Casal Madinabeitia (2018). In the context of exploring the integration of ICLHE as part of Spanish universities' internationalisation strategy, the authors discuss students' language competence in the context of implementing plurilingualism in higher education and suggest that ICLHE may be more beneficial for students with below-intermediate levels, particularly to develop oral comprehension and grammar skills. They also recommend additional language training for students and teachers.

As previously stated, when applying an ICLHE approach, it is essential to plan and design classes bearing in mind students' language competence and to monitor their perceptions, which was the course undertaken at IPCB when piloting and implementing ICLHE modules with engineering students.

The ESP teacher felt her students were not motivated for learning English (Gaspar et al., 2018), which was framed as a problem since the ability to communicate in English is essential for engineering students in working contexts. The solution found was to implement ICLHE modules, as a means to improve students' language skills and to motivate them for the learning and use of English in engineering academic and work contexts.

Gaspar et al. (2018) carried out a project with Industrial Engineering students in a Higher Education Portuguese Polytechnic Institute during three successive

academic years in the framework of an adjunct CLIL pilot experiment. One of the primary concerns that emerged from this study was the lack of confidence of the students in their linguistic skills for professional and academic purposes. They also feel that this will prevent them from communicating when required to speak or write.

However, findings suggest that while students acknowledge the importance of learning English concerning their work as engineers, the majority declare not being proficient in that language. Students also mention that the ICLHE approach helped them to better recognize their own personal language learning needs and consequently promoted their communicative ability in English.

This situation demands increased intensive exposure to the foreign language (English), as it is also argued in this research study. Both quantitative and qualitative data show the need for increasing students' language competence.

2.4. Teacher Collaboration

The concept of teacher collaboration can be approached from different perspectives since collaborative work between teachers occur across several situations. Lo (2020) lists several forms of teacher collaboration: peer coaching, partnership teaching, collaboration between mainstream teachers and special education consultants. She also reminds readers that teaching has long been considered as an individualist, isolated career in which teachers usually try to maintain power, autonomy, and privacy in their own classrooms. However, she claims that teacher collaboration has been advised and promoted because it is considered an important component for implementing instruction innovations, increasing school efficiency, enabling student learning, and encouraging professional development.

Teacher collaborations have been referred to in the education literature under a diversity of names, but the most common are 'communities of practice' (Lave & Wenger, 1991; Sherer et al., 2003; Wenger, 2010), 'learning communities' (Cox, 2001) and 'teacher networks' (Lieberman, 2000). They all feature groups of teachers bound together around a practical goal, who share their knowledge, passion, uncertainties and confusions (Sherer et al., 2003; Viskovic, 2006). They

focus on supporting learning by reflecting on classroom experiences and have been found to be more effective at helping teachers progress professionally, when compared with learning through formal sessions such as conferences and workshops (Lieberman, 2000).

There is the idea that creating a Community of Practice (CoP) (see Chapter 1, Section 1.5. for a definition) reduces isolation and contributes to the success of teachers, as it develops and encourages voluntary collaboration among teachers. As Wenger (2000) argues, CoPs are groups of individuals that cooperate with each other in order to learn how to do something they love and share the same enthusiasm for. CoPs may be created for many reasons and with several purposes.

However, not all teacher collaboration can be described as a CoP. They may, however, be understood as the most complex type of teacher collaboration. Influenced by Wood and Gray (1991), Thomson et al. (2007) advocate that collaboration is a process in which autonomous or semi-autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; collaboration being a process involving shared norms and mutually beneficial interactions. It involves deciding goals together with others, sharing responsibilities, and working together to achieve more than could be achieved by individuals on their own (Barfield, 2016).

Cook and Friend (1991) conceptualise collaboration as a way of interaction between at least two co-identical partners willingly engaged in shared decision-making as they work toward a shared goal. They characterise collaboration as being voluntary; based in individuals who work together and share a common goal; requiring commitment among participants; including shared responsibility for decisions and involving sharing resources.

Collaboration can also be described as referring to teachers' cooperative actions (their actual doing things together) for job-related purposes. In this definition, 'teachers' includes all educational staff members of a school (Kelchtermans, 2006).

For Woodland et al. (2013) the term collaboration is used to imply any type of relationship between people. High quality teacher collaboration requires teachers to work closely and continuously with their collaborators (teacher colleagues) to analyse and discuss students and learning data in order to solve potential problems. This is what the authors call the cycle of dialogue, decision making, action taking and evaluation (DDAE), which is represented in Figure 7.

Figure 7

Cycle of dialogue
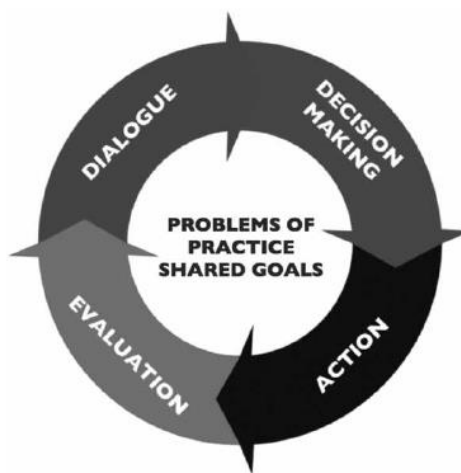
Source: Woodland et al. (2013, para. 444)

The authors further claim that 'dialogue' is an important element of an effective cycle of collaborative analysis. However, low operating and non-accurate types of teaming also tend to encourage dialogue, which means that teams will reflect on their disagreements and overcome their conflicts.

'Decision making' is a fundamental characteristic of a teacher team's cycle of collaborative analysis. By simply reflecting and deciding to implement general instructional strategies, teachers will not improve their practice or enhance student knowledge. They must work together to discover new ways of working by making decision about how to improve the teaching process. A decision does not generate outcomes by itself, therefore 'action' taking is a crucial component of a teacher cycle of collaborative analysis. If actions are not taken as a consequence of their team decisions, the cycle of inquiry ends, and weaknesses will set.

The 'evaluation' of practice is an essential component to an established cycle of collaborative analysis. High-quality teacher collaboration requires collecting and analysing student learning and instruction quality.

Andy Hargreaves wrote an article in 2019 entitled "Teacher collaboration: 30 years of research on its nature, forms, limitations and effects"(Hargreaves, 2019), which summarizes her thirty years of research of teacher collaboration. One of the author's early findings is that greater friendship does not always lead to better collegiality (Hargreaves, 2019) or the best way to collaborate. As consequence of her work as a graduate student, during the 1990s, Hargreaves put forward a new concept related with collaboration, which she named "contrived collegiality" and which she contrasted with "collaborative culture". Collaborative culture is defined as relationships that have evolved based on willingness, confidence, help and support amongst teachers who build a community defined and developed based on their purposes and objectives. These types of collaborative cultures encourage teacher and curriculum development. On the other hand, contrived collegiality improves administrative control since collaboration is 'imposed' on teachers who meet and work to implement the curricula and educational strategies (Hargreaves & Tucker, 1991).

Higher Education teachers' scientific and pedagogical autonomy (in Portugal, for example) excludes situations of contrived collegiality at the level of syllabus and educational strategies, as instructors are singularly responsible for the contents and the pedagogical approaches, they use in the courses they teach. In this sense, collaboration among teachers at HE depends on their openness and willingness to work with each other or on the necessary contrived collegiality they will need to assemble curricula or study programmes or sit at meetings where they have to discuss and find solutions to institutional problems and situations.

However, there are several ways in which HE professionals can collaborate and work together: instructional situations such as co-teaching (mainly used in ICLHE contexts) or shared courses, research or investigation (projects, writing articles). Collaboration in terms of instruction in HE contexts is mainly related to sharing the teaching of a specific course (part of the subject is taught by one lecturer and another part is taught by another instructor; different classes are taught by different teachers) or implementing new approaches to help students acquire new

competences, in which the so-called soft skills are included. In the first situation the existing collaboration is very simple and mainly related to agreeing which part of the contents each teacher will teach and how students will be assessed. Most of times the involved lecturers do not discuss topics or influence each other's lecturing decisions.

However, in an ICLHE/CLIL context collaboration is essential. In order for students to learn about a content topic and gain the necessary language competence to convey the content they are learning, close collaboration among content and language teachers is crucial. As a consequence, the success of ICLHE/CLIL implementation may depend on the collaboration between content and language teachers who must work together with the purpose of enhancing students' learning (Ivanova, 2016).

2.4.1. Teacher Collaboration for ICLHE/CLIL

Teacher collaboration for learning and teaching may present an innovative approach in HE with benefits for both lecturers and students. It is possible to argue that ICLHE's success is sustained by teacher collaboration at the levels of course design, lesson planning, materials design and assessment. Co-teaching may play an essential role in integrating content knowledge with language instruction, but as argued before, may not be feasible in HE contexts.

Co-teaching occurs when two teachers work collectively to plan, organize, teach and assess the same group of students, sharing the same classroom (Hartnett et al., 2013).

However, there are several models of co-teaching. Sandholtz (2000) refers to three types of team collaboration: 1) two or more teachers loosely sharing responsibilities; 2) team planning, but individual instruction and 3) joint planning, instruction, and evaluation of learning experiences. Even though some of the referred models are similar to some used in ICLHE/CLIL, they are not directly applicable to that specific context in which both content and language teachers negotiate their roles and plan their contribution to the lesson.

Collaborative teaching, as defined by Villa et al. (2008), is when two or more people share responsibility for educating students in a classroom. They advise

that it involves distributing responsibility among the involved teachers for planning, instruction and evaluation. They clearly identify what collaborative teaching is not, namely one person teaching, to be followed by another teaching a different subject, or one person teaching while the other one prepares teaching resources and materials. The authors Villa et al. (2008) identify four different models of co-teaching: supportive teaching, parallel teaching, complementary teaching and team teaching/ co-teaching. Supportive teaching occurs when one teacher takes the lead instructional role and the other moves around the learners to provide support on a one-to-one basis as required. Parallel teaching is when two or more teachers are working with different groups of learners simultaneously in different parts of the classroom. Complementary teaching is when co-teachers do something to enhance the instruction provided by the other co-teacher, for example, complementing one idea according to their own expertise. Team teaching, by comparison, is when both teachers do what teachers do for a class (plan, teach, assess) and equally share responsibility, leadership and accountability (Villa et al., 2008).

There are several types of co-teaching or team teaching. A specific type of team teaching is Tandem Teaching, in which two instructors, with distinct strengths and skills, work simultaneously in the same classroom, transforming an individual activity into a mutual experience.

HE teachers' views on co-teaching report it as challenging and demanding (Gaspar et al., 2017b) due to the preparation time and effort to effectively implement an ICLHE module in class, but also in view of the competences to be developed and the dedicated instruments to develop. The authors also point to requirements that must be in place, such as taking into account the previous teaching experience of both lecturers involved, detailed lesson planning and preparation prior to every lesson, keeping dialogue active inside and outside the class among both teachers, as well as organisational requirements that concern compatible class schedules integrated assessment in the end, and class management.

The views on tandem teaching by the same team (Morgado et al., 2018) explore the full potential of a collaborative approach on engineering courses with the purpose of providing the same group of students with the adequate content

(engineering) and foreign language (B1 English) skills (ESP class). Both courses were managed as a unit and the workload divided between the Engineering lecturer and the ESP lecturer after joint planning to widen the instructional design strategies to a wider set of aims and goals. Increasing the pedagogical challenges for the teachers to combine methods and approaches and accomplishing the goals predicted for both content and language classes was perceived simultaneously as a challenge and a motivation, since the practice contributed to change individual teaching activities into a mutual and shared experience with combined results.

Pavón Vázquez and Ellison (2013) argue that the success of ICLHE/CLIL programmes, which include the teaching of content through another language, does not rest exclusively on whether the teachers have a high level of linguistic and subject competence, but also on the degree and type of collaboration between content and language instructors. Successful ICLHE teaching depends on the close collaboration of both content and foreign language teachers. In this sense, both would be engaged in considering the contribution of their professional expertise and how their practice would need to be adjusted to meet the goals of ICLHE in a particular context. This requires a high degree of reflexivity, commitment and responsibility as it demands teachers to step out of their comfort zones and enter into an environment of interdisciplinary challenge and uncertainty. It demands time investment and work, serious consideration of professional skills, and learner needs (Ellison, 2014).

Zappa-Holman (2018), who analysed collaboration between language and content university instructors, managed to extract factors and indicators of positive partnerships. Several factors seem to affect the way in which the collaborative interactions are created. Some issues can be external to partners, while others may be related to their individual characteristics and preferences towards collaborating. Research results show that the most successful collaborations are the ones where instructors visit each other's classes, as they have the possibility to achieve a greater understanding of teaching focus. Institutional acknowledgement of the additional time and efforts engaged in the collaborations are also shown to influence collaboration. Results of this study also show that successful collaborations are those in which lecturers closely work

together to design, plan, and implement ICLHE. Respondents refer they enjoyed working with the language teacher, that they feel more comfortable because they can ask for help when they need and receive feedback, among other observations.

For teacher collaboration to be successful some personal characteristics are required: having an inquiring, creative orientation; preventing territorialism; committing to the programme; being patient and perseverant; possessing effective interpersonal skills; displaying a respectful attitude; and showing interest in improving student learning (Zappa-Hollman, 2018). Figure 8 shows indicators of positive experiences of collaboration, such as collaboration as rewarding and transformational; collaboration as mutually enriching; collaboration that aligns goals and investment; collaboration that values the focus on language and recognises the epistemological authority of the language teacher; and collaboration that is developed equitably.

Figure 8

Indicators of positive Collaborations
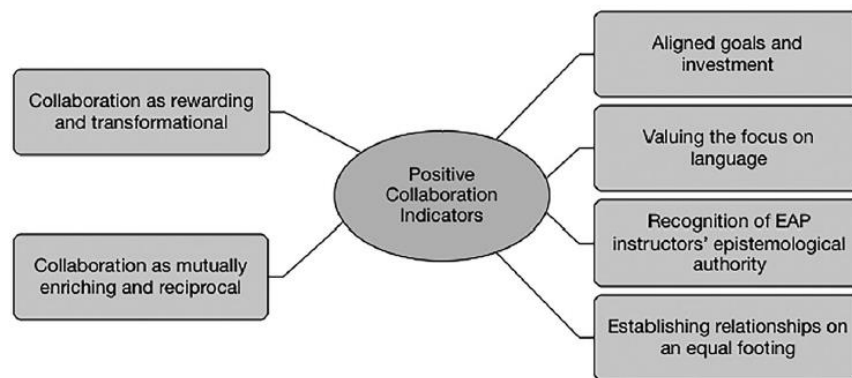
Source: Zappa-Hollman (2018, p. 597)

The identifying factors that support collaboration as well as the indicators that reveal whether the collaborations are effective provide important insights to those engaged in similar partnerships and/or working in contexts similar to the one explored in Zappa-Hollman (2018) study. All these indicators can be applied to ICLHE, although it may be challenging at times, particularly when considering the role of language, which is often relegated to a secondary position in relation to content.

Successful and efficient teacher collaboration requires the development of collaborative capabilities. Teachers need to become conscious of the need to develop their collaborative skills, which includes to actively contribute to a safe and supportive teaching environment, to be capable of managing conflicts, to have a growth mindset and to take shared responsibility for the wellbeing and success of all learners. Martin and Bradbeer (2016) created a diagram to illustrate the key factors that contribute to collaborative teaching, as shown in Figure 9.

Figure 9

Collaborative Framework
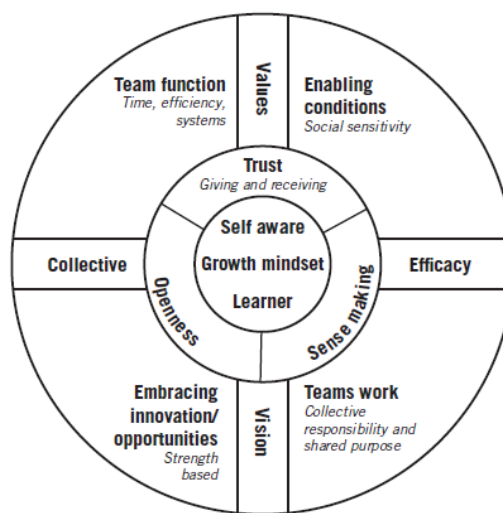
Source: Martin & Bradbeer (2016, p. 51)

Figure 9 illustrates the factors that teachers must consider to foster effective collaboration with their peers. It is essential for them to cultivate an environment characterized by trust and openness, that allows them to handle conflicts and to work towards shared goals, including their individual objectives. Through shared values and beliefs, they can seize innovative opportunities and function cohesively as a team. Martin and Bradbeer's collaborative framework (2016) can be applicable in integrated approaches at a HE level, even though HE teachers are normally used to independently preparing and managing their classes, given their high degree of autonomy at the lesson planning and instruction level.

Planning lessons and defining assessment frameworks collaboratively helps teachers to better meet the needs of diverse learners. In this sense, collaborative lesson planning provides opportunities for teachers to work based on each

other's strengths and to overcome difficulties. Collaborative assessment is also very important as the primary purpose of assessment is to improve students' learning by identifying gaps in what students know, understand, or can do. Because most assessment occurs naturally through everyday classroom interactions, collaborative assessment can require some creativity and harness modern technological tools can help students and teachers monitor this process. Morgado et al. (2019) describe a three-year ICLHE/CLIL experience with Industrial Engineering students during which a content and a language teacher worked together collaboratively in planning, designing, implementing and assessing students by focusing on assessment tools that were purposely developed for the integration of language and content, a strategy that was also pursued in different contexts, for example, through the use of a Moodle digital platform (Régio et al., 2019b). Both experiences show how the use of technological tools may help to increase Engineering students' content and language competences through their own progress monitoring, given their adherence to digital tools.

A recent article by Dang et al (2022), explores the challenges occurring from team members' individual differences and how team teachers solve these conflicts. Adopting sociocultural activity theory, the authors were able to document tensions arising from teacher joint activity in terms of systemic contradictions related to rules, tools, and division of labour and power between members of the community. Strategies used by team teachers to overcome differences and difficulties were also presented and suggest the importance of institutional commitment and leadership support at several levels. The authors summarised the joint activity system of team teaching as seen in Figure 10.

Figure 10

Joint activity system of team teaching – contradictions and strategies
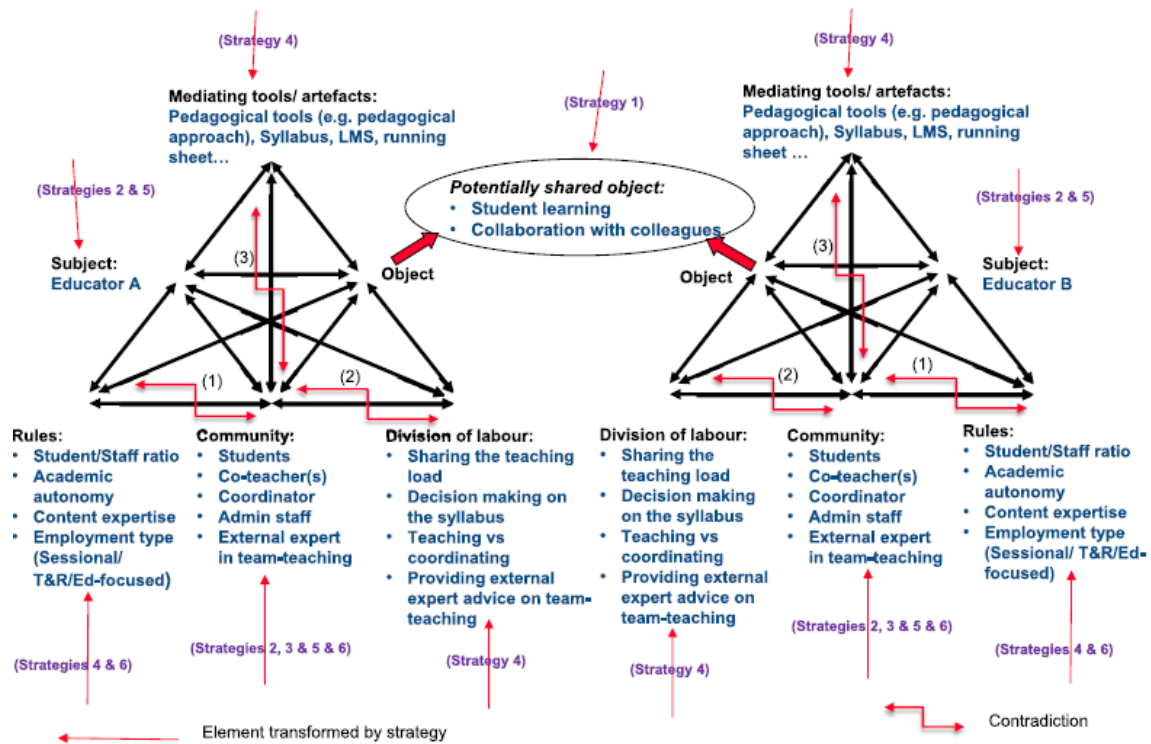
Source: Dang et al. (2022, p. 426)

The authors argue that individual differences influence teamwork and teaching teams. Within a teaching team disparate sociodemographic characteristics, previous experience in team teaching, professional backgrounds, pedagogical approaches used, motivations to engage in collaborative work, and forms of power teachers tend to exercise whilst working in teams can be considered individual differences (Bennett & Kane, 2014; Krammer et al., 2018; Minett-Smith & Davis, 2019; Robertson, 2016). Teamwork is not easy since a great amount of time is needed, and conflict can arise. In order to overcome this type of difficulties involved teachers must embrace differences and work for a common and most important goal student success.

In HE, collaborative teaching practices are less common than at other levels of instruction, such as primary and secondary education. Therefore, when conflicts arise, they may be difficult to overcome as lecturers are more used to working individually and autonomously. Consequently, it might be difficult to create opportunities for other colleagues to collaborate, integrating their areas of

expertise. Both instructors need to be committed and open to respecting each other's expertise and role in the collaboration. The division of tasks must be clearly set and sometimes the presence of an external expert is advisable as they may offer advice, help with decision making and coordinate the work.

2.5. Concluding remarks on teacher autonomy, collegiality, language competence and collaboration

Literature about teacher autonomy points out that fostering teacher autonomy is not just about lecturers' independence but also about creating an environment where teachers can succeed, innovate, and contribute to the academic community. Autonomy may empower teachers to design and implement curricula that reflect both their expertise, their will to innovate and pedagogy that addresses the needs of their students, enhancing at the same time, job satisfaction and learning outcomes. One of the main conclusions that could be reached from exploring teacher autonomy is the existing ambiguity between HE teachers' autonomy and Secondary Education teachers' autonomy. Higher Education teachers have a very high degree of autonomy, having the freedom to choose and adapt curricula, instruction, and assessment. They can also more easily exert control over the whole educational setting. Contrarily, school teachers at other educational levels seem to have a lower degree of autonomy, circumscribed to their classroom management and professional development choices. There are strict government regulations and school management defines universal rules and ways of working for school teachers.

Thus, in this sense, teacher autonomy in HEIs can be seen as contradictory to teacher collaboration (Vangrieken et al., 2017). Autonomous attitudes can lead to individualized attitudes that can be oppose to collaborative initiatives. However, since teachers' autonomy may allow independency to embrace new challenges, projects and approaches that could eventually lead to collaboration among lecturers, it is possible to conclude that collaboration and autonomy may be related to, and influence, each other.

One further concept that was explored in connection to autonomy and collaboration was collegiality. To avoid teacher isolation, both as an individual

choice and as a consequence of institutional organisation, dedicated strategies to promote collegiality and collaboration strategies to promote collegiality and collaboration need to be considered. Addressing isolation requires institutional support to promote interactions among lecturers, which HEIs may be willing to implement when. the connection between autonomy and collaboration is understood as a way to enhance lecturers' professional development and consequently the quality of higher education institutions.

Collegial relationships take a very important place in the process of collaboration for several reasons. Firstly, because collegiality implies the full participation of academic staff in institutional processes that shape and influence academic work. Secondly the term 'collegial institution' refers to a sense of community that involves intimate interaction among members of the institution and entails sharing similar values regarding the colleagues and the institution's purpose. Thirdly, the way HEIs are managed also influences the way teachers feel about the institution itself. If they feel supported, they will be more receptive to cooperate with others and be willing to try out innovative approaches and different ways of working.

The review on teachers' collegiality calls attention to the fact that both the managerial approach to HEIs and the perceptions of individual teachers on their working environment may impact on the implementation of ICLHE/ CLIL, which requires some measure of collegiality.

In the first place, it seems to support the argument that teachers will be more prepared to welcome and be willing to engage in ICLHE/ CLIL settings when the following conditions are met: there is institutional support for teachers, they are given autonomy to embrace new challenges; there is time availability to dedicate to new projects (since ICLHE is time consuming); they receive reward for their effort; and the institution respects (and promotes) their involvement in new projects that will help the organization receive (international) recognition.

Additionally, strategies to foster collegiality can be pointed out. Fostering collegiality in higher education institutions is necessary for building a positive and supportive academic community. This can be achieved through the creation of collaborative spaces by establishing physical spaces where teachers can interact and engage in informal discussions (Hargreaves & Dawe, 1990). Institutions can

encourage interdisciplinary collaboration by facilitating it or promoting its value for research and teaching, as well as encouraging instructors from different departments to work together on research projects, teaching activities or problem-solving activities (Becher & Trowler, 2001; Gaff & Pruitt-Logan, 2003; Sorcinelli et al., 2006). It would also be important to support professional development of teachers by providing opportunities for faculty members to attend workshops, seminars, and conferences, in or outside the institution itself, to promote their skills and expertise collaboratively HEIs should also encourage open communication and develop an environment of open and transparent communication, where teachers may feel comfortable to share their ideas and concerns as well as try out innovative pedagogies.

There are other strategies that, while supported by institutions, may depend more on the volition of teachers to engage in them, such as organising social and networking events to encourage informal interactions among faculty staff, creating learning communities based on shared interests or teaching approaches; providing opportunities for collaborative learning and professional growth embracing and celebrating diversity of scientific and academic approaches within the academic community, fostering an inclusive and respectful environment to establish a sense of respect and trust (Cox, 2001).

By implementing these strategies, HEIs can create a more collegial and supportive environment, leading to improved collaboration, higher job satisfaction, and enhanced academic outcomes. Furthermore, collegiality habits may be an important starting point for ICLHE.

Research further indicates that teacher collegiality and collaboration have been suggested to foster teachers' wellbeing by reducing feelings of isolation (e.g. (Jarzabkowski, 2002; Löfgren & Karlsson, 2016; Ostovar-Nameghi & Sheikhahmadi, 2016). Teacher collaboration is closely related with collegial relationships of teachers within the institution or organization they belong to.

The chapter also showed that several issues may impact collaboration and influence teachers' availability to cooperate with each other, among which are autonomy and collegiality. While still important, language competence, both of teachers and students, may have less impact compared to the other constructs.

One of the main conclusions reached is that teacher collaboration cannot be studied in isolation from collegiality and teacher autonomy. Literature indicates that collegial relationships influence teachers' cooperative attitudes. Collaboration and collegiality comprise and reflect one another. The actions of working together (collaboration) are defined and affected by the quality of the relationships among staff members, which "reflect" collegiality (Kelchtermans, 2006).

Language competence is important for the success of ICLHE and EMI approaches provided a balance is achieved between linguistic proficiency and teaching practises. Research highlights that teachers should have a good working knowledge of the language structures and grammar as well as the cultural dimensions of using English to teach. Furthermore, in order to attend to their own and their students' needs, teachers should reflect on their teaching practices and be capable of assessing students' competence levels in the foreign language. Managing academic language is very important within higher education contexts as EAP is essential for lecturers to teach content correctly to their students and monitor their access to a specific scientific community. When students manage adequate academic language, they can succeed in learning and meet the university requirements.

Literature also suggests that collaborative competences among ICLHE lecturers and the development of students' language skills to prepare them for the global job market are deemed important to achieve HEIs goals of internationalisation.

In ICLHE teacher collaboration between content and language instructors is strongly encouraged. Effective collaboration can only take place when the involved teachers decide to fully embrace the project of cooperating with another teacher and are willing to adapt their skills and expertise to a common interdisciplinary inset. This partnership will enhance students' motivation, prevent teacher isolation and enable teacher professional development. Findings from several studies report very positive feedback from teachers, who value the opportunity to get together with colleagues from other disciplines to discuss and practice topics that combine discourse awareness with their own language improvement and awareness of different existing methodological possibilities (Dearden & Macaro, 2016; Doiz & Lasagabaster, 2017; Lasagabaster, 2018).

The literature review in this chapter was accompanied by field experience of the author. In the last twelve years the author, a language teacher in a Portuguese Higher Education Institution has been working as an ESP teacher and gradually introducing an ICLHE approach for which she has required the collaboration of other (content) teachers under supervision of a language specialist. Experiences and reflections of the author resulting in papers presented in conferences and published in articles, made her realize that the topic of collaboration in Higher Education deserves closer attention. Informal conversations with partners and her personal affection for the topic made her decide to choose this specific part of CLIL as the main subject of this thesis, which aims at exploring and analysing teachers' autonomy, collegiality, collaboration, and language competence to teach in English for ICLHE in the specific context of the Polytechnic Institute of Castelo Branco (IPCB).

In Part Two of this PhD thesis, data will be collected, analysed and discussed about relationships between collaboration, collegiality, autonomy and language competence and their influence in developing ICLHE in a particular Higher Education context.

PART TWO

STUDY

Chapter 3
Context

The present chapter describes the context of the study, providing further details of the Polytechnic University of Castelo Branco (IPCB), where the study took place, in the larger framework of public higher education institutions in Portugal. In particular, it draws on the official contexts for collegiality and collaboration as well as on the language policy pursued officially at IPCB by describing the governance structure and bodies at IPCB. It details all the opportunities that teaching staff have for collaboration and collegial interaction.

3.1. The Higher Education system in Portugal

In Portugal the public and private higher education system is organised in a binary or dual system of universities and polytechnics. Some polytechnics are integrated in universities, some polytechnic higher schools are not integrated in either a polytechnic or a university, and recently some polytechnics have been granted the possibility to change their name in English to 'Polytechnic universities', as is the case of IPCB, to avoid international misunderstanding regarding its higher education status and the misleading associations in English to the word 'polytechnic'. Access to public universities and polytechnics is gained through the same national exam upon conclusion of secondary education.

The binary system in Portugal has its origins in the 1970s with the Veiga Simão Reform. One of the main goals of this reform was to extend the education of Portuguese youngsters from compulsory education at the end of secondary school to higher education as well as to spread higher education geographically to every district capital in the country. Up to the 1970s, higher education was exclusively composed by universities and was restricted and accessible to students from wealthy families, the main universities being located in the coastal region of Portugal and in major towns such a Lisbon, Porto and Coimbra. The

roles of universities and polytechnics were defined in the Education Framework Act of 1986 (Law 46/86, 14 October) (Almeida & Vieira, 2012). In this law universities were granted an academic, scientific and research role while polytechnics were assigned vocational profession-based training at higher education level (Ferreira et al., 2008; Heitor & Horta, 2014).

Figure 11 shows the number of Higher Education institutions in Portugal separated by universities (public and private), polytechnic (public and private) and other (public, military, and police).

Figure 11

Number of Higher Education institutions in Portugal
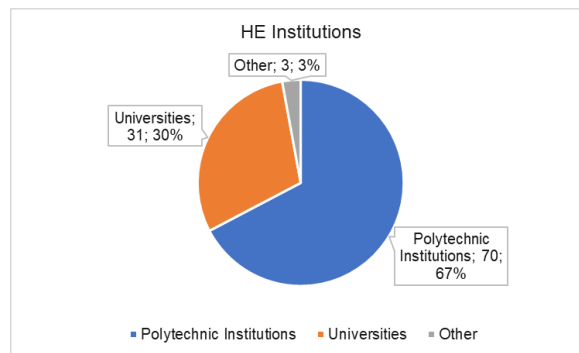
Source: Based on data retrieved from DGES (2022)

According to data retrieved from *Direção Geral do Ensino Superior (DGES),* in July 2022 there are 104 higher education institutions in Portugal, of which 60 are private, 41 public, and 3 public, military and police. There are 70 polytechnic institutions in Portugal (27 public, 43 private and 1 public, military and professional) and 37 universities (14 public, 17 private and 2 public, military and professional).

Figure 12

Higher education institutions in Portugal
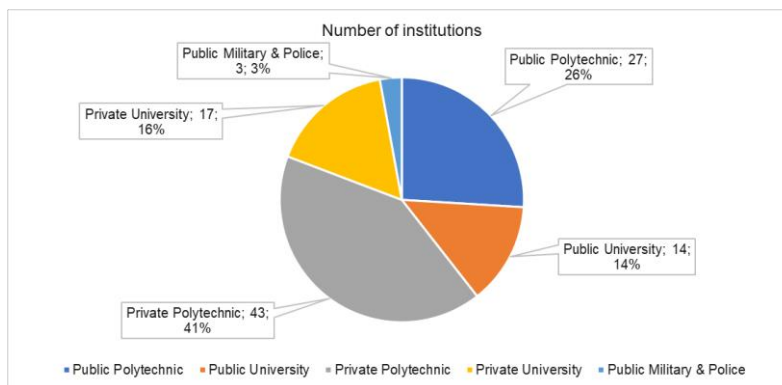
Source: Based on data retrieved from DGES (2022)

IPCB is a public higher education institution with a regional mission as defined by Decree-Law NUMBER 296/1979, of 26th December. Decree-Law 62/2007, of 10th September, defines autonomy of HEIs in Portugal and Decree-Law 74/2006, of 24th March specifies the degrees that ideally pertain to each of the subsystems. In practice, since the inception of the dual system of polytechnics and universities, the main differences between them pertain to the degree of autonomy they are granted from central government in relation to the degrees they can offer (pre-bachelor, bachelor and master's degrees in polytechnics; bachelor, master's and PhD programmes in universities), the faculties (called Higher Education Schools in Polytechnics) they can create or aggregate, polytechnics also possessing less autonomy than universities to decide which degree courses to offer and, for some time also being more restricted in being recognised for the research their staff does in terms of public funding and expenditure. The growing pressure to acknowledge the research at polytechnics resulted in 2018 in legislation that entitled polytechnics to confer doctoral degrees (Brás, 2021) by Decree-Law No. 65/2018. Currently, polytechnics and universities offer undergraduate, postgraduate and master's degrees, the certification of a doctoral degree having ceased to be dependent on the higher education subsystem it is part of, but rather on the institutional assessment indicators of the Research Units the institution incorporates. For polytechnic higher education institutions this legislation resulted in the acknowledgement of the teaching and research quality and of research staff at polytechnics (most of which graduated from Portuguese universities and

continued attached to their research centres while doing their post-graduations) and announced publicly some level of research maturity that can have regional impact and bring research in closer connection to regional firms and organisations. However, research (Brás, 2021) points to the risks of polytechnics becoming like universities and thus subsuming the binary system; as well as to the risk of jeopardising practical and profession-oriented higher education to research; not to mention that many smaller polytechnic HEIs in the interior regions of Portugal may not easily reach the research assessment standards and outputs of big HEIs in major towns. Nonetheless, there are still specificities of the Polytechnic subsystem that complement university higher education: the courses taught at all education levels provide technical training for specific professions; thus, they are profession-oriented; and polytechnics are currently the sole providers of short cycle pre-bachelor courses called CTesP (*Cursos Técnicos Superiores Profissionais*) which last four semesters.

As mentioned before, one of the purposes for the creation of polytechnic higher education institutions was to encourage and foster regional development (Ferreira et al., 2008). However, regional differences emerge when the network of polytechnic institutes is considered. Public polytechnics are distributed through the whole country, while private polytechnics are concentrated in richer, more populated and developed regions (Ferreira et al., 2008), thus having unequal opportunities for development seen that interior regions will be less populated, economically less developed, and have few opportunities to attract students from coastal areas. Nonetheless, Higher Education Institutions (HEIs) are known for the impact they have on local economies and on regional development. The opportunities created by these institutions in terms of education, economy and culture would not exist otherwise (Oliveira et al., 2019).

Oliveira et al (2019) assessed the economic impact of regional HEIs by using indicators such as the weight of the regional GDP and the level of economic activity generated locally by each euro of public funding invested. They found the impact of the polytechnic HEIs to be reflected in employment and to be of relevance: there is an economic impact of polytechnic HEIs in the regions where they were implemented. The authors' results are presented in the figure below, which shows indicators for twelve Polytechnic Institutes, including Instituto

Politécnico de Castelo Branco (IPCB), show the importance of each polytechnic HEI for the region where it is located, as shown in Figure 13.

Figure 13

Importance of the different Institutes for the region where they are located

	PI-Beja	PI-Bragança	PI-Castelo Branco	PI-Cávado e Ave	PI-Guarda	PI-Leiria	PI-Portalegre	PI-Santarém	PI-Setúbal	PI-Tomar	PI-Viana do Castelo	PI-Viseu
Regional GPD estimates *-(1000€)[1]	567,860	611,982	743, 694	1,487,738	787,388	3,095,872	470,037	1,006,265	3,299,929	866,372	1,738,274	1,750,541
Total Impact of HEIs[2] (1000€)	18,604	64,647	39,302	30,123	35,741	129,477	17,277	41,731	58,363	18,009	33,484	44,800
Weight in local GDP	3.28%	10.56%	5.28%	2.02%	4.54%	4.18%	3.68%	4.15%	1.77%	2.08%	1.93%	2.56%
Public funding (1000€)	10,877	19,376	17,834	5,822	11,202	27,647	9,356	13,787	18,516	10,227	13,509	16,956
Economic activity[3]	1.71	3.34	2.20	5.17	3.19	4.68	1.84	3.03	3.15	1.76	2.48	2.64
Employer rank	3	3	3	6	4	2	3	4	2	3	5	4
Number of jobs created[4]	508	2,188	1,280	1,020	1,164	4,218	471	1,139	1,349	587	1,133	1,460
% of active population	3.15%	9.02%	4.67%	1.77%	3.99%	4.34%	2.25%	3.05%	1.47%	1.81%	1.69%	2.58%
Employment multiplier[5]	1.28	2.69	1.98	2.98	3.05	3.40	1.35	2.42	1.66	1.77	2.21	2.24

* Regional GDP understood as the GDP of the counties where the Institutes are located.
[1] Extrapolated from GDP growth rates of Portuguese NUT III for the period 2000 to 2016.
[2] Considering a multiplier value of 1.7.
[3] Level of economic activity generated by each euro of public funding.
[4] Calculated based on the concept of apparent labour productivity.
[5] Calculated on the basis of the ratio between the number of jobs created and the number of employees of the Polytechnic Institute.

Source: Oliveira et al. (2019, p. 9)

The results of a study on the economic impact of IPCB in regional economy show the importance of this institution for the stimulation of regional economy, employment and attracting and retaining people (Nunes, 2019). Figure 14 shows the direct impact of IPCB on the Castelo Branco region. IPCB is the third major employer in the region, corresponding to 5.3% of the gross domestic product in de municipalities of Castelo Branco and Idanha-a-Nova. Each euro spent by the Portuguese state in financing IPCB generates an economic activity of 2,20 euros.

Figure 14

Direct impact of IPCB in the Castelo Branco region

	Value Obtained (€)
Total Direct Impact of IPCB in Castelo Branco (1+2+3+4)	**23 118 734,61 €**
(1) Annual expenditure of teachers	3 741 302,00 €
(2) Annual expenditure of staff	529 579,35 €
(3) Annual expenditure of students	18 554 361,44 €
(4) Annual expenditure of the institution	293 491,82 €

Source: Own elaboration, adapted from Nunes (2019)

3.2. Polytechnic University of Castelo Branco

3.2.1 History and organization

Instituto Politécnico de Castelo Branco, or Polytechnic University of Castelo Branco (as it is now called in English) is one of the twenty-seven public polytechnic HEIs in Portugal. IPCB is dedicated to teaching, training and research activities. It was legally created in 1979 by Decree-Law 513-T/79, 26 December, but its activities only started in October 1980 when the president of its first committee board was appointed.

IPCB started with two HE schools: Higher School of Agrarian Studies (ESACB) in 1983 and Higher School of Education (ESECB) in 1985. In the 1990s more higher schools were created and the number of students, teachers and technical and administrative staff rose. In 1990, the Higher School of Technology and Management (ESTIG) was created. In 1995 the first IPCB statutory regulations were published, mentioning that IPCB was composed by three higher schools: ESACB, ESECB, ESTIG, and two transversal centres, the Centre of Studies and Regional Development (CEDER) and Social Action Services (SAS). ESTIG was divided, in 1997, into the Higher School of Management (ESGIN) and the Higher School of Technology (ESTCB). In 1999, the Higher School of Arts (ESART) was created. In 2001, the Higher School of Health (ESALD), formerly an independent pre-university nursing school, integrated IPCB. Nowadays, IPCB is composed by six higher schools that are located in two different cities: Castelo Branco (ESA, ESE, EST, ESART, ESALD) and Idanha-a-Nova (ESG).

In terms of management and governance, IPCB is composed of executive and advisory bodies: the President, the General Council, the Management Council and Academic Board (IPCB, 2008). Working together with the President, the Management Council and the Academic Board there are Vice-presidents, the Administrator, Central Services, Social Action Services (SAS), the Coordinator of Quality and Assessment System (SGQ), Quality and Management Council, Academic Coordination Council, the Student Ombudsman, the Organic Units (Schools) and Functional Units (CEDER) (Figure 15).

Figure 15

IPCB organizational chart
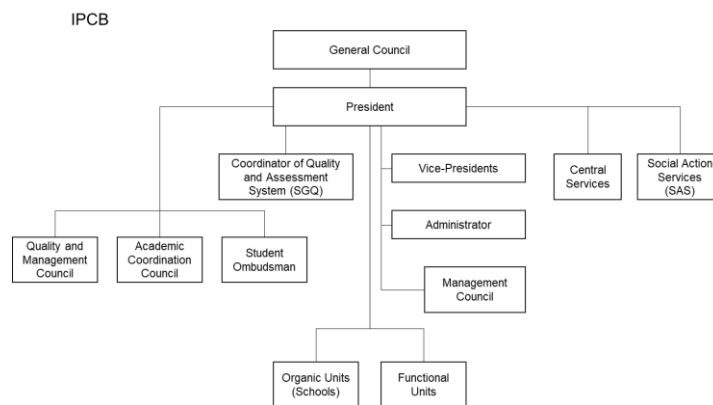
Source: Own elaboration. Adapted from Manual de Gestão (IPCB, 2017)

IPCB's organic units, or the higher schools, are organised as shown in the following organizational chart (Figure 16).

Figure 16

IPCB organic units organizational chart
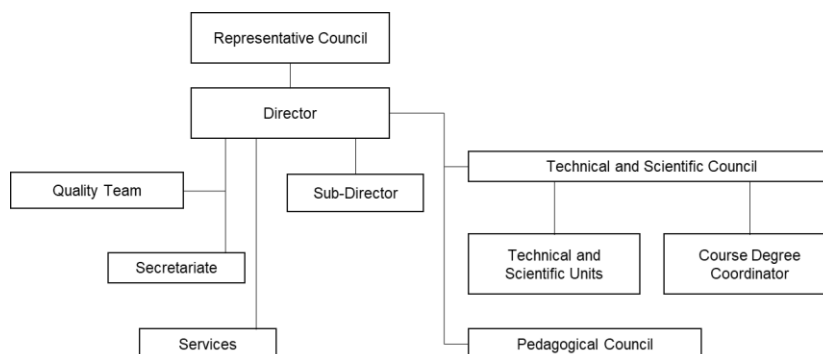
Source: Own elaboration. Adapted from Manual de Gestão (IPCB, 2017)

Each school has a Representative Council, consisting of nine representatives of teachers and researchers, four representatives of students and two representatives of staff. Every school has a director and a sub-director. There is a Technical and Scientific Council (CTC) composed by nineteen elected members. In the schools there are also Technical and Scientific Units (UTCs), which are administrative and academic support units that bring together all teaching staff in a particular academic area. They constitute human resources, materials and teaching activities management elementary units. For each school's degree course there is also a Coordinator or coordinating board. Each school has a Pedagogic Council composed of elected teachers and students represented in the same number.

There is a good articulation between the various structures and decision making is achieved through formal and informal meetings, which is important given that HE schools have little to none financial and decision-making autonomy given the centralised management and governance. The Technical and Scientific Councils (CTC), Pedagogic Councils (PCs) and Technical and Scientific Units (UTCs) are collegial structures with elected members that offer advice on the close running of schools in scientific, pedagogic and operational terms. They thus contribute to academic matters, learning and teaching that pertain to each school and its members may develop a greater sense of development, commitment and enthusiasm for the smooth running of teaching and learning, creation of proposals for new degree courses, and research initiatives. School directors and sub-directors, Presidents of the Technical and Scientific Council and of the Pedagogical Council and Heads of Technical and Scientific Units are local governance teams for schools and thus should constitute a cohesive structure that has the responsibility to lead academic and pedagogical viewpoints inside each school among teaching staff and students.

3.2.2. Mission, Principles and Values

IPCB's vision and mission is reviewed every three years through its Strategic Plan, although it has been defined over the years as being the qualification of professionals, the creation and transmission of knowledge, as well as the cultural,

artistic, technological and scientific training of its students. IPCB claims to value the outputs and wellbeing of teaching staff, researchers and non-teaching staff; to stimulate intellectual and professional training of its students and graduates; to promote national and international mobility among teaching staff, non-teaching staff and students; to participate in research, development, dissemination and knowledge transfer activities; and to economically value scientific knowledge, while promoting the dissemination of humanistic, artistic, scientific and technological cultures to society.

In the Strategic Development Plan 2019-22 (IPCB, 2019), IPCB sets its intention of expanding face-to-face and online education, of better preparing students for the job market, and of promoting teaching quality, supporting students and promoting their success. IPCB identifies, in line with its mission strategy, key values for the organization: ethics and transparency, effective communication, recognition of the excellence of people, cooperation and commitment to society, creativity, entrepreneurship and innovation stimulus and, finally, openness to the world (IPCB, 2019). These are strategic focal points that touch on human resources, the regional dimension, internationalisation, and research development and innovation.

IPCB's fundamental principles are based on the promotion of quality education, promotion and dissemination of knowledge in cooperation with job market needs, and direct communication with society. In order to implement and achieve these goals, IPCB aims to accomplish efficient, transparent and responsible financial management and governance, has a quality assurance and quality culture in place, and fosters the participation of students and of teaching and non-teaching staff in activities that they develop in close connection with regional community, thus achieving the local, regional, national and international professional integration of its students.

3.2.3. IPCB: Characterization by Numbers

In 2021, year of the last published Activities and Accounting Report, there were 650 members of staff/employees (teaching and non-teaching staff) working at IPCB (IPCB, 2022), as shown in Figure 17.

Figure 17

IPCB's Characterization by Numbers

Carreiras	F	M	SCP	SAS	ESACB	ESALD	ESART	ESECB	ESGIN	ESTCB	TOTAL
Dirigente 1º grau	0	1	1								1
Dirigente 2º grau	1	3	4								4
Docentes	189	235			51	99	112	61	37	64	424
Técnico Superior	62	23	28	4	19	9	9	6	5	5	85
Informática	3	8	8		1	1				1	11
Assistente Técnico	46	10	13	4	6	7	6	7	3	10	56
Assistente Operacional	42	27	5	13	16	8	6	7	3	8	69
											650

Note: Carreiras – careers; Dirigente 1.º grau – Level 1 manager; Dirigente 2.º grau – Level 2 manager; Docentes – Lecturers; Técnico Superior - Higher Technician; Informática - Information Technology; Assistente Técnico - Technical Assistant; Assistente Operacional - Operational Assistant
Source: IPCB Activities and Accounting Report 2022 (IPCB, 2023)

Data collected from the *Activities and Accounting Report 2021* indicate that the total number of teaching staff, distributed among the different professional categories, decreased between 2018 and 2020 (from 423 to 410) but overcame in 2021 and 2022 the number reached in 2017: there are 424 teachers working at IPCB, as shown in Figure 18, among coordinating professors (40), adjunct professors (259) and assistant teachers (125), part of which may be on a part-time contract.

Figure 18

Teaching staff working in IPCB from 2018 to 2022

	2018	2019	2020	2021	2022
■ Professor Coordenador	29	31	35	38	40
■ Professor Adjunto	258	244	249	253	259
■ Assistente	136	143	126	135	125

Fonte: Balanço Social
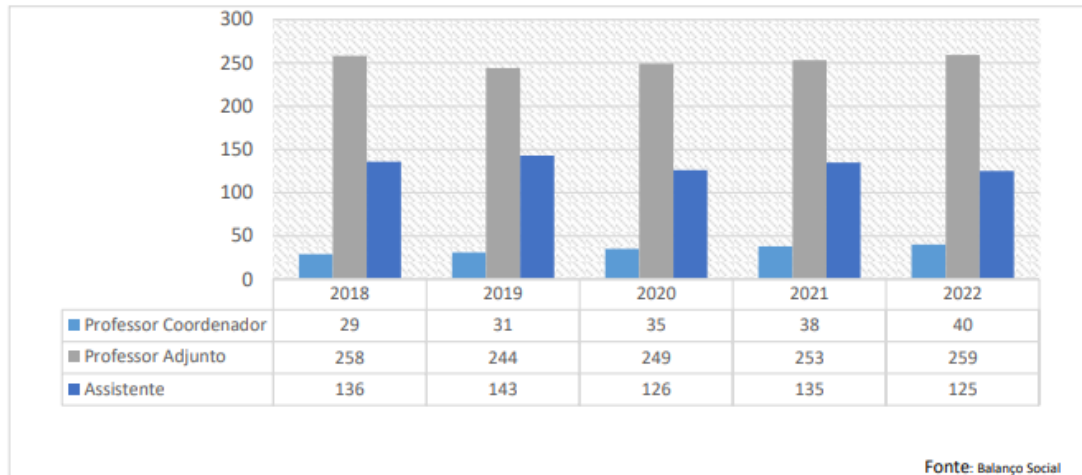
Note: Professor Coordenador - Coordinating Professor; Professor Adjunto – Adjunct Professor; Assistente - assistant teachers
Source: Activities and Accounting Report 2021 (IPCB, 2022)

The same report indicates that at IPCB there are more male teaching staff (55%) than female teachers (45%) as shown in Figure 19.

Figure 19

Teaching staff working in IPCB by gender
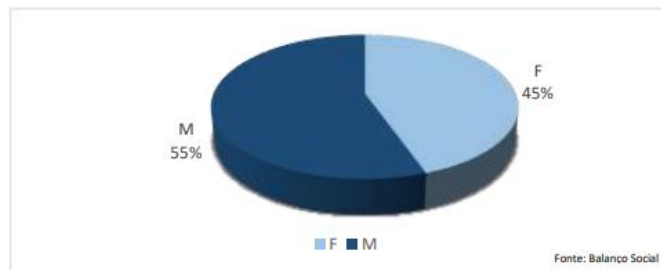
Source: Activities and Accounting Report 2022 (IPCB, 2023)

The *2022 Activity and Accounting Report* indicates that most teaching staff were between 45-49 years old (32 female, 43 male). The second higher group in terms of age, from 60 to 64, corresponds to 74 of the teachers (36 female, 38 male). There were 58 teachers within the age group 40 to 44 (23 female, 34 male), 56 in the group 55-59 (23 female, 33 male). 48 of teachers were aged between 35 and 39 (27 female, 21 male), 24 between 30 and 34 (8 female and 16 male). 14

teachers are younger than 30 years old and 9 older than 65, as seen in Figure 20.

Figure 20

Teaching staff working in IPCB by gender and group age
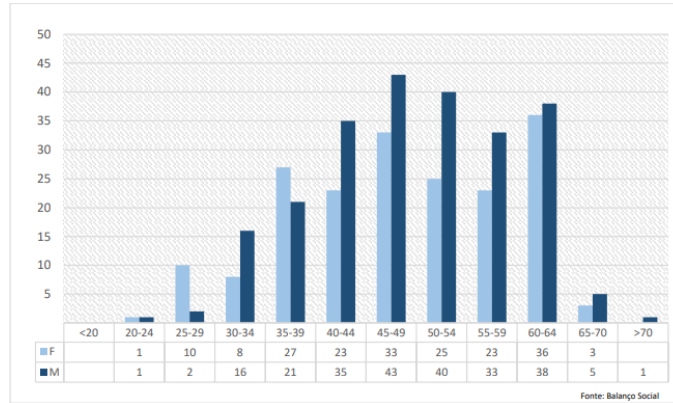
Source: Activities and Accounting Report 2022 (IPCB, 2023)

Figure 21 represents the teaching staff type of contract with IPCB, also by gender. The graph shows that among the teaching staff (424), 210 had fixed-term contracts (either part-time or full time) and 214 had open-ended or permanent contracts.

Figure 21

Teaching staff working in IPCB by gender and type of contract.
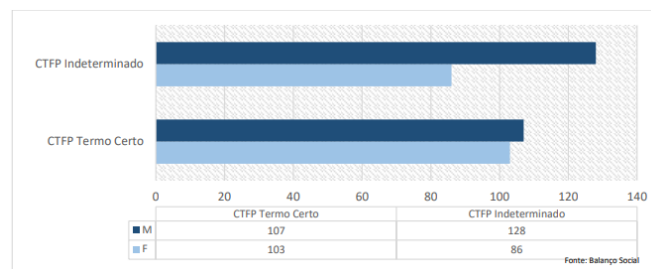
Note: CTFP Indeterminado - open-ended or permanent contracts; CTFP Termo Certo - fixed-term contract
Source: Activities and Accounting Report 2022 (IPCB, 2023)

Regarding academic qualifications of teaching staff, in 2021, 199 teachers (90 female, 109 male) had a doctorate degree, 123 (54 female, 69 male) held a master's degree, and 99 were graduates (44 female, 55 male), as seen in Figure 22.

Figure 22

Teaching staff academic qualifications by gender
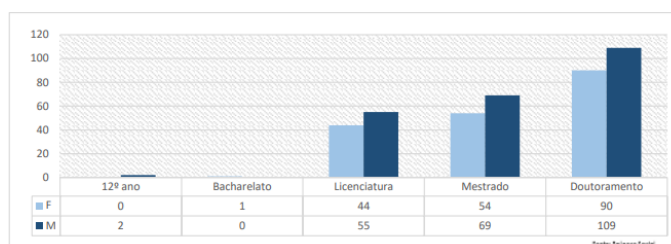
Source: Activities and Accounting Report 2022 (IPCB, 2023)

In the academic year 2021-2022, 1282 new students chose IPCB to study. Table 9 displays the total number of students enrolled in IPCB courses by 2022.

Table 9

Number of students enrolled in IPCB courses by school and type of course

	ESA	ESE	ESG	EST	ESALD	ESART
CTeSp	87	87	6	146	----	31
Undergraduation	406	645	466	692	798	617
Post-graduation	67	---	35	---	---	---
Master's Degree	33	139	82	30	56	259
TOTAL	593	871	589	868	854	907

Source: Own elaboration based on data collected from the Activities and Accounting Report 2022 (IPCB, 2023)

The students enrolled in IPCB courses attended, in the academic year 2022-2023, seventeen Technical Higher Education Courses (CTeSP) (five at ESA, one at ESART, three at ESE, one at ESG and seven at EST), thirty undergraduate degrees (four at ESA, seven at ESART, four at ESE, four at ESG, five at ESALD and six at EST), three postgraduate degrees (one at ESG and two at ESA), and eighteen master's degrees (two at ESA, six at ESART, five at ESE, two at ESG, one at ESALD and two at EST). Students are represented, as described before, at several institutional-level governance and advisory bodies (the Representative Council and the Pedagogical Council) and so their collegial involvement is expected. At the level of courses they attend, students are invited each semester to comment on their learning experience and give feedback to teaching staff through transparent communication channels.

All the degree courses provided by IPCB are under an internal system for quality assurance in pedagogical and academic terms that involve collegial actions among the teaching staff of any degree course to oversee its academic quality under the responsibility of the course coordinator. All its courses also fall under the requirements of an external accreditation body, the Higher Education Evaluation and Accreditation Agency, and are audited roughly every four years. Teaching staff also collaborates in formal (through detailed analysis at course level) and informal ways to address issues pertaining to student progress and achievement. From these common collegial efforts revised curricula may emerge, as well as changes that support transformation of learning and teaching, and identification of training needs.

Within the framework of ERASMUS+ Programme IPCB participates in regular collaboration activities that involve students, teaching staff, and non-teaching staff. In 2020-2021, the number of outgoing mobility grants was lower than in previous years due to the Covid19 pandemic situation. However, in the second semester of 2021 there was an increase in the number of mobility grants. In the first semester of 2021 mobility actions were prepared with considerable difficulties with problems arising from the evolution of the pandemic situation. Some students did not go on programmed mobility actions and some partner institutions refused to accept students (namely for internships). In the last years there has been a decrease in incoming students mobility, this being more evident in the first semester of 2021, even though there was one more incoming student in 2021 compared to 2020 (IPCB, 2022).

In 2021-2022, with the overcome of the pandemic situation, the number of outgoing mobility actions increased. The number of incoming students also increased, as shown in Figure 23, which indicates the number of IPCB outgoing and incoming students in 2020 and 2021.

Figure 23

Number of IPCB outgoing and incoming students

UO	ALUNOS OUTGOING		ALUNOS INCOMING	
	2021	2022	2021	2022
ESA	12	10	6	8
ESALD	22	30	8	14
ESART	8	26	7	22
ESE	9	3	41	19
ESG	15	7	13	7
EST	5	6	7	16
TOTAL	71	82	82	86

Note: Alunos outgoing – outgoing students; Alunos incoming – incoming students

Source: Activities and Accounting Report 2022 (IPCB, 2023)

Teachers' mobility also suffered some drawbacks in 2020-2021, mainly related to the Covid-19 pandemic situation. In 2021 and 2022 there was an increase in the number of outgoing and incoming teaching staff mobility grants, as displayed in Figure 24.

Figure 24

Number of IPCB outgoing and incoming teachers.

UO	DOCENTES OUTGOING		DOCENTES INCOMING	
	2021	2022	2021	2022
ESA	3	8	1	6
ESALD	4	11	2	3
ESART	4	10	2	7
ESE	3	15	0	5
ESG	3	7	0	2
EST	2	15	1	14
TOTAL	19	66	6	37

Note: Docentes outgoing – Outgoing teachers; Docentes incoming – Incoming teachers

Source: Activities and Accounting Report 2022 (IPCB, 2023)

Besides ERASMUS+ students, IPCB received other international students, mainly due to the efforts to attract new students to the institution. These students came mostly from the Community of Portuguese Speaking Countries (CPLP): Angola, Brazil, Cape Verde, Guiné Bissau, Mozambique and St. Tomé and Príncipe. There was also a cooperation with Macao Polytechnic Institute (IPCB, 2022).

3.3. Internationalisation policies and English across the Polytechnic

During the last decades IPCB has been pursuing an internationalisation policy through encouraging mobility of its staff and student body as well as through research and partnerships with foreign universities. Encouragement of students and of teaching and non-teaching staff mobility, cooperation with national and international institutions and organizations, as well as development of international research programs have been some of IPCB's strategic policies to increase internationalisation and capacity building.

Between 2009-12 with the implementation of the Bologna process at IPCB, several changes were implemented, namely, encouraging students and staff mobility abroad and the development of language competences through the implementation of a foreign language curricular unit in every degree course. Language policy was a priority area. The development of students' foreign language skills was highlighted so that IPCB students were fully prepared for the national and international job market, as was the reinforcement of teaching staff foreign language skills, namely English, for successful cooperation abroad. This strategy accompanied the Bologna process, which intended to standardize the European higher education system. The whole process of internationalisation was supported by the International Relations Office, while language learning and teaching to incoming and outgoing students was attributed to the Languages, Cultures and Education Centre (CILCE).

Another implemented policy was the stimulus to national and international academic and scientific research. Teachers were encouraged to publish indexed articles by receiving funding they could reuse in scientific activities, such as going to conferences. To support these endeavours, a free-of-charge service was created for IPCB teachers and researchers at CILCE to academically review their outputs in English.

Since 2018, IPCB's international policies described in the new strategic plan determined the increase of the number of international students but less attention was given to language teaching and learning or the strengthening of a language policy. To achieve the internationalisation goal, dissemination was done, and cooperation was developed, with PALOP countries (*Países Africanos de Língua*

Oficial Portuguesa, Portuguese-speaking African Countries in English) and Brazil. This strategy increased the number of international students. In the *2021 Activities Report* (IPCB, 2022), 918 international students applied to IPCB, 280 were admitted, and 202 enrolled in IPCB degrees, as shown in Figure 25.

Figure 25

Number of International Students in IPCB

Estudante Internacional 2022	Candidaturas	Admitidos	Matriculados	Matriculados/ Admitidos (%)
1.ª fase	667	235	182	77,45%
2.ª fase	163	85	30	35,29%
Total	**830**	**320**	**212**	**66,25%**

Note: Estudante Internacional 2022 – International Student 2022; Candidaturas – applications; Admitidos – Accepted; Matriculados – Enrolled; Matriculados/ Admitidos – Enrolled/ Accepted; 1ª fase – 1st stage; 2.ª fase – 2nd stage
Source: 2022 IPCB Activities Report (IPCB, 2023)

This particular internationalisation policy measure did not increase the need for subjects/ degrees taught in foreign languages (English), since students coming from Portuguese speaking countries require support with academic Portuguese and have little practice in foreign languages such as English. While the teaching of foreign language for specific purposes, such as English, did not cease to be relevant, other needs emerged, such as the need of a pluriliteracies approach across the curriculum and capacity building of staff to teach foreign students who speak Portuguese as a second of foreign language.

Parallel to international students, Erasmus students and Chinese students who study at IPCB, have the expectation of English being used as an instruction language side by side with Portuguese, which put additional pressure on teacher proficiency in English and their ability to teach through English (EMI), although no specific steps were taken to support teachers in these endeavours.

To respond to students' needs and teacher's job requirements, which include research and publishing of scientific papers in English, presenting at conferences and international meetings, engaging and collaborating in international projects, among others, the development of students and teachers' language skills is necessary. This thesis intends to explore the ideal conditions (emphasising the

importance of teacher collaboration) to implement ICLHE/CLIL as a way to increase teachers and students' competences in English and contribute to the effective internationalisation of IPCB.

3.4. Collegiality and Collaboration: Situations where teachers meet and work together in the IPCB context

At IPCB there are many situations, formal and informal, where teachers meet and work together at school level. There are formal meetings, such as those of the Scientific Technical Council (CTC), Pedagogic Council, Technical Scientific Units (UTC), and the Representatives' Council.

According to legal frameworks in place and despite the limited autonomy of each individual school (Santiago et al., 2006), CTC is a collegial body which defines education, training and research policies directly contributing to the accomplishment of IPCB's mission. During these meetings elected teachers make decisions and vote on academic matters, research and teaching and learning matters, such as on commenting the creation, transformation, or extinction of organic units of the institute; deliberating on teaching staff service distribution; accrediting, approving and changing degree courses; commenting on legislation pertaining to the HE teaching career; proposing teaching and career staff; and approving regulations for class attendance, transition of year and precedencies, after consultation with the Pedagogic Council (EST-IPCB, 2010). CTC is by nature an interdisciplinary body that can revise curricula and courses, prioritise scientific-pedagogic staff positions and support transformation and change in learning practices. It works in close connection with the Pedagogical Council and the Technical Scientific Units in these matters, which bring together more teaching staff and also address the same matters but have no power to approve them.

There are specific roles attributed to the Pedagogical Council, which also elects students besides teaching staff. Those roles are mainly connected to teaching and learning, such as defining assessment, analysing pedagogical success and standards and issuing internal regulations (EST-IPCB, 2015). Nominated degree course coordinators will have a seat at the Technical Scientific Units of each

school and their role facilitates collaboration among all teaching staff teaching on the same degree course as it is their responsibility to bring all together to: analyse different curricular units' learning objectives in line with the course degree's training objectives; organise accreditation of curricular units; discuss emerging learning and teaching issues with teaching staff; as well as coordinate tutorials and traineeships (IPCB, 2008).

At the informal level, teaching staff work collaboratively in course degree meetings or in teams to define syllaby. They jointly prepare self-assessment degree course reports for the external assessment visits of the Agency for the Assessment and Accreditation of Higher Education (A3ES) and, on receiving external evaluations, carry out meetings to prepare the answers to the questions and comments raised. Permanent teaching staff also has the responsibility of organising and be part of juries (master's degree, specialist, internships, state job competitions, etc.), among several other duties that may bring individuals together and promote exchange of interdisciplinary perspectives. There are formal bodies, such as the Ethics Commission, which operates above school level, that brings together teaching staff and non-teaching staff regularly to analyse and approve ethical standards for research undertaken at IPCB by researching teachers and students. There is also a Centre for Regional Development Studies (CEDER), above school level with representatives from each individual school that holds the responsibility to support the IPCB research community with administrative tasks and promote knowledge transfer. It is an important link to the existing research centres and their outputs.

The research culture at each individual school is supported by groups of teachers, the existence of research units and externally funded projects. These may be national, regionally commissioned, and international. However, collective research is not easy, as most teaching staff will have acquired their qualifications at universities and have remained part of their (university) research centres. Despite this constraint, there are some instances of inter-school research, interdisciplinary and multidisciplinary research, which are mostly triggered by individual researchers.

When teachers are involved in research projects, such as ERASMUS+ or Science and Technology Foundation (FCT) funded projects, they have formal

working meetings to discuss ideas or make decisions. INCOLLAB Erasmus+ project is an illustrative example of a Community of Practice where teaching staff from different European countries collaborated to design, plan and implement several interdisciplinary modules in a foreign language (Spanish, German or English) about 21st-century skills, tourism and management, social sciences, business and economy, and industry and technology topics.

In the project INCOLLAB, in which the author of this thesis was a researcher, there were several types of meetings. Each partner had internal meetings managed by its national coordinator, in which decisions were made related to the design, planning and improvement of teaching modules, to research planning and articles' publications or projects' reports. There were also smaller meetings, within each module's team, to discuss ideas about the design and implementation of the modules and the work to be developed by each member of the group. These teams could be national, when all the group members were from the same country, or could be international, when there were members from several countries of the partners. There were also management meetings, where all partners' staff took part, in which decisions related with budget, dissemination, following up of the work developed by partners, research, writing of reports decisions, among others, were made.

During the duration of this project IPCB teachers developed collegial relationships, across schools, which is not very common. Even though they work in the same institution, they work in different schools separated by several kilometres. Teachers also engaged in different types of collaboration. Content and language teachers cooperated to implement ICLHE/CLIL approach in their classes. They planned, designed, and implemented CLIL modules to develop students' linguistic and technical skills. Several types of implementation were developed: the content or the language teachers implemented the modules by themselves, even though it was planned by both; content teacher implemented one part of the module and the language lecturer implemented the other; content and language teachers implemented the module together. Teachers referred this experience to be very enriching (Pereira et al., 2021; Sampaio et al., 2021).

Moreover, they prepared conference presentations and wrote together research articles and case studies on their experiences (Koris & Pál, 2021; Pereira et al.,

2021; Piquer-Píriz et al., 2021; Piquer-Píriz & Castellano-Risco, 2021; Sampaio et al., 2021).

These types of projects undoubtedly contribute to higher education teachers' collaboration as HE teachers' jobs imply doing research and they also need to publish scientific articles so they can progress in their careers. If they collaborate with each other to write it, it becomes easier and a very enriching experience at the same time.

Another way of being involved in research groups is by teaching staff belonging to national and international research centres and groups. In 2017, as a way to reinforce its position on the Portuguese scientific and technological system, a team for the support of the creation and assessment of Research and Development Units (UIDs) was created at IPCB (Despacho N.º 112/17, 2017). Following on this process, six UIDs were created at IPCB: AGECOMM (*Unidade de Investigação Interdisciplinar - Comunidades Envelhecidas Funcionais*) on active ageing; CERNAS (*Centro de Estudos em Recursos Naturais, Ambiente e Sociedade*) on environmental issues; CIPEC (*Centro de Investigação em Património, Educação e Cultura*) on cultural heritage; DISAC (Digital Services, Applications and Content); and QRural (*Qualidade de Vida no Mundo Rural*) on life quality in rural areas. Research is by definition applied and the units intend to promote cooperation with similar national and international organizations and other organizations; and foster applied research and knowledge transfer in partnership with local industry and responding to local needs (IPCB, 2018).

These IPCB UIDs contribute to promote collegial relationships among teachers as well as their collaboration. Within these research units, lecturers can meet formally to make decisions, which are part of the collegial institutional decisions, and they can also meet informally to discuss new ideas for research and projects, which are part of personal collegial relationships of teaching staff. The great advantage of participating in these local research units, that may be underfunded by national bodies, is that IPCB researchers can create synergies and not be dispersed among university research centres (Ritz et al., 2011).

IPCB also provides specific services within several intervention areas which reflect academic work, research capacity and cooperation diversity. There are

four of these labs at IPCB: the Language Centre, called *Centro Interdisciplinar de Línguas, Culturas e Educação,* The Pedagogic Health Clinic, entitled *Clínica Pedagógica da ESALD;* the Early Learning Centre, called *Centro de Aprendizagem e Desenvolvimento da Infância;* and the UNESCO club on science, tradition and culture: *Clube UNESCO Ciência, Tradição e Cultura.*

CILCE offers high foreign language quality services, including Portuguese as a foreign language. It supports capacity building of both teaching staff and students, by promoting language courses and language events. It further supports teaching staff academic output by supporting them through translation and linguistic consultation. Language teachers at CILCE are used to interdisciplinary collaboration with teachers from every individual IPCB school.

Clinica Pedagógica da ESALD provides differentiated health services to the Castelo Branco community. It also intends to: approximate schools activities with clinical practice; create internships for students; incorporate real cases in classroom contexts; encourage scientific health research to search for innovation and new treatment procedures; foster cooperation with other HEIs, associations and companies to improve the quality of healthcare services and resources optimization; and improve technical IPCB staff satisfaction and productivity by encouraging health education programmes and making prevention and specific intervention programmes available.

Centro de Aprendizagem e Desenvolvimento da Infância (CeADIn) is a learning educational centre whose main goal is to provide a quality service to the Castelo Branco's school community to foster learning success.

In *Clube UNESCO Ciência, Tradição e Cultura*, science is integrated with arts, music through research relative to the restoration, interpretation and explanation of local culture and traditions; production and dissemination of ideas and materials; as well as initial and in-service training of teachers, kindergarten educators, moderators, and other educational staff.

In these labs, teaching and non-teaching staff cooperate to offer the best quality service and collaborate to find the best solutions and practices.

Besides all these formal meetings and structures, IPCB teaching staff get together informally. Within the Portuguese context, drinking a coffee or meeting

for lunch is a very common situation. During these relaxed and informal breaks teaching staff may have informal work or research talk. They can also agree to meet informally for research purposes, for example to prepare articles or conference papers. In less common cases, teachers discuss pedagogies, the way they teach and ways of working together.

These collaborative situations will be used in this study with the purpose of analysing the nature of teaching staff cooperation.

Chapter 4

Research Methodology and Design

4.1. Research objectives and rationale for the study

This thesis intends to study the potential of interdisciplinary teacher collaboration for implementing a ICLHE/CLIL approach in a Portuguese Higher Education Polytechnic Institute by assessing teacher autonomy, collegiality, collaboration, and language competence. It aims to determine the optimal conditions for interdisciplinary teacher collaboration for ICLHE/CLIL in a Polytechnic HE institution in Portugal by:

1. Researching, reviewing, and analysing the previous literature about Content and Language Integrated Learning (CLIL) and Integrating Content and Language in Higher Education (ICLHE), teacher autonomy, teacher collegiality, and language competence (Part One).

2. Understanding how the four different variables (teachers' autonomy, collegiality, collaboration, and language competence) influence and create conditions for interdisciplinary teacher collaboration for CLIL in Higher Education (Part Two).

Considering the importance of developing internationalisation strategies to prepare their students for a globalised job market, this research further explores the ideal situations for interdisciplinary teacher collaboration for ICLHE/CLIL in a Polytechnic HE institution located in an in-land region of Portugal.

Research indicates that ICLHE/CLIL can help improve HEIs internationalisation quality (Gosling & Yang, 2022; Luprichová & Hurajová, 2017; Montoya & Salamanca, 2017; Murillo, 2019). It also increases students' engagement by enhancing their motivation (Arribas, 2016; Doiz et al., 2013a; Lasagabaster, 2011; Verspoor et al., 2015).

This study contributes to research about ICLHE/CLIL in higher education, which is limited in Portugal. It also contributes to ICLHE/CLIL research by exploring the optimal conditions for interdisciplinary teacher collaboration for ICLHE/CLIL in a particular context in the hope that it can be of use to other contexts.

Data collected through this research study will bring evidence on how teacher collaboration can enhance ICLHE/CLIL implementation in Higher Education Institutions. Consequently, it is hoped that it will pave the way for its implementation in contexts with similar characteristics to that described in the case study.

A mixed methods research approach was chosen, which is sustained by data collected through quantitative (Likert questionnaire) and qualitative (semi-structured interview) instruments.

4.2. Research questions and research design

Based on the aims of the study, and according to the proposed model, four Research Questions (RQ) were formulated:

RQ1: To what extent does teacher autonomy influence collaboration in ICLHE/CLIL practices in a Portuguese Higher Education Polytechnic?

RQ2: To what extent does teacher collegiality influence collaboration in ICLHE/CLIL practices in a Portuguese Higher Education Polytechnic?

RQ3: To what extent do teacher and student language competence influence collaboration in ICLHE/CLIL practices in a Portuguese Higher Education Polytechnic?

RQ4: To what extent do teacher autonomy, collegiality, and L2 competence have a role in teacher collaboration that would allow good ICLHE/CLIL practice in a Portuguese Higher Education Polytechnic?

These RQs are visually represented in Figure 26.

Figure 26

Research Questions and Research Design
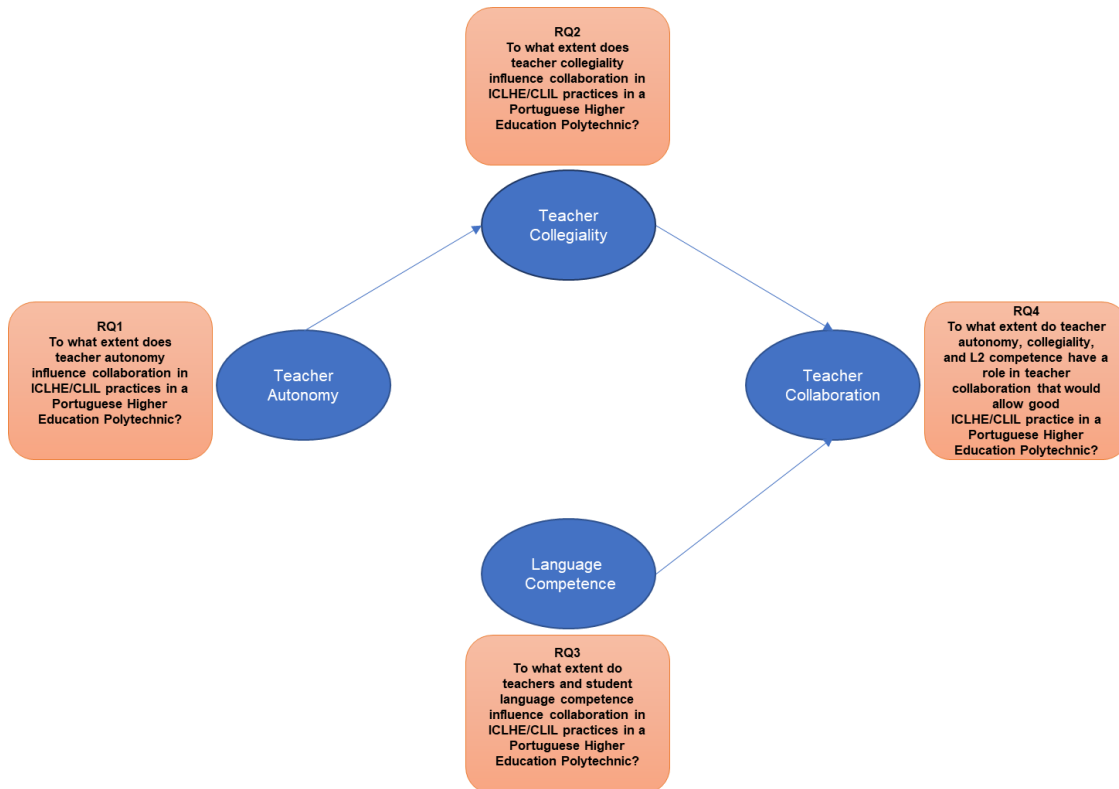
Source: Own elaboration

Following the main insights derived from the conceptual framework in Part One of this dissertation, several hypotheses were raised.

First, teacher professional autonomy is defined as "freedom for", which involves social interaction, personal development, and self-improvement (Gavriliuk & Lakhno, 2013). Teacher autonomy is also considered an important factor to prevent teacher attrition (Gavriliuk & Lakhno, 2013).

As defined in Chapter 2, Section 2.2.1., collegiality refers to the cooperative relationship among colleagues in a professional environment. This definition comprises three main terms, "cooperative", requiring some sort of cooperation or collaboration; "relationship" indicating interdependence; and "colleagues" emphasising professional connections. The term collegiality entails cooperation among colleagues and involves their relationships.

Considering the potential connection between teacher collegiality and teacher autonomy, the following hypothesis was formulated:

H1 – There is a positive direct relationship between Teachers' Autonomy and Teacher Collegiality.

Secondly, Higher Education teachers often have a high level of autonomy to adapt their curriculum and methodologies. Teacher autonomy is often linked to independency and individuality, thus excluding collaboration and collaborative work by definition (Vangrieken et al., 2017).

Despite a potential paradoxical relationship, a connection between teacher autonomy and teacher collaboration can be seen as important to develop the ICLHE/CLIL approach. Autonomy can lead teachers to work alone and isolated, but simultaneously, it can be the reason for lecturers to embrace new challenges and approaches that might involve collaboration.

As a result, the following hypothesis was formulated:

H2 – There is a positive direct relationship between the Teacher Autonomy and Teacher Collaboration.

Thirdly, teacher collegiality can be understood in two different ways: interpersonal relationships teachers develop within the institution and their professional relations, and collegial institutional "mandatory" collaborations where they make decisions cooperatively as part of their jobs.

Therefore, the following hypothesis was made:

H3 – There is a positive direct relationship between Teacher Collegiality and Teacher Collaboration.

Fourthly, considering the potential close relationship between teacher autonomy and collaboration, their collegial relationships, whether forced or spontaneous, can facilitate this cooperation. These three variables may be connected.

Hence, the following hypothesis was formulated:

H4 – The relationship between Teacher Autonomy and Teacher Collaboration is mediated by Teacher Collegiality.

Finally, ICLHE/CLIL entails collaboration between content and language teachers. Providing students with technical skills and language competence at

the same time can be seen as a solution for internationalisation and global job market requirements.

Several studies indicate that the linguistic competence of the teachers is essential (Chostelidou & Griva, 2014; Dafouz et al., 2007; Macaro et al., 2019; Vega & Moscoso, 2019; Vilkancienė, 2011) for them to be willing to integrate and be part of ICLHE/CLIL. Thus, language competence will possibly influence this collaborative relationship. In a CLIL classroom, teachers are not only responsible for teaching the content but also for enabling language learning in the target language. Therefore, for a lecturer to successfully integrate and participate in ICLHE/CLIL, they must hold strong linguistic competence in the target language.

However, not only teachers' language competence, but also students' linguistic skills may influence teachers' collaboration for ICLHE/CLIL. Students' linguistic skills can impact on teachers' decisions to collaborate or not in ICLHE/CLIL settings. If students have a relatively high level of proficiency in the target language, teachers may feel more confident and motivated to collaborate in delivering ICLHE/CLIL instruction. When students can understand and express themselves well in the language of instruction, teachers may find it easier to plan and execute collaborative lessons. On the other hand, if there is a significant difference in students' language skills within a class, teachers might face challenges in finding appropriate ways to approach collaboration with the language teacher to implement the ICLHE/CLIL approach.

Teachers may also show reluctance to collaborate if they perceive that addressing students' diverse linguistic skills will require a substantial amount of extra time and effort in lesson planning and management. Students more susceptible to engage in CLIL activities will probably have higher language skills. Consequently, teachers' language competence and students' language skills may have a positive effect on teachers' collaboration for implementing ICLHE/CLIL.

As such, the following hypothesis was made:

H5 – There is a positive relationship between Language Competence and Teacher Collaboration.

Figure 27 shows the structural model relationships and the proposed hypotheses.

Figure 27

Proposed structural model and hypotheses

TA – Teacher Autonomy
TC – Teacher Collegiality
COL – Teacher Collaboration
LC – Teacher Language Competence
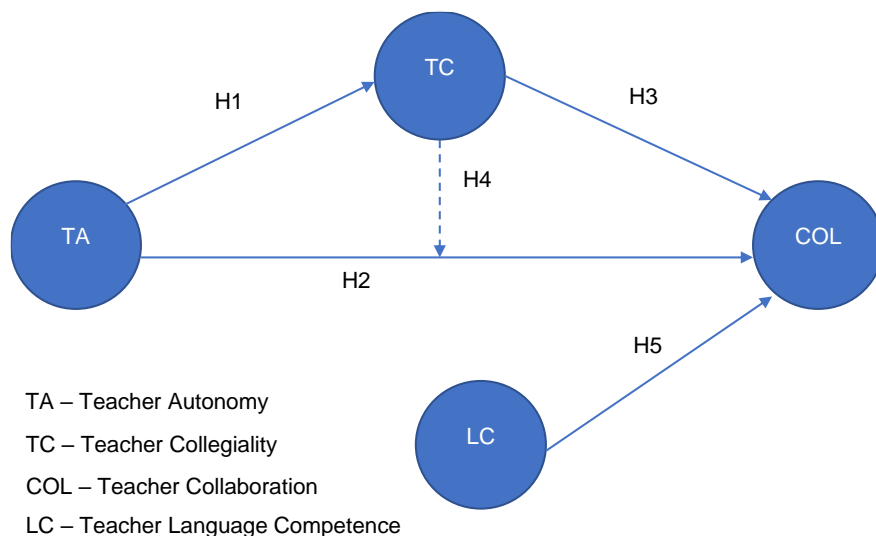
Source: Own elaboration

In this model continuous lines represent positive direct relationships while the dotted line represents a mediating effect of teacher collegiality on the relationship between teacher autonomy and teacher collaboration. H1, H2, H3, H4 and H5 represent the hypotheses.

4.3. Mixed Methods Research (MMR)

In this study, a mixed methods approach was followed, considering quantitative and qualitative data. According to Johnson et al. (2007), a mixed-methods approach provides a more complete picture and greater understanding of the collected data. Mixed methods research (MMR) is the combination of quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study (Johnson et al., 2007) and it is considered desirable in the field of CLIL research (Pérez Cañado, 2012).

MMR, defined as a method of both quantitative and qualitative designs in the same research study, developed as a reaction to the observed limitations of both quantitative and qualitative designs on their own (Caruth, 2013). According to the

author combining the methods can balance each other off, offering richer insights, and result in more questions of interest for future studies.

Greene et al. (1989) created a figure with the proposed design options for the different mixed-method purposes. The array suggests that design options are limited to some extent and narrow for some mixed-method purposes but more flexible and wider for others. The authors propose the following order from the most to the least constrained design options for mixed methods: triangulation, complementarity, development, initiation, and expansion.

The first reason is triangulation, which enables convergence and contrast of evidence collected as well as establishing correspondence between results obtained from different methods. Complementarity, the authors' second reason involves the explanation, development, design, and clarification of the results from one method with the results from the other method. The third reason is development, which implies using the results from one method to help develop or report about the results obtained from the other method, where development is generally interpreted to include sampling and implementation, as well as measurement decisions. Initiation is the fourth reason and it implies the discovery of paradox and inconsistency, new perspectives on contexts, the remodelling of questions or results from one method with questions or results from the other method. Finally, the fifth reason is expansion, which enables enlarging the scope and range of inquiry by using different methods for different investigation components. Figure 28 represents the funnel array of recommended design options for the various mixed-method purposes:

Figure 28

Flexibility of design options for mixed-method purposes
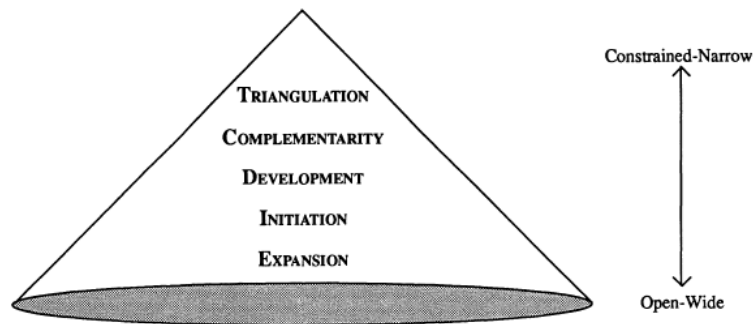
Source: Greene et al.(1989, p. 270)

Concurrent triangulation design is followed within mixed methods research with quantitative and qualitative data collection occurring simultaneously in a first stage of the study and the combination of quantitative and qualitative research in the analysis phase (Creswell, 2009; Creswell et al., 2003).

Creswell's (2003) representation of a concurrent triangulation design is followed in this investigation, as represented in Figure 29.

Figure 29

Concurrent Triangulation Design
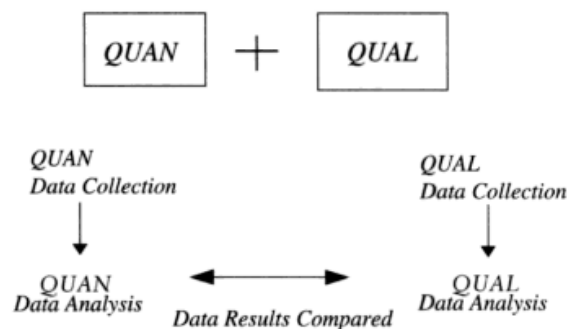
Source: Creswell et al.(2003, p. 194)

In the first stage of data collection, data was simultaneously collected through a QUAN instrument (a Likert type questionnaire) submitted to IPCB lecturers, and through a QUAL instrument (semi-structured interview questionnaire) sent to IPCB lectures who had experience in collaborating for ICLHE/CLIL. After collection stage, data from the different questionnaires were analysed separately.

Finally, at the discussion stage, results from both the Likert type questionnaire and the semi-structured interviews were compared for convergences, differences, or combinations (Creswell, 2009).

4.4. The Case Study Approach

This research uses a case study methodological approach. The case study was found to be a suitable methodological approach because it seeks to investigate a phenomenon within its real-life context (Yin, 2009) and its procedures imply an intensive study of a particular unit, with the aim to replicate its conclusions upon other units (Gerring, 2004). Additionally, the case study is a research approach that enables the exploration of a phenomenon using a variety of data sources (Baxter & Jack, 2008) and is transdisciplinary, which implies that it has been used in a multitude of research fields, such as social sciences, business, applied sciences, and humanities, among others (VanWynsberghe & Khan, 2007).

The use of the case study approach has been also widely used in educational and teaching research (Breslin & Buchanan, 2008; Morgado et al., 2017; Sampaio et al., 2021; Wood et al., 1991) and in teacher collaboration research as well (Akyel, 2000; Arau Ribeiro et al., 2018; Gaspar et al., 2016; Graham, 2007; Hixon, 2014).

In recent years, the use of case studies in applied linguistics, particularly in learning and multilingualism, has been growing gradually (Duff, 2014). Seen as a strong research method (Flyvbjerg, 2006; Yin, 2013; Zainal, 2007), case studies have the advantage of producing in-depth research capable of helping to understand concrete and specific cases and contributing to the systematic production of other examples and of effective general insights (Flyvbjerg, 2006).

This case study is focussed on one specific HEI, the Polytechnic University of Castelo Branco (IPCB). The use of mixed methods research and the case study approach aim to understand which are the optimal conditions for interdisciplinary teacher collaboration for ICLHE/CLIL at this particular HEI.

Table 10 was developed to help visualize the sample sizes of the QUAN and QUAL research instruments:

Table 10

Samples sizes

	Population/ Sample	**Responses**	**Total**
(QUAN) Likert Questionnaire	429	194	194
(QUAL) Semi-structured interview	*8*	*8*	*8*

Source: Own elaboration

Given the quantitative study methodological approach, component based SEM (Structural Equation Models) analysis (PLS-SEM) and measurement models, the number of responses fills the minimum requirements (Hair et al., 2017). In addition, the small qualitative sample "helps the investigator guarantee a thorough, in-depth qualitative exploration and a rigorous, high-power quantitative examination of the topic" (Creswell & Clark, 2017, p. 191).

According to Creswell and Clark (2017) size difference is not a problem because the purpose is to combine the conclusions by gathering the two different samples. Quantitative data collection seeks to make generalizations of a population while qualitative data collection intends to develop an in-depth understanding from a few people. The quantitative questionnaire was sent to all teaching IPCB staff. The semi-structured interviews were conducted with eight teachers that have experimented with ICLHE and so may offer valuable insights into the implementation of ICLHE. Further details are provided in the next section.

4.5. Description of the sample

As mentioned in the previous chapter, the target population of this study is represented by the IPCB lecturers, who according to data from the IPCB schools' webpages were 429 lectures at the time of data collection.

Table 11 represents IPCB teaching staff separated by school.

Table 11

IPCB's Schools and teachers

School	Web page	Teachers	%
Escola Superior Agrária (ESA)	https://www.ipcb.pt/estcb/corpo-docente	48	11,2%
Escola Superior de Artes Aplicadas (ESART)	https://www.ipcb.pt/esart/corpo-docente	117	27,3%
Escola Superior de Educação (ESE)	https://www.ipcb.pt/esecb/corpo-docente	66	15,4%
Escola Superior de Gestão (ESG)	https://www.ipcb.pt/esgin/corpo-docente	40	9,3%
Escola Superior de Saúde Dr. Lopes Dias (ESAL)	https://www.ipcb.pt/esald/escola-superior-de-saude-dr-lopes-dias	89	20,7%
Escola Superior de Tecnologia (EST)	https://www.ipcb.pt/estcb/corpo-docente	69	16,1%
Total		**429**	**100,0%**

Source: Own elaboration, based on data from the IPCB webpage at time of data collection.

All IPCB teachers were asked to respond the survey. Table 12 portrays the fieldwork descriptive statistics data sheet.

Table 12

Fieldwork data sheet APA

Statistical universe	The set of teachers affiliated in IPCB
Method of gathering and information	Online survey
Sampling unit	IPCB teacher
Population/sample	429 lectures
Fieldwork period	1st semester 2022/23
Number of responses	194
Valid responses	194
Sampling error*	0%
Confidence level	95%

*Computed at: https://www.sphanalytics.com/sample-error-calculator/ Source: Own elaboration

Lecturers were surveyed, and two reminder emails were sent. All the questions in the survey were mandatory, therefore there were not any incomplete responses. Regarding response distribution, Table 13 shows the number of responses per school and the response rate, and a general response rate of 45.2%, which varies according to school. ESART, with a response rate of 32.5% represents the school with the lowest response rate, yet the second one in terms of number of responses. ESA, with a response rate of 64.6%, represents the school with the highest response rate. Regarding the schools with the highest and the lowest count of responses, ESG, with 19 responses, presents a response rate of 47.5% and represents the school with the lowest number of responses.

EST, with 41 responses and a response rate of 59.4%, represents the school with the highest number of responses.

Table 13

Lecturers' responses by school

School	Teachers count	Responses	Response rate
Higher School of Agrarian Studies (ESA)	48	31	64.6%
Higher School of Arts (ESART)	117	38	32.5%
Higher School of Education (ESE)	66	31	47.0%
Higher School of Management (ESGIN)	40	19	47.5%
Higher School of Health (ESALD)	89	34	38.2%
Higher School of Technology (EST)	69	41	59.4%
Total	429	194	45.2%

Source: Own elaboration

Concerning gender of respondents, Figure 30 presents the number of responses according to the respondent's gender and shows that males represent 62% of respondents. Meanwhile, females represent 37%. 1% of respondents answered, "prefer not to say".

Figure 30

Respondents by gender
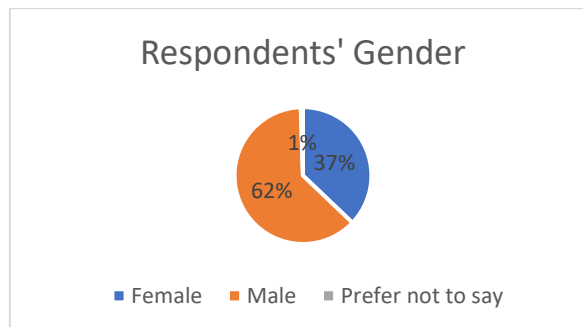
Source: Own elaboration

According to the respondents' age, Table 14 shows that almost 89.2% of respondents were 40 years or more, 61.4%, 50 years or more and 26.3%, 60 years or more. On the other hand, 10.8% were less than 40 years, and only 2.6% were less than 30 years old. These data show that the number of teachers close to retiring age represent 26.3%. On the other hand, the proportion of younger lectures at the Institution is small, as reflected in the respondent rate.

Table 14

Respondents by age

Age	Age count	%
20 - 29	5	2.6%
30 - 39	16	8.2%
40 - 49	54	27.8%
50 - 59	68	35.1%
more than 60	51	26.3%
Total	194	100.0%

Source: Own elaboration

Concerning teaching experience in years, Table 15 shows that generally respondents have been teaching for 20 years or more, which represents 60.30% or 117 responses. When comparing this information with results from respondents' age it is possible to observe, as expected, a relation between the respondents' age and their teaching experience.

Table 15

Teaching experience

Teaching experience in years	Teaching experience in years count	%
up to 5 years	15	7.7%
5-10 years	19	9.8%
15-20 years	24	12.4%
10-15 years	19	9.8%
more than 20 years	117	60.3%
Total	194	100.0%

Source: Own elaboration

Regarding respondents' type of contract, Table 16 shows that most of the respondents, namely 68.6%, or 133 respondents, hold a permanent contract, followed by 21.1% or 41 respondents, with fixed-term part-time contracts, and 10.3%, or 20 respondents, with fixed-term full time contract.

Table 16

Type of contract

Type of contract	Type of contract count	%
Fixed-term full-time contract	20	10.3%
Fixed-term part-time contract	41	21.1%
Open-ended contract (permanent)	133	68.6%
Total	194	100.0%

Source: Own elaboration

Results regarding sample characteristics show that most respondents have a long experience in teaching, have a permanent contract, and are 50 or over 50 years old and male (62%). Regarding the distribution by school, results show that ESA and EST present the highest response rate with 64.6% and 59.4%, respectively. On the downside, the schools with the lowest response rate are ESALD and ESART with 38.2% and 32.5%, respectively.

4.6. Quantitative approach – Research instruments

This study involves the assessment of a set of relationships between variables through a quantitative analysis and its contrast with a qualitative analysis based on a semi structured survey, in both cases submitted to a group of lecturers from the Polytechnic University of Castelo Branco.

Following the proposed research questions and hypotheses, the quantitative analysis addresses the relationships between Teacher Autonomy and Teacher Collegiality, between Teacher Collegiality and Teacher Collaboration, between Teacher Autonomy and Teacher Collaboration, and between Language Competence and Teacher Collaboration. A supplementary relationship is assessed by evaluating the mediating effect of Teacher Collegiality in the relationship between Teacher Autonomy and Teacher Collaboration.

To conduct the analyses, the variables in the proposed model were measured using previously developed scales that were adapted to the characteristics of the study. The decision regarding the use of previously developed models was based on the research objectives and the existence of valid and reliable scales.

During the process of choosing and adapting the measurement models to the study context, changes were made in several items from the scales, and others were removed. These procedures and decisions were made after careful analysis and an examination and validation of the final questionnaire by 26 experts on language and education from Spanish and Portuguese HEIs. Following the Nunnaly and Bernstein (1994) guidelines, issues such as context constrains and the extension of the questionnaire together with the experts' suggestions were taken into account.

4.6.1. Teacher autonomy questionnaire

The teacher autonomy measurement model was adapted from Pearson and Moomaw (2006), which was established based on a previous work from Pearson and Hall (Pearson & Hall, 1993). It was developed based on a survey which 171 teachers from several grades, including elementary, middle, and high school teachers. During the scale's development process, the authors tested the scale's psychometric characteristics and found that it presents adequate validity and reliability indexes. Despite the absence of specific higher education data in the scale development process, the decision to choose this scale was based on its suitability for the study and its validity. Furthermore, changes were carefully made into the scale's original items in order to adapt it to the higher education sector, without changing its content. The original scale had 18 items and during the process of adaptation to the context to be studied, 5 items from the original scale were removed. Table 17 shows the final teacher autonomy measurement model comprising a total of 13 items. The five items were removed because they were not suitable for the context of higher education and referred to secondary school settings.

Table 17

Teacher autonomy measurement model

Item code	Teacher autonomy items
TA1	In my teaching, I use my own guidelines and procedures.
TA2	In my situation, I can change or adapt the content and skills that are selected for teaching.
TA3	My teaching focuses on those goals and objectives I select myself.
TA4	What I teach in my class is determined for the most part by myself.
TA5	The materials I use in my class are chosen for the most part by me.
TA6	The content and skills taught in my class are those I select.
TA7	The selection of student-learning activities in my class is under my control.
TA8	I follow my own guidelines on instruction.
TA9	In my situation, I have autonomy on how to solve major problems.
TA10	In my class, I have full control over how classroom space is used.
TA11	The evaluation and assessment activities used in my class are selected by me.
TA12	I select the teaching methods and strategies I use with my students.
TA13	I decide over the scheduling of use of time in my classroom.

Source: Adapted from Pearson and Moomaw (2006)

4.6.2. Teacher collegiality measurement model

Teacher collegiality measurement model was based on a study from Shah (2011). This scale was developed and validated using a sample from public secondary school teachers from Pakistan. It presents adequate validity and reliability and defines collegiality as a construct including seven dimensions: "mutual support and trust; observing one another teaching; joint planning and assessment; sharing ideas and expertise; teaching each other; developing curriculum together; and sharing resources" (Shah, 2011). Though some of these may not be common or expected in HEIs, such as 'observing one another teaching' or 'joint planning and assessment', they were left because considered relevant for ICLHE practice. The original scale included 32 items. However, to adapt it to the context of the study, the scale items were carefully analysed, and some items were removed. The scale used in the studied context included a final set of 30 items. Table 18 presents the teacher collegiality measurement scale.

Table 18

Teacher collegiality measurement scale

Item code	Teacher collegiality items
TC1	Professional interactions among teachers are cooperative and supportive.
TC2	There is a feeling of trust and confidence among teachers.
TC3	I can count on most of my colleagues to help me out anywhere, anytime even though it may not be part of their official assignment.
TC4	Teachers consider their colleagues as their friends.
TC5	Teachers in this school respect the professional competence of their colleagues.
TC6	Teachers invite other teachers to observe their teaching.
TC7	Teachers in this school do not mind being observed by their colleagues while teaching.
TC8	I believe it to be beneficial for my teaching to be open with colleagues about my successes and challenges.
TC9	Feedback received by the colleagues is considered and responded to appropriately
TC10	Cooperation and collaboration exist across departments.
TC11	Teachers jointly plan and prepare teaching strategies and procedures.
TC12	Teachers make collective agreements to test an idea or new approach in teaching.
TC13	Teachers jointly accredit new programs and practices.
TC14	My colleagues and I collectively analyse our teaching practice.
TC15	Teachers often argue over educational theories, philosophies, or approaches.
TC16	Teachers encourage each other to contribute ideas and suggestions.
TC17	Teachers often ask each other about classroom management ideas and suggestions.
TC18	Teachers in this school often ask for suggestions to specific content/ subject problems.
TC19	Teachers discuss frequently about school improvement strategies.
TC20	Teachers often teach each other informally.
TC21	Teachers in this school enjoy teaching in teams.
TC22	Teachers feel part of a learning community which values shared responsibility for ongoing learning.
TC23	Teachers give demonstrations on how to use new models or strategies.
TC24	Teachers in this school like to share what they have learned or want to learn.
TC25	Most teachers in this school contribute actively to making decisions about curriculum.
TC26	I find time to work with my colleagues on curriculum during a regular work day.
TC27	Teachers in this school usually ask for help on specific instructional problems.
TC28	My colleagues and I share materials related to my subject teaching.
TC29	Teachers in this school often lend and borrow materials and resources.
TC30	Teachers often share journal articles and materials.

Source: Adapted from Shah (2011)

4.6.3. Teacher Collaboration Scale

The teachers' collaboration scale was based on the Teacher Collaboration Assessment Survey (TCAS). This scale has been used by researchers to better understand and improve the capacity for teacher collaboration in schools in the

North-eastern and Mid-Atlantic regions of the United States and encompasses teachers' collaboration within four domains: dialogue, decision making, action, and evaluation (Woodland et al., 2013). These authors present a validation of the TCAS scale and discuss how researchers can use the measurement model for improving teacher collaboration. Thus, the measurement model represents a valid and reliable scale. The original model incorporates 40 items. However, for the purpose of this study and to adapt the questionnaire to the context, the scale items were carefully analysed, and several items were removed, according to specialists' suggestions, context constrains and the extension of the questionnaire. The final model included a total of 26 items assessing teachers' collaboration, as shown in Table 19.

Table 19

Teacher collaboration measurement model

Item code	Teacher collaboration items
COL1	Team meetings are consistently attended by ALL members.
COL2	Agenda for team dialogue is pre-planned, written, and accessible to all in advance of meeting.
COL3	Team meetings are purposefully facilitated and employ the use of protocols to structure and guide dialogue.
COL4	A thoughtful, thorough and accurate account of team dialogue, decisions and intended actions is recorded.
COL5	Inter-professional disagreements occur regularly – these disagreements are welcomed, openly addressed and lead to new shared understandings.
COL6	My department regularly makes decisions about what instructional practices to initiate, maintain, develop, or discontinue.
COL7	The process for making any decision is transparent and adhered to
COL8	The decisions the department makes are clearly and directly related to the improvement of instructional practice and the improvement of student learning.
COL9	Department members regularly identify specific instructional practices that they will initiate or maintain to increase student learning.
COL10	Department members regularly identify strategies they will change or discontinue.
COL11	My department regularly determines what information about instructional practice and student learning needs to be obtained.
COL12	Each department member takes actions related to individual/team learning as a result of team decision making.
COL13	As a result of department decision making, each one of us makes meaningful (pedagogically complex) adjustments to our instructional practice.
COL14	Each member of the department knows what actions (related to learning) to take next at the end of the meeting.
COL15	Department member actions are coordinated and interdependent.
COL16	Each individual teacher employs specific instructional strategies that will increase student learning.
COL17	Each individual teacher discontinues less effective strategies.
COL18	Actions that are taken after or between meetings are distributed equitably among team members.
COL19	Each department member can name some aspect of instruction that we have stopped/started or changed as a result of the group decision making.
COL20	Each member of the department commits to carrying out team actions.
COL21	As a department we regularly collect and analyse quantitative data (e.g., numbers, statistics, scores) about member teaching practices.

Item code	Teacher collaboration items
COL22	As a department we regularly collect and analyse qualitative data (e.g., open-ended responses, interviews, comments) about member teaching practices.
COL23	As a department we regularly collect and analyse quantitative data (e.g., numbers, statistics, scores) about student learning.
COL24	As a department we regularly collect and analyse qualitative data (e.g., open-ended responses, interviews, comments) about student learning.
COL25	Our department uses student performance data to evaluate the merit of our instructional practices.
COL26	We regularly share evaluation data on the effect of our instruction in our department colleagues.

Source: Adapted from Woodland et al. (2013)

4.6.4. Language Competence Measurement Model

The language competence scale was adapted from Pérez Cañado (2020a). The original scale was part of a larger survey involving the assessment of higher education teachers training needs regarding aspects such as EMI, linguistic competence, methodology, materials and resources, evaluation, ongoing professional development, and mobility. The language competence scale included 19 Likert-type items intended to assess aspects concerning teachers' linguistics needs "in terms of skills, components, EAP, and ESP" (p. 8) and students' language skills. The scale adaptation to the studied context involved removing 8 items, that were too specific for bilingual education and were not suitable for the general quantitative questionnaire, which means that the used scale included 11 items assessing teachers' and students' language competence. Table 20 shows language competence adapted scale.

Table 20

Language competence scale

Item code	Teachers' language competence Items
LC1	I have the necessary English listening skills.
LC2	I have the required English-speaking competences.
LC3	I have the needed English reading comprehension skills.
LC4	I have the necessary English writing competences.
LC5	I have satisfactory English specific academic vocabulary knowledge in my areas of expertise.
LC6	I have generic English expressions knowledge to communicate and interact with my students.
LC7	My students have satisfactory English listening skills.
LC8	My students have adequate English-speaking competences.
LC9	My students have reasonable English reading skills.
LC10	My students have suitable English writing competences.
LC11	My students have adequate academic English skills.

Source: Adapted from Pérez Cañado (2020a)

4.6.5. Measuring method – type of questions to use

According to Nunnaly and Bernstein (1994) measurement "consists of rules for assigning symbols to objects so as to (1) represent quantities of attributes numerically (scaling) or (2) define whether the objects fall in the same or different categories with respect to a given attribute (classification)" (p. 3). Consequently, this process of quantifying attributes numerically seeks to quantify how much an attribute is present in an object and implies to transform information into numbers in order to perform statistical operations, not possible by other means (Moreira, 2009).

The term attribute refers to objects' characteristics, which means one measures attributes, proprieties or characteristics of objects and measuring requires a process of abstraction and caution regarding the nature of the attribute, before measuring it. Moreover, the term "rules" implies that the process of assigning numbers must be clearly stated and standardized, i.e. rules must be clear, practical to apply, measuring does not demand complex skill from users and the measurement results must not depend upon a specific user (Nunnaly & Bernstein, 1994). Moreover, despite the need for caution in the measurement process, the assignment of numbers to objects always involves a loss of

information, which must be minimized and researchers should ensure that the lost information is the less relevant (Moreira, 2009).

Consequently, once the measurement models to integrate in the quantitative study survey were established, and based on their type, a Likert type additive scale of 7 points was used. The Likert scale was developed by Rensis Likert in 1932 and uses a scaling process arranged according to the intensity of the presence of the measured attribute (Garland, 1991; Likert, 1932). The 1932 Likert proposal was based on a 5-point scale, with "Strongly Approve" and "Strongly Disapprove" as extreme points. Over the years, the wording slightly changed leading to nowadays "Strongly Agree" and "Agree" and "Strongly Disagree" and "Disagree", with a neutral point in the middle (Chyung et al., 2017). Variations of the original 5-point scale have been used, namely 7-point and 10-point scales, which offer the respondent a larger range of choices to select the exact one (Joshi et al., 2015). Nevertheless, lengthier formats, such as the 10 points can become impractical, since they add greater emphasis to a numerical response without a precise and defined meaning (Dawes, 2008). Although researchers prefer respondents to make a decided choice, rather than choosing the midpoint (Garland, 1991), the use of a midpoint in the Likert type format allows respondents to express a neutral opinion (Chyung et al., 2017). As the number of the scale steps increases, respondents choosing midpoints decreases (Garland, 1991; Matell & Jacoby, 1971). The decision regarding the use of a middle point is made mostly based on the researcher's preferences (Garland, 1991) and the study's context. Therefore, considering the pros and cons, the 7-point scaling was found suitable for the purpose of the current study.

4.6.6. Decisions regarding data collection

The process of submitting the survey and the data collection was made using an online survey. The digitalisation of society and the widespread use of electronic devices such as computers and smartphones enabled respondents to access and respond to the type of survey used in this study any place any time, provided that a stable connection to internet is available. Moreover, online surveys have several advantages in contrast to more traditional ones, such as sending the

survey by email or contacting respondents by phone call. Among them, the reduced cost, easy access to respondents and automatic data entry (Hung & Law, 2011; Pan, 2010; Wright, 2005) or reduced time of the research field work are highlighted. However, online surveys also present several disadvantages such as low response rates, privacy and security issues, sample representativity issues, and they are impersonal (Hung & Law, 2011). For the purpose of this study, and given the examined context, there is a strong argument regarding favouring an online survey because the survey was conducted among colleagues of the same institution.

In fact, the justification for using an online survey is based on the study population, logistics and costs. Additionally, online surveys down points, including the low response rate, sample representativity, and the impersonal aspect of the survey, are lowered due to the reduced context of study (IPCB lecturers). Regarding privacy and security issues, several measures were included namely complying with the General Data Protection Regulation (GDPR), the survey (after being approved by the ethics committees of both IPCB and UEX) was first submitted via email by IPCB general services to the overall teacher mailing list. Regarding the online survey development, guidelines from Pan (2010) were followed, namely gathering detailed information regarding the response patterns, making a pre-test to access the respondents response behaviour and submitting a reminder email.

Concerning the survey construct, submitting and gathering responses, there are multiple services available, such as "SurveyMonkey®", "SurveyLegend", "Pointerpro", "Microsoft Forms", "Google Forms", among many others. The chosen tool was Google Forms (available at: https://www.google.com/forms/about/) since it is easy to use and it fits the requirements. Furthermore, this platform has been used by the author in lecturing and researching for several years, including in implementing research projects regarding ICLHE/CLIL, with optimal results. The author has an advanced knowledge about how to use the service for research purposes and the service is free of charge, which makes it suitable for the requirements.

4.6.7. Building the survey

Considering the objectives of the research, i.e., a case study in ICLHE/CLIL at IPCB, and the decision of submitting an online questionnaire, the process regarding the online survey followed Eysenbach (2004) with adaptations (Table 21).

Table 21

Checklist for reporting results of internet E-Surveys (Eysenbach, 2004)

Item category	Checklist item
Design	Describe survey design
(IEB) approval and informed consent	IEB approval
process	Informed consent
	Data protection
Development and pre-testing	Development and testing
Recruitment process and description of	Open survey versus closed survey
the sample having access to the	Contact mode
questionnaire	Advertising the survey (reminding email)
Survey administration	Web/email
	Context
	Mandatory/voluntary
	Incentives
	Time/Date
	Number of items
	Review step
Response rates	View rate
	Participation rate
Preventing multiple entries from same	Log file analysis
individual	Registration
	IP check
Analyses	Handling of incomplete questionnaires
	Questionnaires submitted with an atypical timestamp
	Statistical correction

Source: Adapted from Eysenbach (2004, p. 3)

Previously developed and tested measurement models were collected and joined in a comprehensive questionnaire to assess IPCB teachers' autonomy (TA) (Pearson & Moomaw, 2006), including 13 items, teachers' collegiality (TC) (Shah, 2011), with 30 items, teachers' collaboration (COL) (Woodland et al., 2013), including 26 items, and language competence (LC) (Pérez Cañado, 2020a), comprising 11 items. A total of 80 items, plus 6 respondent characterisation items, including the informed consent, and questions inquiring on the respondent gender, age, IPCB affiliation school, number of years teaching, and type of contract (full time/part-time), add to 86 items in the final survey.

To comply with the IPCB internal regulation regarding GDPR, a request was submitted on 31st May 2022 to the IPCB Ethical Commission asking for

permission to conduct the research at IPCB. Similarly, due to internal regulations, a similar request was submitted on 10th June 2022, to the Universidad de Extremadura (UEx) Ethical Commission where the researcher was a PhD student. Both requests were authorized on 26th September 2022 (Appendix 2) and 22nd June 2022 (Appendix 3), respectively.

In summary, the e-survey included 86 structured questions, the response was limited to IPCB lecturers, and all e-survey questions were mandatory. Consequently, there were no incomplete responses. The first contact with respondents was made on the first semester of 2022 by email sent by the IPCB administrative services. Following the first email, the author sent a personalized email to each one of the IPCB teachers, kindly asking for their collaboration in the study and emphasising the importance of their responses in order to achieve the study's objectives. A third email was sent to lecturers (second personalized email), after three weeks, reminding them of the importance of participating in the study and the need for their responses. The survey was open for response for a month.

No further incentives to answering were given to respondents besides the study's results, which will be made publicly available for whoever is interested in them. Moreover, in order to avoid misleading information and for presentation proposes, the online survey was divided into six sections. The first one included a small text presenting the study, its objectives and described the way the survey was organised. The second section included respondent characterisation questions; the third consisted of the teachers' autonomy scale, the fourth section comprised the teachers' collegiality measurement model, the fifth contained the teachers' collaboration scale and the sixth section comprised the language competence measurement model. Appendix 4 shows the complete questionnaire submitted to lecturers.

Concerning the overall variables in the survey, Table 22 shows the questionnaire dimensions, items code and items number in the survey.

Table 22

Model's variables

Concept/ Dimension	Scale	Items	Number of order in survey
Informed consent	n/a	1	1
Gender Age IPCB affiliation school Years teaching Type of contract	n/a	5	2-5
Teacher autonomy	(Pearson & Moomaw, 2006)	TA1-TA13	7-19
Teacher collegiality	(Shah, 2011)	TC1-TC30	20-49
Teacher collaboration	(Woodland et al., 2013)	COL1-COL26	50-75
Teacher language competence	(Pérez Cañado, 2020a)	LC1-LC11	76-86

N/a – Not applicable

Source: own elaboration

The survey process and the respondents themselves have several attributes that assure that there are not repeated answers or that they are kept to a minimum. On the one hand, the population is represented by the overall teachers in IPCB, which the author accepts are well aware of the procedures regarding studies such as this one. Moreover, the typical respondent does not have enough time to waste in repeating responses. On the other hand, the submitting procedure, which was formerly submitted by the IPCB administrative services, and the remaining reminding emails, which specifically emphasized to not answer if they had already done so, give strong confidence that repeated responses did not occur. Nevertheless, even if repeated answers could occur, typically they are below 3% in most similar enquiries (Reips, 2002). Moreover, other types of measure to prevent repeated responses, such as IP control or using cookies are not reliable due to the use of dynamic IPs, multiple web browsers and/or with private web browsing active.

4.7. Quantitative approach – Fieldwork and collecting data

The scales to measure the models' variables were adapted from previous literature to the studied context and built into a single file, including the informed consent and the respondent characterisation questions. A presentation letter and the pre-final survey were prepared, and a pre-test was conducted to a group of

lecturers and researchers from several Higher Education Institutions (HEIs). These procedures aimed to assess potential problems that could be raised during the completion of the main survey. The participants in the pre-test were affiliated to Portuguese and Spanish HEIs among the author's colleagues and partners in lecturing and research. They were personally contacted and asked to provide a response and further insights regarding the survey questions and structure. A total of 26 responses were obtained. The pre-test feedback was positive about the response rate, survey structure and containing items. Minor comments were made regarding some items' structure. The overall feedback indicated that the questionnaire was too long and needed to be shortened, that there was no need to give some explanations about teacher collaboration, that some questions were repetitive or very similar and also indicated the need to specify what is meant by "group". Changes were made in the final survey accordingly. In the next stage, the Institutional Ethical Boards (IEBs) (both from IPCB and UEX) were requested to declare if the study complied with the ethical and GDPR requirements. Following the IEBs' positive response, a general presentation letter and the final survey was built into the Google Forms platform. A request to the IPCB administrative services was also made, asking them to submit the final survey to IPCB teaching staff. The final survey was finally submitted

4.7.1. Data analysis methods

Data from the main survey and the analysis of the structural model were conducted using the Partial Least Squares (PLS) method, using SmartPLS software (Ringle et al., 2022). However, descriptive statistics were evaluated using IBM SPSS Statistics 27 (IBM Corp, 2021).

The quantitative study in this thesis uses a structural equation modelling (SEM) approach. This statistical approach has its roots in the beginning of the 20th century and is a comprehensive statistical approach for testing hypotheses about relations among observed latent variables (Hoyle, 1995). Over the years methodological advances were made and improved software interfaces enabled a widespread of SEM analysis in multiple areas (Hair et al., 2011; Teo et al., 2013). SEM seems to be particularly suitable for educational research, as it

allows researchers to ask complex research questions and to test multivariate models in a single study (Teo et al., 2013). It is used to test theoretical models that define hypothetical causal relationships between variables and are presented by parameters that evaluate the degree and effect to which independent variables affect dependent variables (Marôco, 2010). Therefore, SEM evaluates the interrelationships expressed in a series of equations similar to series of multiple regression equations that depict all the relationships, among dependent and independent variables, involved in the analysis (Hair Jr et al., 2019).

There are two types of SEM analysis, covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM). The former was developed in the 1970s and has been primarily widespread due to availability of software able to deal with CB-SEM models. It uses a covariance-based SEM that attempts to minimize the difference between the sample covariances and the ones from the predicted theoretical model. On the other hand, PLS-SEM is a variance-based approach that shifts from the CB-SEM's theory test approach to a component-based approach called PLS-SEM, whose main objective is prediction, i.e. although it can be used for theory conformation, it can also be used to suggest whether relationships might or might not exist (Chin & Newsted, 1999). Compared to CB-SEM, PLS-SEM is more robust and has fewer identification issues. It works with much smaller samples and nonnormal data, which makes it more suitable for research that aims to predict variables (constructs) and is exploratory by nature (Hair et al., 2011). Consequently, the PLS-SEM was chosen as the methodological approach to evaluate the relationships between the model variables (structural model). Figure 31 presents a systematic procedure for applying PLS-SEM with reflective variables, as used in this research:

Figure 31

A systematic procedure for applying PLS-SEM
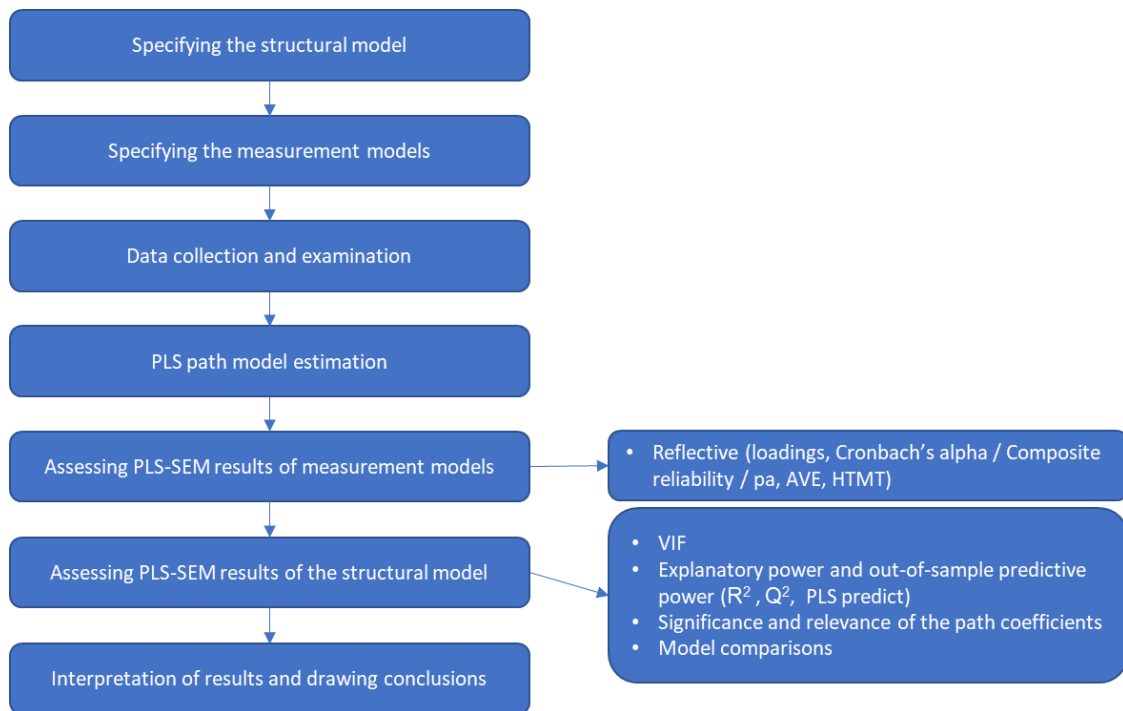
Source: Adapted from Hair et al. (2019, 2017)

Thus, data analysis follows a procedure involving two steps (Anderson & Gerbing, 1988), first an analysis of the measurement models and second an analysis of the structural model.

The first step in evaluating the results from SME involves the assessment of the measurement models, which includes the analysis of each scale used in the survey and an examination of their psychometric attributes. This study uses reflective measurement models, therefore the procedure involves the assessment of the survey items' reliability and the average variance extracted (AVE) values to examine the convergent validity. Regarding to the discriminant validity, the Fornell and Larker (1981) cross-loadings criterion and the HTMT ration of correlations (Henseler et al., 2015) are used.

Cronbach's alpha is commonly used to assess the internal consistency. Nevertheless, this indicator presents some limitations when used in PLS-SEM because this method prioritizes the indicators according to their reliability. Hence, the most adequate indicator to examine the internal consistency reliability in PLS-SEM is the composite reliability. This is considered a more conservative measure,

that varies between 0 and 1 and is in general interpreted the same way as the Cronbach's alpha (Hair et al., 2017). Guidelines for assessing composite reliability recommend a minimum value of 0.6 is acceptable in exploratory studies. However, when using established measures a minimum of 0.7 (Hair et al., 2019), or higher values of 0.8 or 0.9 (Nunnaly & Bernstein, 1994) should be used. Following literature guidelines, a minimum value of 0.8 for the composite reliability indicator was established within this research study.

The analysis of indicators reliability involves the assessment of correlations between each indicator and its latent variable or construct. According to this process, the higher the correlations of an item with their corresponding construct the more it will have in common with that construct. To conduct this type of analyses, correlations' values above 0.708 are generally accepted, which means that the latent variable explains 50% ($0.708^2 = 0.5$) of each indicator variance, which represents a conservative value (Hair et al., 2017). However, this rule of thumb is widely discussed and literature presents cut limits as low as 0.40 (Hulland, 1999) and acceptable values of 0.50 to 0.60 (Chin, 2010).

Considering the proposals in literature regarding the items to construct correlations, in a first stage the proposal from Falk and Miller (1992) was followed and items to correlation below 0.55 were removed from the analysis.

Convergent validity was assessed using the AVE value. Fornell and Larker (1981) suggest that constructs with an AVE below 0.5 lack convergent validity. Discriminant validity was assessed using two methods. The first method is the HTMT criterion (Henseler et al., 2015) which states that the HTMT values should be below 0.85 and that the inference criterion must show the confidence intervals to be below the value one in order to conclude that discriminant validity is established to a measurement model. Second, the criterion proposed by Fornell and Larker (1981), which indicates the presence of discriminant validity when the square roots of the AVE of each variable is higher than its highest correlation with remaining constructs.

Concerning the analysis of the relationships between variables of the structural model and how to report results, guidelines from Hair et al. (2017) and from Hair et al. (2019) are followed. Regarding the mediating effect of Teachers' Collegiality

in the relationship between Teachers' Autonomy and Teachers' Collaboration, guidelines from Preacher and Hayes (2008, 2004), and from Hair et al. (2017) are used.

A mediating effect exists if an independent variable affects a dependent variable through one or more intervening variables (Preacher & Hayes, 2008). This is the case of this study, which tries to assess if the effect of Teachers' Autonomy on Teachers' Collaboration exists, in some degree, through the presence of Teachers' Collegiality.

4.8. Qualitative Approach – Fieldwork and collecting data

A semi-structured questionnaire was sent to a group of teachers (N=8) who had experimented with ICLHE/CLIL at IPCB after dedicated professional training and tutorial collaboration. Following the reception of the teachers' responses, data were evaluated using a content analysis approach.

Content analysis involves a systematic reading of a body of texts, images, and symbolic matter. This method was first identified as such in the 1940s (Bardin, 2016). However, systematic analysis of texts were already identified in 17th century and quantitative analysis of printed documents can be found in the 18th century. Since the early ages of the 20th century, this technique has been gradually implemented, particularly with press texts. The development of social media, the great depression emerging from the Wall Street crash of 1929, and the emergence of empirical research methods led to today's content analysis method (Krippendorff, 2018). After the second world war, several developments occurred, enabling the use of content analysis in several different academic areas (Berelson, 1952). The use of this method is transversal to several scientific fields, such as economics, social sciences, education or nursing (Abernethy, 1992; Bengtsson, 2016; Comstock et al., 1975; De Wever et al., 2006; Tannenbaum & Greenberg, 1968).

The use of content analysis in qualitative studies is particularly relevant because this technique enables an objective, systematic and qualitative description of the content of communications (Berelson, 1952). Furthermore, it enables the analysis of latent and manifest content and invites the development of judgements and

descriptions using defined conditions and principles, objectively defined (Fearing, 1954) to formulate valid and replicable inferences (Elo & Kyngäs, 2008; Krippendorff, 1990), departing from content recorded by any means (Kolbe & Burnett, 1991).

According to Krippendorff (2018) qualitative approaches to content analysis involve several protocols for exploring texts systematically. Among them is *discourse analysis*, which concentrates on how a particular phenomenon is presented; *social constructivist analyses* which focus on discourse to understand how reality is constituted; *rhetorical analysis*, centred on how messages are delivered and with what effect; *ethnographic content analysis,* which emphasizes how content analysis emerges from reading texts, and *conversation analysis*, usually started with the recording of verbal interaction in natural settings to analyse transcripts as records of conversional moves. Consequently, content analysis involves a range of methods to generate inferences from all sorts of communication data.

Content analysis can be used with both quantitative and qualitative data and can also be used in an inductive or deductive way (Elo & Kyngäs, 2008). According to these authors, the purpose of the research determines which of these approaches to use. Specifically, a phenomenon with not enough former knowledge usually requires an inductive approach. On the other hand, deductive content analysis is operationalized over previous knowledge and is usually employed for theory testing. Content analysis also involves three phases: *preparation phase; organization phase; and reporting the analysing process and the results.* Depending on the type of content analysis, deductive or inductive, the organization phase follows different paths. Figure 32 depicts the content analysis process.

Figure 32

Preparation, organizing and resulting phases in the content analysis process
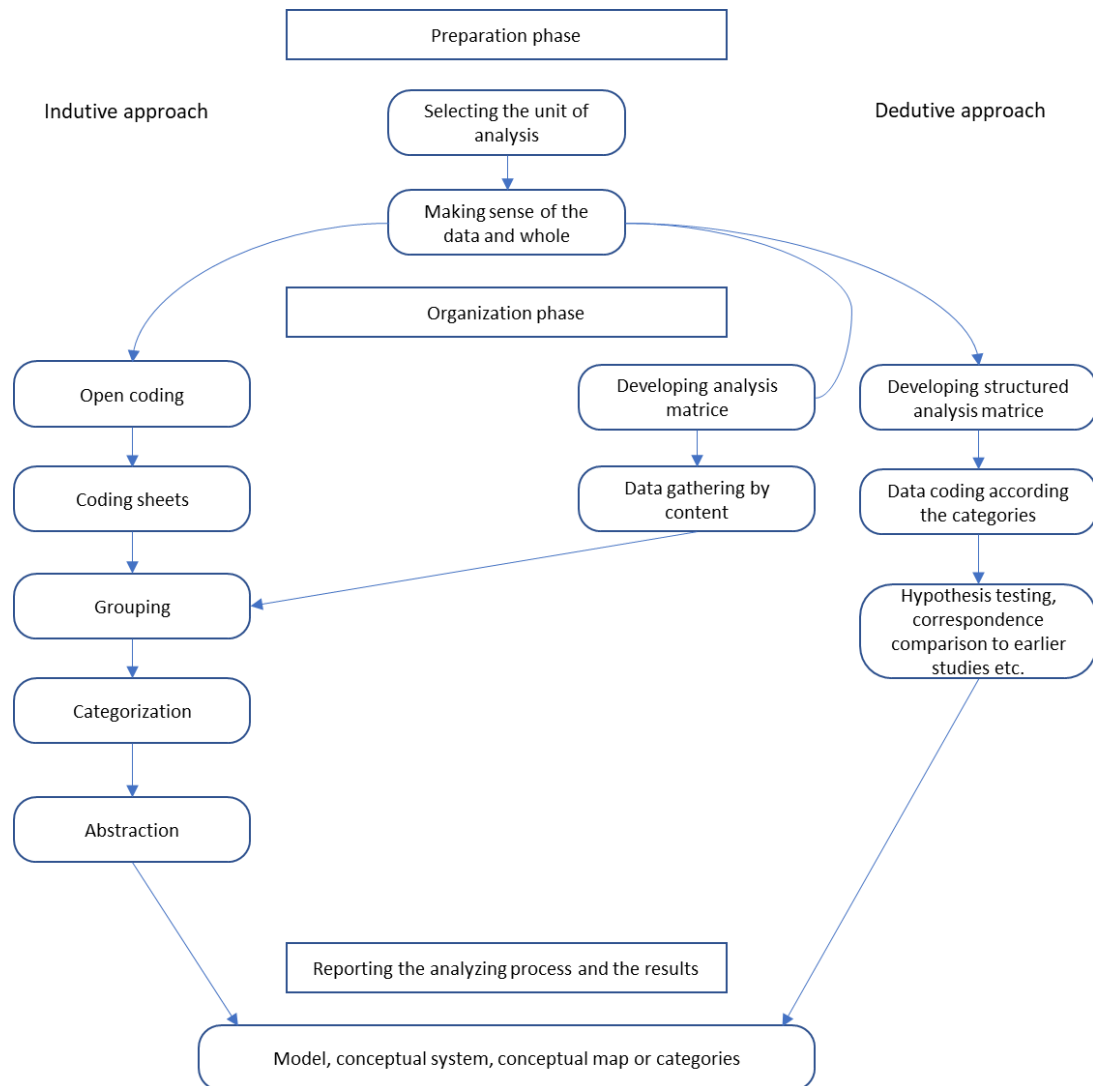
Source: Elo and Kyngäs (2008)

A content analysis implies classifying phrases into smaller content categories. Consequently, the first step for conducting a content analysis consists of deciding issues such as what, what level of detail, and the aspects related with the sampling procedure. Next, one must select the unit of analysis that, depending on the type of study, can be a word, a term, a sentence, a chapter, an item (Kassarjian, 1977), the number of participants in discussion, or time used in discussion, among other aspects (Elo & Kyngäs, 2008).

This study involves an analysis of a semi-structured questionnaire to higher education teachers, which is subjected to a qualitative analysis in the form of a

content analysis. The general themes and ideas involved in this study were previously studied, as showed in the conceptual framework, and settled in the research questions. Therefore, the research is operationalized over previous knowledge and consists in evaluating topics previously studied in the conceptual framework and included in the research questions. Thus, the qualitative analysis follows a deductive approach for conducting the content analysis, which means that after the preparatory phase, the next stage consisted in the development of a categorization matrix, to code the data according to the chosen categories or codes. Next, all data were reviewed for content and coded correspondence. If an unconstrained matrix is used, different categories are created following the principles of inductive content analysis. In contrast, when using a structured matrix, only aspects that fit the matrix of analysis are chosen from data. In the latter case, aspects that do not fit in the structured categorization, can be used to create concepts, following principles from inductive content analysis (Bengtsson, 2016; Elo & Kyngäs, 2008). The final stage involves the results analysis, which must be described in detail to provide a clear understanding of the process of analysis, its strengths, and weaknesses.

Content analysis involves characteristics such as objectivity, use of systematic procedures and reliability (Krippendorff, 2018). That is, all decisions are based and driven by a clear set of rules and decisions regarding content inclusion, or exclusion of categories, which is made according to a collection of reliable rules (Holsti, 1969) involving quantification of judgements (Kassarjian, 1977). Therefore, reliability in content analysis is achieved through the process of objectivity (Kolbe & Burnett, 1991).

4.8.1. Description of the sample

Eight content teachers answered the structured interviews. From these lecturers, seven are men and one is a woman, six are from engineering-related areas while two are from the management field. Six of these teachers have worked at IPCB for more than twenty years, one for more than fifteen years and one has worked in this HEI for five years. According to the age range, two are between forty and fifty years old, three between fifty and sixty and three over sixty. All lecturers have

a full permanent type of contract, except for one who has a fixed-term part-time contract. Table 23 describes participants' characterisation.

Table 23

Respondents' characterization

	Age	Gender	School	Contract	Experience (years)
Respondent 1	40-50	M	ESG	Part-time	5
Respondent 2	≥ 60	M	ESA	Full	36
Respondent 3	≥ 60	M	ESA	Full	38
Respondent 4	50-60	M	EST	Full	26
Respondent 5	≥ 60	M	ESG	Full	20
Respondent 6	50-60	F	EST	Full	25
Respondent 7	50-60	M	EST	Full	25
Respondent 8	40-50	M	EST	Full	16

Source: Own elaboration

As seen in Figure 33, most of the respondents have worked at IPCB for more than 20 years and have a full permanent type of contract.

Figure 33

Respondents' Teaching experience and Type of contract

Source: Own elaboration

As mentioned, the respondent teachers are mostly men and are from engineering and management related areas. As such they work at *Escola Superior Agrária* (ESA), *Escola Superior de Gestão* (ESG) and *Escola Superior de Tecnologia* (EST) (Figure 34).

Figure 34

Respondents' Gender and School

Source: Own elaboration

Lecturers are over 40 years old, which means they are experienced workers (Figure 35).

Figure 35

Respondents' Age
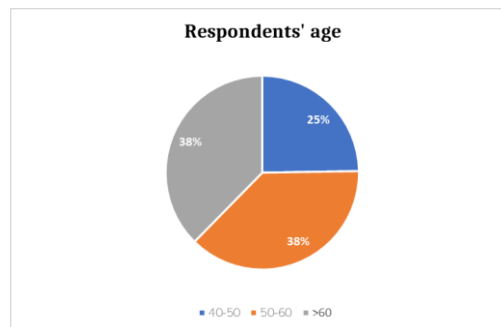
Source: Own elaboration

4.8.2. Semi-structured interview

Considering that the purpose of this investigation is to determine the optimal conditions for interdisciplinary teacher collaboration for ICLHE/CLIL at IPCB and to understand how the four different variables (teacher autonomy, collegiality, collaboration, and language competence) influence and create conditions for interdisciplinary teacher collaboration for CLIL, qualitative individual semi-

structures interviews were conducted with teachers who had already had some type of direct CLIL experience.

Pérez Cañado's interview protocol was used (Pérez Cañado, 2020a). This instrument was considered adequate since it was part of a project from the University of Jaén (Diseño, validación e implantación del Plan de fomento del Plurilingüismo de la Universidad de Jaén, PID65_201617) on plurilingualism and the topics and questions were relevant for this study.

The interview was translated from Spanish into Portuguese. Translation was recognised and approved by a Spanish specialist to guarantee that any information was not missed or misunderstood. The final Portuguese version is in appendix (Appendix 5).

4.8.3. Qualitative approach

4.8.3.1. Data collection

As the sample consisted of a small group of teachers who had in some way experimented directly with ICLHE/CLIL and who had closely worked with the author of this thesis or attended with her the first and second IPCB CLIL training courses (in 2014 and 2015), the interview was sent by email to each one of them. After an informal talk asking for their collaboration, a word file with the interview protocol was sent to the teachers by email. The respondents were kindly asked to answer it by writing down their responses and to resent it by email.

The reduced sample (8 teachers), composed by the IPCB teachers who had already experimented directly with ICLHE/CLIL, helped to define the qualitative tool used in this study: in-depth interviews. The decision to conduct the interviews on a written document was due to the fact of it being a small group of teachers, the available time to meet each other was limited and that flexibility to answer the questionnaire was required. Lecturers did not need to arrange meetings to perform the interviews and additionally they could flexibly answer the questionnaire little by little and at different times or on different days. Furthermore, the questionnaire was translated into Portuguese in order to allow teachers to

use their mother tongue and be more thorough in their answers, thus sidestepping any limitation due to the use of a foreign language.

To guarantee respondents' privacy, interviews were numbered from 1 to 8. In the following sub-section, there is a demographic characterization of the sample population. Eight interviews were sent, and eight teachers answered the questionnaire.

4.8.3.2. Interviews – Content analysis

This section reports the results of data collected through the semi-structured interviews. Findings are organized following the model variables (autonomy, collegiality, language competence and collaboration), the relevant conceptual notions and the scales used in the quantitative questionnaire.

Computer Assisted Qualitative Data Analysis Software (CAQDAS) NVivo was chosen to analyse QUAL data. NVivo is a qualitative data analysis (QDA) computer software package designed for qualitative and mixed-methods research. It provides a set of tools for the organisation, analysis, and finding insights in unstructured or qualitative data such as interviews, open-ended survey responses, articles, social media, and web content.

According to Sotiriadou et al.:

> With purpose-built tools for classifying, sorting and arranging information, NVivo helps a researcher manage and organize data and facilitates the analysis of data, identification of themes, gleaning insight and developing conclusions (2014, p. 220).

One of the main reasons for using NVivo in research is related with the ability to conduct analysis with complex data from different sources. NVivo supports several data formats, making it useful for different types of qualitative research. It has also visualisation tools, which can aid in the interpretation of data and the generation of reports.

NVivo was chosen as a qualitative method in this research for several reasons. NVivo is an efficient tool in data management, it is considered by research as a good platform for organising and managing large volumes of qualitative data

(Jackson & Bazeley, 2019; Paulus et al., 2017; Richards, 2020; Welsh, 2002). By using NVivo, this study can ensure a more systematic and transparent approach to data analysis, which may enhance the rigour and credibility of this research findings (Jackson & Bazeley, 2019; Johnston, 2006; Siccama & Penna, 2008; Welsh, 2002). Thus, NVivo was chosen because its functions were useful and could assist in the qualitative analysis process.

Initially, codes were segmented into categories and sub-categories that followed closely the model variables. The following table (Table 24) shows initial coding.

Table 24

Content analysis initial coding

Categories	Sub-categories
Autonomy	- Methodologies - Assessment - Materials - Organisation of Classroom Activities - Procedures - Content
Collegiality	- Interpersonal Relationships and Interaction Between Academics - Professional Interaction - Informal Support Actions
Teacher Language Competence	- Speaking - Listening - Reading - Writing - EAP
Collaboration for CLIL	- Training Needs - Organisation for CLIL Implementation - Dialogue - Adjustments to Current Practice - Coordination and Interdependence - Distribution of Work - Collaborative Analysis of Practice - Methodologies for Integrating Language and Content - Adaptation of Materials - Assessing Resources and Language - Incentives

Source: Own elaboration

Peer examination requires the researcher to discuss the investigation procedures and results with impartial colleagues who have experience with qualitative methods (Krefting, 1991). This helps to keep the researcher honest, and the

insights may contribute to deeper reflexive analysis by the investigator (Lincoln & Guba, 1985). Colleagues can also improve credibility by checking categories developed from data and by looking for negative or invalidating cases (Krefting, 1991). Kefting (1991) also argues that peer examination is an opportunity for the researcher to present working hypotheses for feedback and to discuss the progress of the study.

Following the above recommendations, as inter-coder agreement involves having multiple coders independently analyzing the same text and comparing the results to assess consistency, two coders coded one of the interviews using previous coding to compare data and analyse if changes to categories and sub-categories were needed.

Following that analysis and discussion, the final codes were identified as seen in Table 25.

Table 25

Content analysis final coding

Categories	Sub-categories
Autonomy	Content and Teaching Materials Methodologies used to teach
CLIL - Bilingual Education	Assessing Language Competence of Students Conditions for CLIL – Bilingual Education Implementation of Bilingual Education Methodologies for CLIL – Bilingual Education Training Needs
Collegiality & Collaboration	Informal Support Actions Interpersonal Relationships and Interaction Between Academics Professional Interaction
Teacher Language Competence	EAP ESP Overall Language Competence

Source: Own elaboration

The two coders' analysis allowed to conclude that CLIL – Bilingual Education should be identified as one category and that Collegiality and Collaboration could be included in the same category as they are identified in literature as closely

related and connected to each other by the repondents. Some sub-categories were also re-grouped.

Codes and descriptions were then added to NVivo and a codebook was generated (Table 26).

Table 26

NVivo Codebook

Code	Subcode	Description
Autonomy		**Particular feeling of independence from intrusion or as lecturers' management of school issues** (Wilches, 2007)**. Teacher autonomy is teachers' general right to freedom instead of being under others' control** (Benson, 2000)
	Content and Teaching Materials	Decide on materials and how to use them; define content distribution and management of classroom activities, assessment in practice
	Methodologies	Define goals and objectives; guidelines; assessment; procedures
CLIL - Bilingual Education		**CLIL is 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** (Coyle et al., 2010)
		Bilingual Education is the use of two languages for learning and teaching in an instructional setting (Valdés et al., 2015)
	Assessing Language Competence of Students	Assess students' ability to understand, use, and produce language effectively across reading, writing, listening, and speaking
	Conditions for CLIL - Bilingual Education	Incentives - rewards or stimuli designed to motivate lecturers to act or behave in certain ways to encourage productivity or enhance performance
	Implementation of Bilingual Education	Adaptation of class management; adaptation of content; adaptation of language; adjustments to current practice; adaptation of materials; distribution of work

Code	Subcode	Description
	Methodologies for CLIL - Bilingual Education	Immersive learning environments where students actively use a second language to engage with and understand subject matter
	Training Needs	Teachers and students needs necessary for effective performance
Collegiality and Collaboration		**Collegiality is the full participation of academic staff in the institutional processes that shape the conditions of academic work (Canadian Association of University Teachers, 2021). Collegiality implies teachers discussing and cooperating with other teachers (Smyth, 1991)**
		Collaboration is as a way of interaction between at least two co-identical partners willingly engaged in shared decision-making as they work toward a shared goal (Cook & Friend, 1991).
	Informal Support Actions	CoP; experiments with colleagues
	Interpersonal Relationships and Interaction Between Academics	Trust and confidence among colleagues; respect for colleagues; sharing successes and challenges; accepting feedback and suggestions from colleagues
	Professional Interaction	Across departments, collaborative design of curricula and instruction; accreditation of programmes and practices
Teacher Language Competence		**Teacher's ability to correctly use the sounds, syntax, lexis and is able to communicate in one language**
	EAP	The language needed for a particular academic subject together with its disciplinary culture
	ESP	The teaching of English that focuses on developing communicative skills in a particular field or occupation
	Language Competence	Speaking, listening, reading, writing skills

Source: Own elaboration

Respondents' descriptions were then transcribed, translated into English, coded in categories and sub-categories using NVivo and transcribed into table format.

Figure 36 shows an example.

Figure 36

Example of raw data translation

1. Autonomy

1.1. Methodologies

ID	Raw data	Raw data translated
R1 (4.68% Coverage)	Não tendo formação de base em pedagogia, tenho procurado implementar várias medidas para corrigir pontos menos bons provados por esta lacuna.	With no training in pedagogy, I have tried to implement several measures to correct weaker points caused by this gap.
	diminuição do tempo com aulas expositivas e o aumento do trabalho autónomo dos alunos.	Decrease of lecturing time and increase of students' autonomous work.
	Depende da unidade curricular.	It depends on the curricular unit.
	Com recurso a testes, realização de trabalhos, fichas ou exercícios.	Using tests, assignments, worksheets, or exercises.
	Os instrumentos utilizados veriam de UC para UC. Em UCs de caracter mais teórico, utilizo uma avaliação mais diversificada com fichas, trabalhos individuais/grupo, testes. Em UCs de natureza mais prática dou mais enfase a testes de frequência e menos a trabalhos individuais/de grupo.	The instruments used vary from CU to CU. In more theoretical CUs, I use diverse assessment types with worksheets, individual/group work, tests. In practical CUs, I give more emphasis to frequency tests and less to individual/group work.

Source: Own elaboration

In order to maintain teachers' identity, each of them is assigned a code. They will be known as: Respondent 1 (R1), Respondent 2 (R2), Respondent 3 (R3), Respondent 4 (R4), Respondent 5 (R5), Respondent 6 (R6), Respondent 7 (R7) and Respondent 8 (R8).

Chapter 5
Results

As it was previously stated, this research study followed a mixed methods approach. In this chapter results of both quantitative and qualitative results will be presented.

5.1. Quantitative results

This section presents results obtained from the analysis of data from the submitted questionnaire to IPCB teachers. It, thus, focuses on the analysis of the results from the empirical quantitative study.

The first stage presents the main information about data including the sample characteristics and a preliminary data analysis. The following stage involves an analysis of the measurement models, including purifying them and the assessment validity and reliability. The final stage involves the assessment of the structural model (model of hypotheses). The overall analysis follows guidelines from Hair et al. (2011, 2019, 2017), Sarstedt, Hair, Cheah, Becker and Ringle (2019) and Henseler, Ringle and Sarstedt (2015).

5.1.1. Descriptive statistics

The proposed model includes five hypotheses and four variables (TA, TC, COL, and LC) assessed using Likert-type measurement models. In this subsection, the descriptive statistics from the quantitative study will be presented, which were computed using SPSS Statistics 27 software (IBM Corp, 2021). Table 27 shows results for the variable Teachers' Autonomy and includes the sample descriptive statistics; mean, median, mode, standard deviation (sd), minimum (min), and maximum (max) for each item in the survey. As previously explained, the Likert scale employed goes from 1 to 7 so respondents were asked to rate from 1

(strongly disagree) to 7 (strongly agree) their degree of agreement with the following statements. Table 27 then shows teacher autonomy descriptive statistics.

Table 27

Teacher Autonomy descriptive statistics

Item	N	Mean	Median	Mode	sd	Min.	Max.
TA1 - In my teaching, I use my own guidelines and procedures.	194	6.20	7.00	7	1.080	1	7
TA2 - In my situation, I can change or adapt the content and skills that are selected for teaching.	194	6.10	6.00	7	1.138	1	7
TA3 - My teaching focuses on those goals and objectives I select myself.	194	5.89	6.00	7	1.279	1	7
TA4 - What I teach in my class is determined for the most part by myself.	194	5.71	6.00	7	1.407	1	7
TA5 - The materials I use in my class are chosen for the most part by me.	194	6.39	7.00	7	1.048	1	7
TA6 - The content and skills taught in my class are those I select.	194	5.80	6.00	7	1.298	1	7
TA7 - The selection of student-learning activities in my class is under my control.	194	6.21	7.00	7	1.064	1	7
TA8 - I follow my own guidelines on instruction.	194	6.12	6.00	7	1.099	1	7
TA9 - In my situation, I have autonomy on how to solve major problems.	194	5.91	6.00	7	1.256	1	7
TA10 - In my class, I have full control over how classroom space is used.	194	5.92	6.00	7	1.289	1	7
TA11 - The evaluation and assessment activities used in my class are selected by me.	194	6.10	7.00	7	1.278	1	7
TA12 - I select the teaching methods and strategies I use with my students.	194	6.42	7.00	7	0.914	1	7
TA13 - I decide over the scheduling of use of time in my classroom.	194	6.48	7.00	7	0.859	1	7

Source: Own elaboration

The descriptive statistics of the teacher autonomy scale shows a general mean ($\overline{x}$) value of 6.10. Among the variable items, the lowest mean was recorded on item TA4 ($\overline{x}$ = 5.71; sd = 1.407) and the highest on item TA13 ($\overline{x}$ = 6.48; sd = 0.859). Item TA4 assessed teachers' decision power about what to teach in classes and TA13 involves aspects about autonomy on scheduling and use of time in classes.

Additionally, it shows that 5 in 13 items of the teachers' autonomy scale recorded a means below the value 6. These results indicate that lecturers considered they had a high degree of autonomy in teaching activities, which the following topics confirm: use of own guidelines and procedures (TA1: $\overline{x}$ = 6.2; sd = 1.080); changing or adapting content and skills for teaching (TA2: $\overline{x}$ = 6.1; sd = 1.138); selection of teaching objectives and goals (TA3: $\overline{x}$ = 5.89; sd = 1.279); decision about what to teach (TA4: $\overline{x}$ = 6.39; sd = 1.407); materials used (TA5: $\overline{x}$ = 6.39; sd = 1.298); selection of content and skills to teach (TA6: $\overline{x}$ = 5.80; sd = 1.298);

control over student-learning activities (TA7: $\bar{x}$ = 6.21; sd = 1.064); own guidelines on instruction (TA8: $\bar{x}$ = 6.12; sd = 1.099); solve major problems (TA9: $\bar{x}$ = 5.91; sd = 1.256); control over how classroom space is used (TA10: $\bar{x}$ 5.92 = ; sd = 1.289); control over evaluation and assessment activities (TA11: $\bar{x}$ 6.10 = ; sd = 1.278); teaching methods and strategies (TA12: $\bar{x}$ = 6.42; sd = 0.914); and scheduling and use of time in classroom (TA13: $\bar{x}$ 6.48 = ; sd = 0.859). As mentioned above, the lowest mean was recorded on item TA4 which deals with the autonomy of choice on what to teach (TA4). The highest mean was recorded on the scheduling and use of time in classroom (TA13), an item which presents also the lowest standard deviation.

Moving on to teacher collegiality, Table 28 shows its descriptive statistics on the 30 items surveyed.

Table 28

Teacher Collegiality descriptive statistics

Item	N	Mean	Median	Mode	sd	Min.	Max.
TC1 - Professional interactions among teachers are cooperative and supportive.	194	4.99	5.00	5	1.275	1	7
TC2 - There is a feeling of trust and confidence among teachers.	194	5.01	5.00	6	1.273	1	7
TC3 - I can count on most of my colleagues to help me out anywhere, anytime even though it may not be part of their official assignment.	194	4.87	5.00	6	1.492	1	7
TC4 - Teachers consider their colleagues as their friends.	194	4.35	5.00	5	1.471	1	7
TC5 - Teachers in this school respect the professional competence of their colleagues.	194	5.09	5.00	6	1.447	1	7
TC6 - Teachers invite other teachers to observe their teaching.	194	2.51	2.00	1	1.462	1	6
TC7 - Teachers in this school do not mind being observed by their colleagues while teaching.	194	3.65	4.00	4	1.530	1	7
TC8 - I believe it to be beneficial for my teaching to be open with colleagues about my successes and challenges.	194	5.38	6.00	6	1.391	1	7
TC9 - Feedback received by the colleagues is considered and responded to appropriately	194	5.03	5.00	6	1.430	1	7
TC10 - Cooperation and collaboration exist across departments.	194	4.05	4.00	4	1.663	1	7
TC11 - Teachers jointly plan and prepare teaching strategies and procedures.	194	3.36	4.00	4	1.689	1	7
TC12 - Teachers make collective agreements to test an idea or new approach in teaching.	194	3.34	3.00	4	1.656	1	7
TC13 - Teachers jointly accredit new programs and practices.	194	3.59	4.00	4	1.680	1	7
TC14 - My colleagues and I collectively analyse our teaching practice.	194	3.51	4.00	5	1.793	1	7
TC15 - Teachers often argue over educational theories, philosophies, or approaches.	194	3.12	3.00	1[a]	1.577	1	7
TC16 - Teachers encourage each other to contribute ideas and suggestions.	194	3.45	4.00	4	1.619	1	7
TC17 - Teachers often ask each other about classroom management ideas and suggestions.	194	3.35	3.00	4	1.635	1	7
TC18 - Teachers in this school often ask for suggestions to specific content/ subject problems.	194	3.16	3.00	4	1.604	1	7
TC19 - Teachers discuss frequently about school improvement strategies.	194	3.80	4.00	5	1.646	1	7
TC20 - Teachers often teach each other informally.	194	3.56	4.00	4	1.657	1	7
TC21 - Teachers in this school enjoy teaching in teams.	194	3.63	4.00	4	1.559	1	7

Item	N	Mean	Median	Mode	sd	Min.	Max.
TC22 - Teachers feel part of a learning community which values shared responsibility for ongoing learning.	194	3.75	4.00	4	1.584	1	7
TC23 - Teachers give demonstrations on how to use new models or strategies.	194	3.12	3.00	4	1.572	1	7
TC24 - Teachers in this school like to share what they have learned or want to learn.	194	3.75	4.00	4	1.588	1	7
TC25 - Most teachers in this school contribute actively to making decisions about curriculum.	194	4.14	4.00	4	1.681	1	7
TC26 - I find time to work with my colleagues on curriculum during a regular work day.	194	3.54	4.00	4	1.725	1	7
TC27 - Teachers in this school usually ask for help on specific instructional problems.	194	3.45	4.00	4	1.606	1	7
TC28 - My colleagues and I share materials related to my subject teaching.	194	4.23	4.00	4	1.798	1	7
TC29 - Teachers in this school often lend and borrow materials and resources.	194	3.76	4.00	4	1.644	1	7
TC30 - Teachers often share journal articles and materials.	194	3.84	4.00	4	1.663	1	7

a. There are several modes. The lowest one is shown

Source: Own elaboration

The teacher Collegiality measurement model recorded a mean of 3.88. The scale's items mean ranged from the lowest (TC6: $\bar{x}$ = 2.51; sd = 1.462) to the highest (TC8: $\bar{x}$ = 5.38; sd = 1.391). This scale aimed to assess teachers' collegiality among IPCB lecturers and the obtained mean recorded a value substantially below that obtained in the Teachers' Autonomy scale. Moreover, the average response was below the neutral value 4. Table 28 also shows 9 items means below 3.5, such as the following: assessing if teachers' invite other teachers to their classes (TC6: $\bar{x}$ = 2.51; sd = 1.461), discuss educational theories or approaches (TC15: $\bar{x}$ = 3.12; sd = 1.577), give demonstration about how to use new models or strategies (TC23: $\bar{x}$ = 3.12; sd = 1.572), ask for suggestions to specific content problems (TC18: $\bar{x}$ = 3.16; sd = 1.604), make collective agreements to test ideas or approaches (TC12: $\bar{x}$ = 3.34; sd = 1.656), ask each other about classroom management ideas (TC17: $\bar{x}$ = 3.35; sd = 1.365), jointly plan and prepare teaching strategies (TC11: $\bar{x}$ = 3.36; sd = 1.689), encourage each other (TC16: $\bar{x}$ = 3.45; sd = 1.619), and ask for help on specific instructional problems (TC27: $\bar{x}$ = 3.45; sd = 1.606).

Among the items presenting the highest means on the Teacher Collegiality variable, only 4 items recorded values above 5, as following: feeling of trust and confidence among teachers (TC2: $\bar{x}$ = 5.01; sd = 1.273); received feedback from colleagues is considered (TC9: $\bar{x}$ = 5.03; sd = 1.430); respect the professional competence of their colleagues (TC5: $\bar{x}$ = 5.09; sd = 1.447), and consider

beneficial for teaching, to be open with colleagues about successes and challenges (TC8: $\overline{x}$ = 5.38; sd = 1.391).

The third variable under analysis was teacher collaboration. Table 29 shows the descriptive statistics in relation to the 26 items surveyed.

Table 29

Teacher Collaboration descriptive statistics

Item	N	Mean	Median	Mode	sd	Min.	Max.
COL1 - Team meetings are consistently attended by ALL members.	194	4.83	5.00	6	1.848	1	7
COL2 - Agenda for team dialogue is pre-planned, written, and accessible to all in advance of meeting.	194	5.50	6.00	7	1.793	1	7
COL3 - Team meetings are purposefully facilitated and employ the use of protocols to structure and guide dialogue.	194	4.74	5.00	6	1.756	1	7
COL4 - A thoughtful, thorough and accurate account of team dialogue, decisions and intended actions is recorded.	194	4.79	5.00	6	1.695	1	7
COL5 - Inter-professional disagreements occur regularly – these disagreements are welcomed, openly addressed and lead to new shared understandings.	194	4.22	4.00	4	1.703	1	7
COL6 - My department regularly makes decisions about what instructional practices to initiate, maintain, develop, or discontinue.	194	3.69	4.00	4	1.803	1	7
COL7 - The process for making any decision is transparent and adhered to	194	4.64	5.00	6	1.734	1	7
COL8 - The decisions the department makes are clearly and directly related to the improvement of instructional practice and the improvement of student learning.	194	4.28	4.00	4	1.696	1	7
COL9 - Department members regularly identify specific instructional practices that they will initiate or maintain to increase student learning.	194	3.87	4.00	4	1.715	1	7
COL10 - Department members regularly identify strategies they will change or discontinue.	194	3.69	4.00	4	1.669	1	7
COL11 - My department regularly determines what information about instructional practice and student learning needs to be obtained.	194	3.70	4.00	4	1.752	1	7
COL12 - Each department member takes actions related to individual/team learning as a result of team decision making.	194	4.39	5.00	5	1.663	1	7
COL13 - As a result of department decision making, each one of us makes meaningful (pedagogically complex) adjustments to our instructional practice.	194	3.78	4.00	4	1.627	1	7
COL14 - Each member of the department knows what actions (related to learning) to take next at the end of the meeting.	194	4.15	4.00	4	1.710	1	7
COL15 - Department member actions are coordinated and interdependent.	194	4.12	4.00	4	1.729	1	7
COL16 - Each individual teacher employs specific instructional strategies that will increase student learning.	194	5.19	5.00	6	1.410	1	7
COL17 - Each individual teacher discontinues less effective strategies.	194	4.48	5.00	4	1.518	1	7
COL18 - Actions that are taken after or between meetings are distributed equitably among team members.	194	3.84	4.00	4	1.610	1	7
COL19 - Each department member can name some aspect of instruction that we have stopped/started or changed as a result of the group decision making.	194	4.03	4.00	4	1.729	1	7
COL20 - Each member of the department commits to carrying out team actions.	194	4.06	4.00	4	1.713	1	7
COL21 - As a department we regularly collect and analyse quantitative data (e.g., numbers, statistics, scores) about member teaching practices.	194	4.18	4.00	4	1.746	1	7

Item	N	Mean	Median	Mode	sd	Min.	Max.
COL22 - As a department we regularly collect and analyse qualitative data (e.g., open-ended responses, interviews, comments) about member teaching practices.	194	3.96	4.00	4	1.726	1	7
COL23 - As a department we regularly collect and analyse quantitative data (e.g., numbers, statistics, scores) about student learning.	194	4.28	4.00	4	1.845	1	7
COL24 - As a department we regularly collect and analyse qualitative data (e.g., open-ended responses, interviews, comments) about student learning.	194	4.03	4.00	4	1.828	1	7
COL25 - Our department uses student performance data to evaluate the merit of our instructional practices.	194	4.26	4.00	4	1.750	1	7
COL26 - We regularly share evaluation data on the effect of our instruction in our department colleagues.	194	4.01	4.00	4	1.769	1	7

Source: Own elaboration

Results presented show that the Teacher Collaboration variable recorded a mean of 4.26, slightly above the neutral value of 4. The items mean ranged from COL6 ($\overline{x}$ = 3.69; sd = 1.803) to COL2 ($\overline{x}$ = 5.50; sd = 1.793). Moreover, Table 29 shows 8 indicators presenting means below the value 4, in relation to the following topics: regularity with which teachers' departments make decisions regarding instructional practices (COL6: $\overline{x}$ = 3.69; sd = 1.803); department member regularity in identifying strategies to change or discontinue (COL10: $\overline{x}$ = 3.69; sd = 1.669); department regularity in determining what information about instructional practice and student learning needs must be obtained (COL13: $\overline{x}$ = 3.78; sd = 1.627); equality distribution of actions taken after or between meetings (COL18: $\overline{x}$ = 3.84; sd = 1.610); regularity with which department members identify specific instructional practices to initiate or maintain for the improvement of student learning (COL9: $\overline{x}$ = 3.87; sd = 1.715); regularity with which departments collect and analyse qualitative data about members' teaching practices (COL9: $\overline{x}$ = 3.96; sd = 1.726).

Among the highest means, only two items recorded means above 5: COL16 ($\overline{x}$ = 5.19; sd = 1.410) regarding teachers employing individually instructional strategies to increase student learning; and COL2 ($\overline{x}$ = 5.50; sd = 1.793), related to meetings being pre-planned with written and accessible agenda to all members.

The overall results from the descriptive statistics show that respondents position themselves slightly above the neutral value, which could indicate to some extent a low level of collaboration.

Finally, Teacher Language Competence in English, Table 30 shows the descriptive statistics related to the way the teachers' perceive their own language competence in English and that of their students.

Table 30

Language Competence descriptive statistics

Item	N	Mean	Median	Mode	sd	Min.	Max.
LC1 - I have the necessary English listening skills.	194	5.60	6.00	6	1.363	1	7
LC2 - I have the required English-speaking competences.	194	5.20	5.00	5	1.477	1	7
LC3 - I have the needed English reading comprehension skills.	194	5.69	6.00	6	1.278	1	7
LC4 - I have the necessary English writing competences.	194	5.24	5.00	5ª	1.484	1	7
LC5 - I have satisfactory English specific academic vocabulary knowledge in my areas of expertise.	194	5.58	6.00	6	1.431	1	7
LC6 - I have generic English expressions knowledge to communicate and interact with my students.	194	5.20	5.00	5ª	1.581	1	7
LC7 - My students have satisfactory English listening skills.	194	3.75	4.00	4	1.440	1	7
LC8 - My students have adequate English-speaking competences.	194	3.56	4.00	4	1.399	1	7
LC9 - My students have reasonable English reading skills.	194	3.60	4.00	4	1.434	1	7
LC10 - My students have suitable English writing competences.	194	3.33	4.00	4	1.397	1	7
LC11 - My students have adequate academic English skills.	194	3.41	3.00	4	1.356	1	7

a. There are several modes. The lowest one is shown

Source: Own elaboration

Results presented in Table 30 show that the mean of the Language Competence variable is equal to 4.56, a value above the neutral value of 4. This variable seeks to assess what are the teachers' perceptions about their own and their student's English language competence. Overall, results highlight two interesting aspects. On the one hand, teachers' perception about students' English language level is that the latter is quite low. All the items addressing students' language level present means below the neutral value of 4, ranging between the lowest mean in the construct, item LC10 ($\bar{x}$ = 3.33; sd = 1.397) to item LC7 ($\bar{x}$ = 3.75; sd = 1.440). A mean among these items of 3.53 (items LC7 to LC11) was recorded. On the other hand, teachers' perceptions about their own English language competence present a mean (items LC1 to LC6) of 5.42, which means that they perceive themselves to be fairly confident users of the language, items ranging from item LC10 ($\bar{x}$ = 5.20; sd = 1.447) to item LC3 ($\bar{x}$ = 5.69; sd = 1.278).

Results highlight that the Language Competence variable items means, which presents values assessing students' Language Competence are quite low, starting on item LC10 ($\bar{x}$ = 3.33; sd = 1.397) about students' skills to write in

English, LC11 ($\overline{x}$ = 3.41; sd = 1.356) level of students' academic vocabulary, LC8 ($\overline{x}$ = 3.56; sd = 1.399) students' oral expression skills, LC9 ($\overline{x}$ = 3.60; sd = 1.434) students' written comprehension of English language, and LC7 ($\overline{x}$ = 3.75; sd = 1.440) students' oral comprehension of the English language. Meanwhile, items addressing teachers' language competence present slightly higher means: LC6 ($\overline{x}$ = 5.20; sd = 1.581) on teachers' knowledge of generic English expressions to communicate and interact with students; LC2 ($\overline{x}$ = 5.20; sd = 1.447) – teachers' English-speaking competences; LC4 ($\overline{x}$ = 5.24; sd = 1.484) teachers' writing competences; LC5 ($\overline{x}$ = 5.58; sd = 1.431) teachers' knowledge about academic English; LC1 ($\overline{x}$ = 5.60; sd = 1.363) teachers' listening skills; and LC3 ($\overline{x}$ = 5.69; sd = 1.278) teachers' reading comprehension skills.

The overall results about the main centrality tendency measures show that the standard deviations, excluding items TA12: sd = 0.914 and TA13: sd=0.859, ranged between values 1 and 2. Concerning the variables means, the TC variable presents the lowest mean $\overline{x}$ = 3.88, followed by variable COL: $\overline{x}$ =4.06, variable LC: $\overline{x}$ =4.56 and variable TA: $\overline{x}$ =6.10. The obtained results reveal an overall positive teachers' perception about the variables autonomy, collegiality and collaboration dimensions and a less positive perception about the variable language competence, particularly among students.

5.1.2. Assessing differences among groups of respondents

Data used in this research includes several different groups of participants which can be split according to their specificities. The main goal in this section is to assess if there are differences in responses among groups of respondents, i.e., according to the respondents' *gender* and *affiliating school*. Consequently, data was tested to assess its normality. Non-normal data works as decision criteria regarding the use of PLS-SEM, which is recommended when data presents distribution issues such as lack of normality (Hair et al., 2019). Data was computed using SPSS Statistics 27 (IBM Corp, 2021) and showed that the sample does not follow the normal distribution. Accordingly, the Mann-Whitney U test (Mann & Whitney, 1947), which can be considered a non-parametric version of the parametric t-test (McKnight & Najab, 2010), used to compare distributions

of scores on quantitative variables from two independent groups was computed. The goal was to compare distribution scores among gender (male/female). Moreover, the distribution scores were also compared among lecturers' affiliation school. In this case, the Kruskal-Wallis H (Kruskal & Wallis, 1952) was used. IPCB has 6 schools. The Kruskal-Wallis H test is also a nonparametric test and an extension of the Mann-Whitney U test used to compare two or more independent groups. Table 31 presents the computed results for comparing differences among groups of respondents by gender and school affiliation.

Table 31

Lecturer Autonomy Mann-Whitney U and Kruskal-Wallis H tests

Item	Gender [c]		School	
	U de Mann-Whitney	Sig. [a,b,1]	H de Kruskal-Wallis	Sig.[a,b,1]
TA1	3955.000	0.243	6.271	0.281
TA2	4136.000	0.528	5.149	0.398
TA3	4064.000	0.412	5.002	0.416
TA4	4260.500	0.791	2.838	0.725
TA5	4063.500	0.366	7.059	0.216
TA6	4169.000	0.602	5.203	0.392
TA7	4093.000	0.442	7.036	0.218
TA8	3985.000	0.286	8.928	0.112
TA9	3902.500	0.203	7.351	0.196
TA10	4204.500	0.669	2.089	0.837
TA11	4078.500	0.419	10.766	0.056
TA12	4187.000	0.605	4.441	0.488
TA13	4102.000	0.424	2.234	0.816

a. Significance level = 0.05

b. Asymptotic significance is displayed.

c. One response was removed the analysis. A respondent responded to the gender question "prefer not to say". N=193.

[1] H0: The distribution of scores is the same across categories (groups).

Source: Own elaboration

Results from the Mann-Whitney U and Kruskal-Wallis H tests show that there are not statistically significant differences among item scores on categories gender and school. That is, teacher autonomy perceptions do not change according to the respondent gender (male/female) or affiliating school.

Regarding Teacher Collegiality, Table 32 presents results from Mann-Whitney U and Kruskal-Wallis H tests.

Table 32

Teacher Collegiality Mann-Whitney U and Kruskal-Wallis H tests

Item	Gender [c]		School	
	U de Mann-Whitney	Sig. [a,b,1]	H de Kruskal-Wallis	Sig. [a,b,1]
TC1	3952.000	0.265	11.400	0.044
TC2	3939.500	0.249	7.736	0.171
TC3	4026.000	0.367	12.995	0.023
TC4	4115.000	0.510	13.627	0.018
TC5	3955.500	0.269	11.255	0.047
TC6	4096.000	0.475	14.915	0.011
TC7	3872.000	0.182	17.849	0.003
TC8	3803.500	0.127	9.488	0.091
TC9	3883.000	0.194	8.166	0.147
TC10	3887.500	0.203	13.297	0.021
TC11	3952.000	0.274	20.003	0.001
TC12	4251.000	0.776	13.947	0.016
TC13	4118.500	0.520	8.672	0.123
TC14	4287.000	0.852	11.672	0.040
TC15	3848.000	0.168	14.856	0.011
TC16	4161.500	0.598	17.800	0.003
TC17	4061.500	0.425	17.015	0.004
TC18	4061.500	0.425	10.466	0.063
TC19	4303.000	0.886	16.189	0.006
TC20	4315.500	0.913	6.697	0.244
TC21	4254.500	0.782	9.051	0.107
TC22	4297.000	0.872	7.520	0.185
TC23	4219.500	0.710	11.725	0.039
TC24	4164.500	0.604	19.982	0.001
TC25	4300.500	0.880	7.652	0.176
TC26	3983.000	0.312	5.192	0.393
TC27	4308.500	0.898	10.166	0.071
TC28	3958.500	0.283	4.458	0.486
TC29	4262.500	0.800	16.151	0.006
TC30	4202.000	0.677	11.064	0.050

a. Significance level = 0.05

b. Asymptotic significance is displayed.

c. One response was removed the analysis. A respondent responded to the gender question "prefer not to say". N=193.

[1] H0: The distribution of scores is the same across categories (groups).

Source: Own elaboration

The results for differences among groups of respondents in the teacher Collegiality dimension indicate interesting evidence, showing that there are no statistically significant differences in Teacher Collegiality according to the respondent gender, once the Mann-Whitney U test results present all p values above 0.05. However, when comparing scores among schools, the Kruskal-Wallis H test shows statistically significant differences according to the respondents affiliating school in several items from this dimension (TC1, TC3, TC4, TC5, TC6, TC7, TC10, TC11, TC12, TC14, TC15, TC16, TC17, TC19, TC23, TC24, TC29).

In what concerns Teacher Collaboration, results from the Mann-Whitney U and Kruskal-Wallis H tests are presented in Table 33.

Table 33

Teacher Collaboration Mann-Whitney U and Kruskal-Wallis H tests

Item	Gender [c]		School	
	U de Mann-Whitney	Sig. [a,b,1]	H de Kruskal-Wallis	Sig. [a,b,1]
COL1	4002.500	0.337	40.065	0.000
COL2	4087.500	0.454	35.180	0.000
COL3	4260.000	0.795	11.221	0.047
COL4	4100.500	0.488	17.793	0.003
COL5	4279.000	0.835	6.070	0.299
COL6	4314.500	0.911	9.305	0.098
COL7	4103.500	0.494	6.566	0.255
COL8	4190.000	0.652	5.285	0.382
COL9	4147.500	0.571	8.939	0.112
COL10	4202.500	0.676	9.239	0.100
COL11	4096.000	0.480	7.881	0.163
COL12	4306.000	0.892	4.415	0.491
COL13	4138.500	0.556	7.669	0.175
COL14	3842.000	0.163	5.868	0.319
COL15	3681.000	0.067	5.392	0.370
COL16	4239.500	0.749	8.205	0.145
COL17	4117.000	0.514	2.714	0.744
COL18	4352.000	0.991	16.902	0.005
COL19	4089.000	0.468	10.737	0.057
COL20	4045.000	0.399	8.166	0.147
COL21	4264.500	0.804	10.085	0.073
COL22	4191.500	0.656	9.362	0.095
COL23	4346.500	0.980	10.840	0.055
COL24	4190.500	0.655	6.273	0.281
COL25	4318.000	0.918	6.240	0.284
COL26	4136.500	0.553	5.582	0.349

a. Significance level = 0.05

b. Asymptotic significance is displayed.

c. One response was removed the analysis. A respondent responded to the gender question "prefer not to say". N=193.

[1] H0: The distribution of scores is the same across categories (groups).

Source: Own elaboration

Results from the Teacher Collaboration dimension Mann-Whitney U and Kruskal-Wallis H tests show mixed results. Regarding respondent gender, Teacher Collaboration results do not present statistically significant differences according to the respondent gender, as all p values have values above 0.05. Nevertheless, when comparing item scores among schools, the Kruskal-Wallis H test shows that Teacher Collaboration results present no statistically significant differences according to the respondents affiliating school except for COL1, COL2, COL3, COL4, and COL18, which present a p < 0.05.

Results from the Mann-Whitney U and Kruskal-Wallis H test for the dimension Language Competence are showed on Table 34.

Table 34

Language Competence Mann-Whitney U and Kruskal-Wallis H tests

| | Gender [c] | | School | |
	U de Mann-Whitney	Sig. [a,b,1]	H de Kruskal-Wallis	Sig. [a,b,1]
LC1	4148.000	0.566	6.162	0.291
LC2	4334.000	0.952	8.345	0.138
LC3	4092.000	0.463	10.361	0.066
LC4	4306.500	0.893	6.319	0.276
LC5	3994.500	0.316	9.822	0.080
LC6	4127.000	0.532	13.449	0.020
LC7	4293.000	0.863	18.491	0.002
LC8	4268.000	0.810	29.246	0.000
LC9	4265.500	0.804	27.630	0.000
LC10	4254.500	0.781	27.610	0.000
LC11	4341.000	0.967	33.734	0.000

a. Significance level = 0.05

b. Asymptotic significance is displayed.

c. One response was removed the analysis. A respondent responded to the gender question "prefer not to say". N=193.

[1] H0: The distribution of scores is the same across categories (groups).

Source: Own elaboration

The Mann-Whitney U and Kruskal-Wallis H tests for the Language Competence dimension indicate divergent results. On the one hand the Mann-Whitney U suggests that teachers' perceptions about their and their students' Language Competence present no statistically significant differences change according to the respondent gender. Nevertheless, regarding respondent school, results from the Kruskal-Wallis H test, except for items LC1, LC2, LC3, LC4, and LC5, present statistically significant differences according to the respondent affiliating school. Interestingly, an analysis of the items text shows that items LC1 to LC5 assess teachers' perceptions about their knowledge of the English language and items LC7 to LC11 assess teachers' perceptions about their students' English language skills. Oddly, item 6 has a focus on teachers' skills, however, differently from items LC1 to LC5, its scores seem to change according to affiliating school. These results may be explained by the diversity of scientific areas at IPCB, including Science, Technology, Engineering, Arts, Mathematics, Health Sciences, Social Sciences, Education, Business and Economics, Humanities, among others. This may be related to the fact that in their content areas lecturers usually read materials in English and use specific technical vocabulary in English.

5.1.3. Assessment of the measurement models

The first step in evaluating results from SEM involves the assessment of the measurement models. Accordingly, each of the measurement models used in the main survey are examined regarding their psychometric characteristics. Since this study includes only reflective measurement models, the procedure adopted involves the assessment of individual indicators reliability and the average variance extracted (AVE) to evaluate convergent validity. Additionally, the Fornell and Larker (1981) cross-loadings criterion and the HTMT ration of correlations (Henseler et al., 2015) are both used to examine the discriminant validity (Hair et al., 2019, 2017).

The internal consistency reliability is traditionally assessed through Cronbach's alpha. However, this indicator presents some limitations when used in PLS-SEM because this method prioritizes the indicators according to their reliability. Consequently, the most adequate indicator to examine the internal consistency reliability in PLS-SEM is the composite reliability. This is considered a more conservative measure, that varies between 0 and 1 and is in general interpreted the same way as the Cronbach's alpha (Hair et al., 2017). Composite reliability values of a minimum of 0.6 are acceptable in exploratory studies. Nevertheless, research using established measures should instead present a composite reliability indicator above 0.7 (Hair et al., 2019), or even of 0.8 or 0.9 (Nunnaly & Bernstein, 1994). Following these guidelines, and once this study uses tested and established scales, the later advice was followed and a minimum value of 0.8 for the composite reliability indicator was defined.

Concerning assessment of individual indicators reliability, the analysis involves assessing correlations of each indicator with its latent variable. Items with higher correlations with the underlying construct indicate that they have much in common with their underlying variable. Moreover, correlation values above 0.708 are generally accepted. For correlations of 0.708, the latent variable explains 50% ($0.708^2 = 0.5$) of each indicator variance (Hair et al., 2017). However, advice regarding this issue vary. Some authors mention a minimum indicator loading of 0.40, so values below should be removed from the model (Hulland, 1999). Other authors refer to a minimum acceptable of 0.50 to 0.60 (Chin, 2010), or more

conservative values of 0.70. Nevertheless, indicators with correlation values between 0.40 and 0.70 should only be removed if the exclusion improves the composite reliability (Hair et al., 2011).

Considering the numerous proposals in literature, in a first stage the advice from Falk and Miller (1992) was followed. According to these authors items with correlation with the underlying construct less than 0.55 suggest that only 30% of the latent variable is related with the item. Consequently, in a first stage of the measurement models analysis, indicators with a correlation with the underlying construct less than 0.55 were removed from the model.

The convergent validity was assessed using the AVE value. According to Fornell and Larker (1981) constructs with an AVE below 0.5 lack convergent validity. Discriminant validity was assessed using two methods. First, The HTMT criterion (Henseler et al., 2015) which states that the HTMT values should be below 0.85 and that the inference criterion must show the confidence intervals to be below the value one in order to conclude that discriminant validity is established to a measurement model. Second, the criterion proposed by Fornell and Larker (1981), which indicates the presence of discriminant validity when the square roots of the AVE of each variable is higher than its highest correlation with remaining constructs.

Consequently, the first stage of the procedure involved the assessment of the individual items' correlations with the underlying constructs. During this process, several items presenting values below the defined minimum of 0.55 (Falk & Miller, 1992) were eliminated from the models. Specifically, items COL1 = 0.446, COL2 = 0.491, COL16 = 0.469, and TC8 = 0.457 were removed from the structural model and data were computed again. The process implied an improvement of the COL variable composite reliability from 0.972 to 0.973. The removal of item TC8 maintained the TC construct at 0.975.

Following this procedure, results from the items loadings were further assessed and all the items of each measurement model were shown or have a correlation with the underlying construct above 0.55, implying that the models passed the individual indicators reliability test.

The next step consisted in analysing the measurement models' reliability and validity, Table 35 shows results from the composite reliability and AVE values, to assess the construct reliability, and the convergent validity, respectively, after the removal of items with loadings below 0.55.

Table 35

Construct reliability and validity after removing items below 0.55

	Composite reliability (rho_a)	Average variance extracted (AVE)
COL	0.973	0.599
LC	0.940	0.521
TA	0.933	0.472
TC	0.975	0.574

Source: Own elaboration

Results from construct reliability and validity show that all the variables passed the test of construct reliability, presenting composite reliability above the threshold of 0.8 and 0.9 (Hair et al., 2017; Nunnaly & Bernstein, 1994). Convergent validity represents the extent to which the construct converges to explain the variance of its items and, to be established, the AVE values must be 0.5 or higher (Hair et al., 2019). Results show an AVE value of 0.472 for the TA construct, which is below the mentioned threshold. Consequently, further procedures were undertaken. Specifically, the correlations of the TA constructs were carefully evaluated and the decision to remove the ones negatively affecting the construct AVE values was taken with caution in order to not affect negatively the construct composite reliability (Hair et al., 2017). During this process items TA1 = 0.662, TA4 = 0.622, TA5 = 0.622, TA8 = 0.667, and TA9 = 0.694 were removed from the model. This procedure led to the construct reliability and validity results shown in Table 36.

Table 36

Construct reliability and validity - final results

	Composite reliability (rho_a)	Average variance extracted (AVE)
COL	0.973	0.599
LC	0.940	0.521
TA	0.936	0.516
TC	0.976	0.574

Source: Own elaboration

Consequently, construct reliability and convergent validity were established. All composite reliability indicators were above 0.9 and all the AVE values were also above 0.5, respectively.

The following procedure involved the assessment of the discriminant validity. Discriminant validity is the extent to which a variable is distinct from other variables. This implies that establishing discriminant validity indicates that a construct is unique and is not represented by other variables in the model (Hair et al., 2017). The methods used to assess discriminant validity were the Fornell and Larker (1981) criterion and the HTMT criterion (Henseler et al., 2015). The Fornell and Larker criterion consists in analysing the square root of the AVE values of each construct which must be higher than its correlation with each one of the remaining constructs in the model, Table 37 shows the obtained results.

Table 37

Discriminant validity - Fornell and Larker (Fornell & Larker, 1981) criterion

	COL	LC	TA	TC
COL	0.774			
LC	0.301	0.722		
TA	0.236	0.243	0.718	
TC	0.754	0.330	0.163	0.757

Source: Own elaboration

Table 37 presents in diagonal, marked in bold, the square root of the model variables' AVE. All the square roots of the AVEs are above the constructs correlations with the remaining constructs, which shows that according to Fornell and Larker (1981) criterion discriminant validity was established.

Concerning the HTMT criterion, Table 38 shows the HTMT values; the inference criterion shows confidence intervals.

Table 38

Discriminant validity - HTMT values

	Heterotrait-monotrait ratio (HTMT)	Confidence intervals	
		5.0%	95.0%
LC <-> COL	0.283	0.187	0.386
TA <-> COL	0.214	0.152	0.302
TA <-> LC	0.294	0.177	0.417
TC <-> COL	0.761	0.701	0.807
TC <-> LC	0.311	0.210	0.418
TC <-> TA	0.155	0.107	0.174

Source: Own elaboration

According to results, the HTMT values were below 0.85. Moreover, value 1 is outside the inference criterion confidence intervals which, according to Henseler et al. (Henseler et al., 2015), indicates that discriminant validity was established.

Once the overall constructs in the SEM model were analysed and reliability, convergent validity and discriminant validity were found, the next step consists in evaluating the structural model. However, before that, regarding item correlations to the underlying constructs, the results after the process of purifying the measurement models are presented in Table 39.

Table 39

Indicator to construct final loadings

	COL	LC	TA	TC
COL3	0.711			
COL4	0.629			
COL5	0.692			
COL6	0.811			
COL7	0.738			
COL8	0.863			
COL9	0.852			
COL10	0.846			
COL11	0.866			
COL12	0.823			
COL13	0.743			
COL14	0.819			
COL15	0.856			
COL17	0.563			
COL18	0.780			
COL19	0.831			
COL20	0.816			
COL21	0.717			
COL22	0.759			
COL23	0.725			
COL24	0.712			
COL25	0.773			
COL26	0.790			
LC1		0.587		
LC2		0.660		
LC3		0.561		
LC4		0.627		

	COL	LC	TA	TC
LC5		0.622		
LC6		0.650		
LC7		0.833		
LC8		0.841		
LC9		0.859		
LC10		0.814		
LC11		0.795		
TA2			0.743	
TA3			0.692	
TA6			0.706	
TA7			0.704	
TA10			0.639	
TA11			0.716	
TA12			0.809	
TA13			0.726	
TC1				0.683
TC2				0.672
TC3				0.679
TC4				0.714
TC5				0.610
TC6				0.599
TC7				0.638
TC9				0.593
TC10				0.711
TC11				0.807
TC12				0.816
TC13				0.766
TC14				0.823
TC15				0.799
TC16				0.839
TC17				0.858
TC18				0.822
TC19				0.811
TC20				0.823
TC21				0.846
TC22				0.841
TC23				0.814
TC24				0.844
TC25				0.731
TC26				0.596
TC27				0.831
TC28				0.739
TC29				0.729
TC30				0.792

Source: Own elaboration

Following the obtained results regarding assessment of the measurement models, the next section evaluates structural models and the proposed hypotheses.

5.1.3.1. Evaluation of the structural model

Following the obtained results in the previous section and the procedures depicted in Figure 37, this section seeks to evaluate the structural model proposed in the quantitative study of this research. This process involves a set of

steps, following guidelines from Hair et al. (2019, 2017) and the obtained results which were computed using the SmartPLS software (Ringle et al., 2022).

Figure 37

Steps for evaluating the structural model
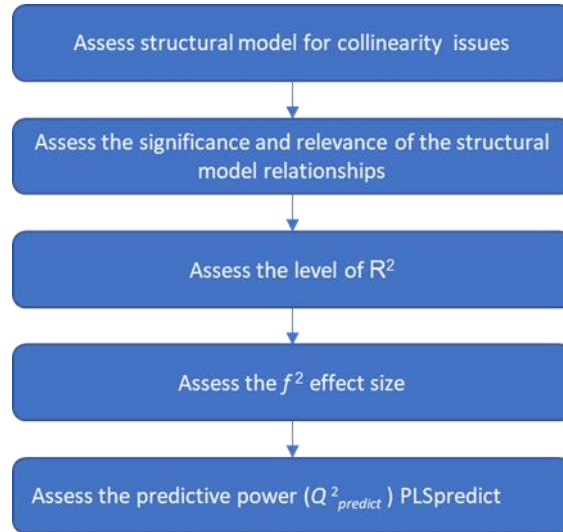
Source: adapted from Hair et al. (2017)

According to the process described in Figure 37, the first step consists in evaluating the VIF values. This procedure consists in evaluating collinearity. Collinearity and multicollinearity occur in the presence of a linear relationship among two or more variables, which in this study is expressed by the correlation between independent variables, a special case of multicollinearity (Alin, 2010). This correlation refers to the possibility of a variable being explained by other variables in the model. In practice, when multicollinearity increases, the assessment of the variable effects becomes harder to determine (Hair et al., 2012). Table 40 presents the VIF values for the structural model variables.

Table 40

Collinearity analysis – VIF values

	COL	LC	TA	TC
COL				
LC	1.170			
TA	1.071			1.000
TC	1.132			

Source: Own elaboration

Results from VIF values (Table 40) show that all values are significantly below the value 5, and below the ideal value of 3, which means that the collinearity among the predictor constructs are not relevant and that the analysis to the structural model can continue (Sarstedt et al., 2019). Consequently, the following paragraphs present the assessment of the remaining paraments to assess the structural model.

The significance of the relevance of the structural model relationships (hypotheses) is made through an analysis of the exogenous variables' effects on endogenous variables and are evaluated trough the model's coefficient paths. The coefficient paths vary between -1 e 1. Values close to 1 represent a strong positive contribution to explain the endogenous variable. On the other hand, a coefficient path close to -1 means a strong negative effect on the endogenous variable. To perform the analysis, a bootstrapping procedure was computed in SmartPLS software, using a 5,000 bootstrap samples, which enables to compute the t values and the p values for all the structural models. The path significance depends on its standard error which is obtained through the bootstrapping procedure. The significance level for one-tailed test (testing the statistical significance in the one direction of interest) such as the one in this research is 1.28, 1.65, and 2.33 for significance levels of 10%, 5% and 1%. This study uses a 5% significance level for one-tailed test, which implies a critical value of 1.65 and a p value of 0.05. Consequently, to conclude that a relationship is significant, for a significance level of 5%, the critical value t must be larger 1.65 and the p value must be smaller than 0.05. In other words, the p value represents the probability of rejecting a true null hypothesis, or to assume a significant path coefficient when it is not significant (Hair et al., 2017).

The coefficient of determination is the most usual measure to assess a structural model and it is many times interpreted by researchers as a measure of the model's predictive power. However, the "R^2 only indicates the model's in-sample explanatory power" (Hair et al., 2019). It represents (in proportion or percentage) the model's exogeneous latent variables combined effects on an endogenous latent variable (Hair et al., 2017). Consequently, this indicator represents the variance in dependent variable explained by the independent variables linked to it. The R^2 value varies between 0 and 1. The recommended values for the R^2

varies in the literature. For instance, Falk and Miller (1992) recommend a minimum R^2 of 0.10, Chin (1998) suggests R^2 values of 0.67, 0.33, and 0.19 representing substantial, moderate, and weak, and Hair et al. (2019) argue that an R^2 of 0.75, 0.50, and 0.25 is considered substantial, moderate and weak.

The effect size f^2 value represents the change in the R^2 when a specified and independent variable is omitted from the model and is used to evaluate whether the removed variable has a relevant impact in the endogenous constructs (Hair et al., 2017). The recommended values for the f^2 value are of 0.35, 0.15, and 0.02, representing large, medium and small effects (Cohen, 1988).

Regarding the predictive power of the model, the PLSpredict procedure was computed. PLSpredict seeks to surpass problems raised by other methods and includes a set procedures evaluating the predictive performance of PLS models (Shmueli et al., 2016).

Consequently, after the data regarding multicollinearity was analysed, structural models' results can be observed in Table 41.

Table 41

Structural model aggregated indicators

Hypotheses	Relationship	Coefficient path (B)	Correlation	Explained variance*	R^2	Q^2predict
		Teachers' Collegiality			0.027	0.009
H1	TA -> TC	0.163	0.163	2.7%		
		Teachers' Collaboration			0.582	0.046
H2	TA -> COL	0.109	0.236	2.6%		
H3	TC -> COL	0.724	0.754	54.6%		
H5	LC -> COL	0.036	0.301	1.1%		

*Explained variance = Coefficient path x Correlation x 100%

Source: Own elaboration

Table 41 shows the information regarding the main results from the structural model. Column "Relationship" presents the direction of the effect. In this research, all the hypotheses point to a positive effect from one variable to another. Column "Coefficient path (B)" indicates the signal and value of the effect of the independent variables on dependents variables.

The explained variance is computed by multiplying the coefficient path of each hypothesis by its corresponding correlation. This indicator provides an estimate

of the percentage of variance explained by the predicted variable, that is explained by the predictor variable. An exogenous variable should account at least for 1.5 of the variance of the predicted variable (Falk & Miller, 1992). Considering this rule of thumb, results presented in Table 41 show that paths TA -> TC, TA -> COL, and TC -> COL, with explained variances of 2.7%, 2.6%, and 54.6% pass this rule of thumb. On the other hand, path LC -> COL has an explained variance of 1.1% and does not pass the rule.

Table 41 further shows the coefficient of determination R2 for the endogenous variables. R^2 values indicate the explanatory power of the model. Regarding endogenous variable TC, a R^2 of 0.027 suggests that the proposed model explains 2.7% (0.027*100%) of the effect of the exogenous variable TA in this variable. Thus, endogenous variable TC variance is explained by 2.7% by the effect of variable TA, and represents a weak R^2 (Chin, 1998; Falk & Miller, 1992; Hair et al., 2019).

Concerning variable COL, results show an R^2 of 58.2% (0.582*100%) and indicate that 58.2% of the variance of variable COL is explained by the combined effects of variables TA, TC and LC. According to the background literature, this result is considered moderate to strong (Chin, 1998; Hair et al., 2019).

Results from PLSpredict indicate that the model has predictive power if the $Q^2_{predict}$ of the latent variables endogenous constructs are higher than zero. The $Q^2_{predict}$ from all indicators of the measurement models were also evaluated and the majority were higher than 0. Moreover, most indicators in the PLS-SEM analysis yield smaller prediction errors compared to the linear regression model. Consequently, this indicates a medium predictive power (Shmueli et al., 2019).

Following the analysis to the structural model, Table 42 shows the coefficient paths values and t statistics.

Table 42

Coefficient paths and critical t values

Hypotheses	Relationship	Coefficient path (B)	t statistics (bootstrap)	Significant
H1	TA -> TC	0.163	1.798	Yes
H2	TA -> COL	0.109	1.941	Yes
H3	TC -> COL	0.724	19.604	Yes
H5	LC -> COL	0.036	0.663	No

Source: Own elaboration

Regarding the visualisation of the structural model, Figure 38 shows the general relationships defined by the research hypotheses, with the arrows signing the direction of the effect and the coefficient path values.

The effects of the exogenous variables on the endogenous variables are shown in Table 42. When analysing the results from the structural model, one needs to jointly evaluate sign, direction, and significance of all coefficient paths. If all paths point in the same direction and the underlying paths are significant, the hypotheses are supported by the empirical results.

Figure 38

Structural model coefficient paths
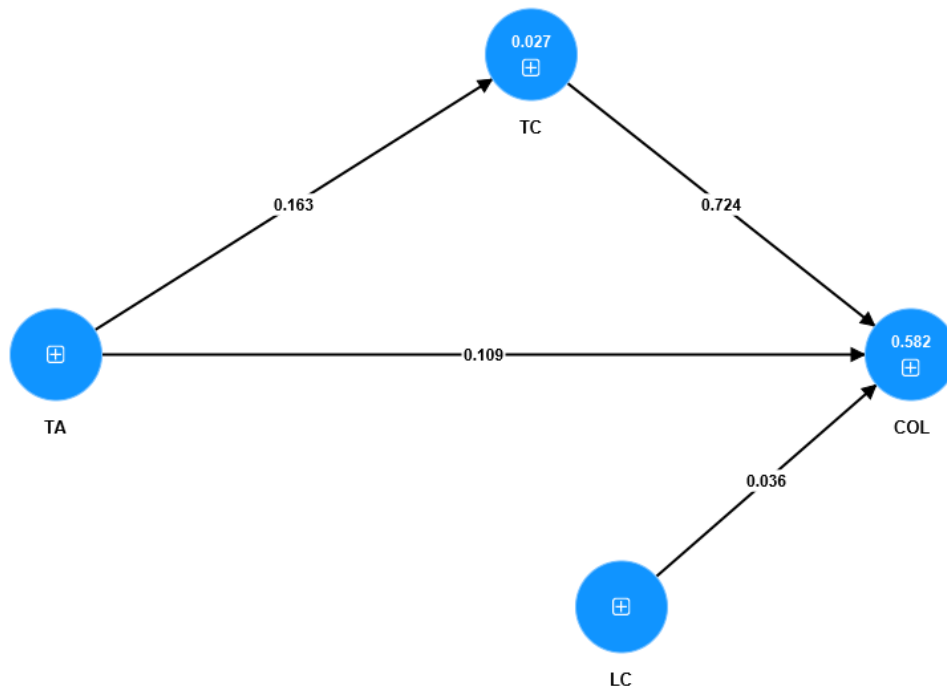
Source: Own elaboration

This research uses a 5% significance level for one-tailed test, which means that results confirm the proposed hypotheses if the t statistics is larger than 1.65. According to the obtained results, H1: t statistics = 1.798, H2: t statistics = 1.941, and H3: t statistics 19.604, are significant which means that there is a positive direct relationship between Teacher Autonomy and Teacher Collegiality (H1); there is a positive direct relationship between Teacher Autonomy and Teacher Collaboration (H2), and there is a positive direct relationship between Teacher Collegiality and Teacher Collaboration (H3). On the other hand, empirical results reject H5, which states that there is a positive relationship between Language Competence and Teacher's Collaboration: t statistics = 0.036.

Regarding the effect size f^2, results are present in Table 43.

Table 43

Effect size f2

	COL	LC	TA	TC
COL				
LC	0.003			
TA	0.027			0.027
TC	1.108			

Source: Own elaboration

The effect size f^2 represents the change in the R^2 when a specified and independent variable is omitted from the model. It assesses whether the omitted variable has a relevant impact in the dependent variables. Results (Table 43) show that excluding variable LC from the model produces small effect sizes (0.003) on variable COL; excluding variable TA produces a small effect size (0.027) on variable COL and variable TC; and omitting variable TC from the model produces a strong effect size on variable COL.

5.1.3.2. Evaluation of the mediating effects

Mediation occurs when a variable named mediator variable influences relationships between two other constructs, i.e., a change in the exogenous constructs causes a change of the mediator variable, which in turn affects the endogenous construct (Hair et al., 2017). Consequently, the mediating occurs when an independent variable influences a dependent variable through the effect in at least a third variable, named mediator (Preacher & Hayes, 2008). In our

model, H4 states that the relationship between Teacher's Autonomy and Teachers' Collaboration is mediated by Teachers' Collegiality. Consequently, the goal is to assess if a change in the TA variable causes a change in the TC construct, which in turn results in a change in the COL variable.

According to Hair et al. (2017) this type of methodology is suitable for PLS-SEM analysis. Thus, the procedure proposed by Preacher and Hayes (2008, 2004) is followed to assess the mediating effect of the variable TC on the relationship between TA and COL (H4).

Table 44 presents the mediating effects of variable TC on the relationship between variable TA and variable COL.

Table 44

Mediating effect of Teacher Collegiality

					Percentile bootstrap 95% confidence interval Coefficient	
Hypothesis (H4)	Indirect effect	t statistic	p value	Significant	Lower bound	Upper bound
TA -> TC -> COL	0.118	1.780*	0.038	Yes	0.053	0.22

* Bootstrapping 95%, confidence interval based on 5,000 bootstrap samples; one tailed test

Source: Own elaboration

Empirical results presented in Table 44 show that Hypothesis H4 is confirmed, that is, that the relationship between Teacher's Autonomy and Teachers' Collaboration is mediated by Teachers' Collegiality is supported. This result indicates that a change in variable TA causes a change in the mediating variable TC, which in turn affects the endogenous construct COL.

5.1.4. Summary of results from the structural model

Summarising the obtained results, from a total of 5 hypotheses 4 were supported by the empirical results. Moreover, results further showed that measurement models do not present multicollinearity issues, and that H1: TA -> TC, H2: TA -> COL, and H3: TC -> COL present an explained variance above 1.5%, while H5: LC -> COL presents an explained variance below the threshold of 1.5% (Falk & Miller, 1992). Regarding the explanatory power of the model (R^2), evidence shows that variable exogenous TA has a weak explanatory power on

endogenous variable TC (R^2 = 2.7%). Regarding variable COL, results show that the combined effects of variables TA, TC and LC have a moderate to strong explanatory power on variable COL (R^2 = 58,2%).

Results from PLSpredict show that the $Q^2_{predict}$ of the latent variables endogenous constructs are higher than zero. Additionally, the majority of all indicators of the measurement models were also higher than 0 and most of the PLS-SEM analysis yields smaller prediction errors compared to the linear regression model, which means a medium predictive power. The effect size of removing variable TA produces a small effect size on variable COL, removing variable TA produces a small effect size on variable COL and removing variable TC from the model implies a strong effect size on variable COL.

Concerning the mediating variable TC, results show that the relationship between Teacher Autonomy and Teacher Collaboration is mediated by Teacher Collegiality.

Consequently, the obtained results indicate the following effects:

H1 – Confirmed: there is a positive direct relationship between Teacher Autonomy and Teacher Collegiality

H2 – Confirmed: There is a positive direct relationship between Teacher Autonomy and Teacher Collaboration.

H3 – Confirmed: There is a positive direct relationship between Teacher Collegiality and Teacher Collaboration.

H4 – Confirmed: The relationship between Teacher Autonomy and Teacher Collaboration is mediated by Teacher Collegiality.

H5 – Rejected: There is a positive relationship between Language Competence and Teacher's Collaboration.

5.2. Data Analysis – Interviews

In this section, the outcomes of the semi-structured interviews will be explored, unveiling perspectives that may enhance our discussion of the results. Qualitative data analysis is organised following the main categories and sub-categories coded from the semi-structured interviews, as seen in Table 45.

Table 45

Coded semi-structured interviews data per respondent

R*	Code	Subcode	No. of Refs.	Percentage
R1	Autonomy	Content and Teaching Materials	6	10.75%
		Methodologies	4	4.68%
	CLIL – Bilingual Education	Assessing Language Competence of students	5	3.44%
		Conditions for CLIL – Bilingual Education	4	3.57%
		Training Needs	10	7.60%
	Collegiality and Collaboration	Informal Support Actions	3	9.12%
		Interpersonal Relationships and interaction Between Academics	5	5.02%
		Professional Interaction	2	1.31%
	Teacher Language Competence	EAP	-	-
		ESP	1	3.47%
		Language Competence	2	0.50%
R2	Autonomy	Content and Teaching Materials	-	-
		Methodologies	2	7.85%
	CLIL – Bilingual Education	Assessing Language Competence of students	3	2.00%
		Conditions for CLIL – Bilingual Education	7	5.63%
		Training Needs	3	3.53%
	Collegiality and Collaboration	Informal Support Actions	-	-
		Interpersonal Relationships and interaction Between Academics	-	-
		Professional Interaction	1	1.13%
	Teacher Language Competence	EAP	-	-
		ESP	-	-
		Language Competence	3	2.07%
R3	Autonomy	Content and Teaching Materials	3	2.33%
		Methodologies	4	5.60%
	CLIL – Bilingual Education	Assessing Language Competence of students	10	13.44%
		Conditions for CLIL – Bilingual Education	7	7.87%
		Training Needs	7	7.21%

R*	Code	Subcode	No. of Refs.	Percentage
	Collegiality and Collaboration	Informal Support Actions	-	-
		Interpersonal Relationships and interaction Between Academics	2	1.57%
		Professional Interaction	2	0.98%
	Teacher Language Competence	EAP	3	2.03%
		ESP	3	2.44%
		Language Competence	3	2.21%
R4	Autonomy	Content and Teaching Materials	5	6.05%
		Methodologies	10	12.49%
	CLIL – Bilingual Education	Assessing Language Competence of students	3	3.05%
		Conditions for CLIL – Bilingual Education	7	7.47%
		Training Needs	4	5.32%
	Collegiality and Collaboration	Informal Support Actions	2	1.73%
		Interpersonal Relationships and Interaction Between Academics	5	6.10%
		Professional Interaction	5	3.37%
	Teacher Language Competence	EAP	1	0.90%
		ESP	3	2.49%
		Language Competence	5	4.19%
R5	Autonomy	Content and Teaching Materials	2	1.90%
		Methodologies	2	4.14%
	CLIL – Bilingual Education	Assessing Language Competence of students	4	6.66%
		Conditions for CLIL – Bilingual Education	5	7.33%
		Training Needs	4	6.35%
	Collegiality and Collaboration	Informal Support Actions	-	-
		Interpersonal Relationships and interaction Between Academics	1	1.62%
		Professional Interaction	2	1.86%
	Teacher Language Competence	EAP	-	-
		ESP	-	-
		Language Competence	2	1.81%
R6	Autonomy	Content and Teaching Materials	4	4.10%

R*	Code	Subcode	No. of Refs.	Percentage
		Methodologies	3	5.33%
	CLIL – Bilingual Education	Assessing Language Competence of students	6	5.40%
		Conditions for CLIL – Bilingual Education	6	6.15%
		Training Needs	6	4.12%
	Collegiality and Collaboration	Informal Support Actions	2	0.89%
		Interpersonal Relationships and interaction Between Academics	7	5.13%
		Professional Interaction	2	1.59%
	Teacher Language Competence	EAP	1	0.44%
		ESP	3	2.49%
		Language Competence	3	1.41%
R7	Autonomy	Content and Teaching Materials	2	1.79%
		Methodologies	4	4.01%
	CLIL – Bilingual Education	Assessing Language Competence of students	3	3.64%
		Conditions for CLIL – Bilingual Education	6	6.53%
		Training Needs	13	7.67%
	Collegiality and Collaboration	Informal Support Actions	-	-
		Interpersonal Relationships and interaction Between Academics	2	0.07%
		Professional Interaction	1	0.77%
	Teacher Language Competence	EAP	-	-
		ESP	1	0.65%
		Language Competence	1	0.35%
R8	Autonomy	Content and Teaching Materials	2	1.54%
		Methodologies	2	8.98%
	CLIL – Bilingual Education	Assessing Language Competence of students	2	7.13%
		Conditions for CLIL – Bilingual Education	5	3.93%
		Training Needs	7	7.46%
	Collegiality and Collaboration	Informal Support Actions	1	1.12%
		Interpersonal Relationships and interaction Between Academics	1	0.26%
		Professional Interaction	2	4.21%

R*	Code	Subcode	No. of Refs.	Percentage
	Teacher Language Competence	EAP	-	-
		ESP	3	4.82%
		Language Competence	1	0.48%

* R = Respondent
Source: Own elaboration

5.2.1. Autonomy

Lecturers' perceptions on their autonomy as teachers are now presented, sub-divided into two sub-categories: methodologies they claim to use on the one hand; and content and teaching materials, on the other.

5.2.1.1. Methodologies

The sub-category 'methodologies' is analysed first by respondent. Methodologies in the context of teachers' autonomy are broadly related with defining learning goals and objectives, guidelines, assessment and class procedures.

In the interview of Respondent 1 (R1) four references were coded with a 4.68% Coverage. Regarding the type of methodologies, assignments and activities, R1 indicates that "with no training in pedagogy, I have tried to implement several measures to correct weaker points caused by this gap" and that one of the main strategies used has been the "decrease of lecturing time and increase of students' autonomous work". The use of technologies to teach in English "depends on the curricular unit", which indicates that the teacher has autonomy to decide what to do and which resources to use. Assessment is usually based on "tests, assignments, worksheets or exercises". Once again, this lecturer (R1) emphasyzes that

> the instruments used vary from Curricular Unit (CU) to CU. In more theoretical CUs, I use diverse assessment types with worksheets, individual/group work, tests. In practical CUs, I give more emphasis to tests and less to individual/group work.

Respondent 2 (R2) makes two methodological references with a 7.85% Coverage. R2 refers to the "use of conventional teaching methodologies, whether in the case of face-to-face teaching or in the case of teaching online", specifying

that "these methodologies focus mainly on the nature of the knowledge I want to provide students with". Assessment is usually "done using written tests (tests and exams) or practical tasks or, even, discussing specific topics raised by some questions put forward by students".

With a 5.60% coverage, four references were coded in Respondent 3's (R3) interview. R3 uses "varied" and "innovative" methodologies, mainly using "lectures, but asking questions to students". In R3's opinion technologies play the same role whether teaching in Portuguese or in English. However, "there is more material available in English" that R3 also uses in both "Portuguese and bilingual classes". These statements show the respondent's autonomy to choose methodological approaches. In this lecturer's curricular units "assessment is diversified and changes every year", which indicates that R3 has the liberty to adapt and change assessment whenever thought necessary.

Regarding Respondent 4 (R4), ten references representing 12.49% coverage, were identified. R4 applies methodological strategies "depending on the specific situation" to ensure the greatest possible efficiency in communicating with students". Showing a high degree of autonomy, R4 also mentions that

> when the number of Portuguese language students is very high when compared to Erasmus students, or when the content is particularly complex, I invite foreign language students to regular weekly tutoring sessions, exclusively in the foreign language, to help them.

R4 appears to have the necessary autonomy to adapt methodologies according to each speciffic situation:

> the methodologies I use in class depend mainly on the objectives associated with each occasion and teaching-learning moment. I would say that in my pedagogical practice I use a mix of tools and solutions for each specific occasion.

R4 considers innovative by "the fact that [methodologies] are customized for each occasion" which "translates, in my personal view, into a certain type of innovation". R4 also thinks that "identical methodologies cannot be successfully used for different objectives and challenges, particularly in Higher Education". R4

also believes that the methodologies used "are centred on students": "methodologies, strategies and pedagogical practices must be adequate and centred on the real needs of students in each concrete context". R4 uses "lectures when they are purely theoretical and support[s] other theoretical-practical classes and/or laboratory practices". R4 holds that "even in lectures, I try to use case studies, or concrete tasks to help students retain exposed concepts" and argues that "the favourite classes are classes based on real projects, or on applied tasks, in which collaborative and cooperative work between students and/or the teacher is encouraged". R4 truly believes students must develop a certain degree of autonomy indicating that "autonomous work is part of the genesis of the current paradigm of Higher Education, based on the Bologna Model" and justifies "that is why I try to encourage, whenever possible, students' autonomous work, supported by the work of the teacher as a mediator of this autonomous learning". For R4 "class evaluation is based on individual and group assessment components". "Group work and oral presentations are usually part of the assessment methods" in R4's Curricular Units, although "in group work I usually try to have groups of two students only". R4 further explains that "until the tenth week of the semester, there must be an evaluation moment relevant to the final grade", usually "based on a group work of two students with an oral presentation". R4 summarizes methodologies used as a way "to adapt teaching-learning methods and solutions according to the context and target audience". When referring to teaching materials and resources, R4 says that "there is much more content available in English than in Portuguese, so I often use illustrative examples in English in the classes taught in Portuguese".

Respondent 5 (R5) only mentions methodologies twice (4.14% Coverage). R5 states that "assessment includes the preparation of written tests, group and individual work, as well as the participation of students in carrying out/solving practical exercises (eg case studies)". When asked about teaching in English R5 claims to have "enough autonomy to use English for teaching purposes".

Three refences coded as autonomy methodologies were identified in Respondent 6's interview representing a 5.33% Coverage. R6's classes are based on lectures and lab practices. When asked about what type of methodologies usually used, R6 writes that

the teaching methodologies depend on the level of education. Normally I use lectures, always complemented with problem solving, and then with an application in the laboratory. In the laboratory students carry out experiments, in groups of two or three, and write reports.

R6 also mentions that in more practical subjects "the practical assessment is based on carrying out a project, including the writing of a report, and its presentation to colleagues". Showing some degree of autonomy, R6 points to some innovative practices such as "(…) doing some Kahoot-based mini-tests". R6 expresses relative concern about students and assessment within a continuous evaluation model in her CUs, "but as there is a lot of absenteeism, the assessment is based on theoretical tests, practical tests, carrying out projects, writing reports on the experiences carried out in the laboratory".

In Respondent 7's interview, four references were coded with a 4.01% Coverage. R7 refers having theoretical classes with problem solving and lab work complemented with the writing of a report: "My classes are lectures complemented with exercises and group laboratory work followed by a report". R7 also indicates that "theoretical classes are expositive, using questions from students to clarify what I am teaching". Assessment is based on "written tests and reports of laboratory work". When asked about the importance given to language when teaching in English, R7 answers that "the content of the curricular units is what counts most in terms of assessment".

Two references were identified and coded in Responded 8's answers (8.98% Coverage). Being a teacher of a practical subject, R8 highlights that classes "are mostly practical". R8 does rate classes as innovative but claims that "students learn by doing". R8 considers students' preparation for their future work is very important and, therefore "there is a lot of experimentation, a lot of failure and that is the way to learn about what they will find in the job market". As such, "there are no repeated classes, concrete industry cases that students must solve are also used, and each case is different". R8 also says that "usually, students work in groups of two in laboratory classes". In terms of assessment R8 indicates that it "always includes a theoretical component and a practical component" and that

"students are assessed by tests or exams and through practical assignments or projects".

5.2.1.2. Content and teaching materials

Respondent 1 refers to content and teaching materials six times during the interview (10.75% Coverage). When asked about the type of methodologies used, R1 focusses activity "on exposing concepts in a short and simple way and asking students to test them in practical exercises". R1 further explains that "at first, normally individually" because "the idea is to make them reflect on the taught concepts". After this initial stage, the teacher usually asks "for collaborative work (from the students) to solve practical cases/exercises so that any difficulties are shared, and doubts clarified". This collaborative work among students is always monitored by the lecturer who interferes "whenever necessary to clarify several types of problems that may cause some type of difficulties, either in terms of the content, or in terms of interaction between group members and/or between groups".

When teaching in English R1 uses "worksheets, PowerPoint, specific software (spreadsheets, filling out forms, etc.), videos" as materials and resources. When asked about the use of technologies to teach in English R1 points to digital technologies, mainly software that allows communication/introduction of data/execution of calculations and statistical/numerical treatments remotely via computer/tablet/mobile phone. However, despite teaching in English R1 claims to assess only content: "as a content teacher, I evaluate the syllabus, giving [the students] the full percentage [based on content]". Still, R1 adds that "as it happens when I teach in Portuguese, there are aspects to improve. Materials need to be improved and student feedback needs to be incorporated into materials and teaching". "The possibility of providing methods and content that are more suited to the requirements of a global labour market" is seen by R1 as an advantage of this type of initiatives (referring to bilingual education and ICLHE/CLIL).

Three references were coded in R3's interview, representing a 2.33% Coverage. R3 indicates that when teaching in English "Moodle [is used] as a repository for

monographic documents, PowerPoint presentations and videos". R3 is pleased with the materials used to teach in English but tries "to innovate whenever I feel it is appropriate". R3 highlights the interest of the CLIL course undertaken as well as teaching in a foreign language, in this case English, as something already undergoing "in a partial and informal way".

Regarding Respondent 4, five references were identified and coded with a 6.05% Coverage. R4 shows concern in adapting materials, resources, and ways of teaching:

> my first concern when I must address an audience is to understand who this audience is and what is the objective of what I must communicate. Then, I try to find out how much time I have for that session and what content(s) to communicate in that session. Finally, I try to use the most appropriate materials and tools for this purpose.

R4 "[uses] didactic resources" in connection to students' needs: "the most appropriate for each class, group of students and learning context" when teaching both in Portuguese and English. Digital technologies are always present in R4's teaching "(face-to-face, online, and blended) supported by a digital learning platform (Moodle), so all materials and content used and/or necessary for classes are available to students on that same platform". There is "available a set of links of interest that complement the information made available on the platform". R4 also believes that "the online solutions and materials" meet students' "expectations".

Respondent 5 is pleased with the materials used for teaching in English although there is a refusal to identify "linguistic aspects related to teaching English". Only these two references were coded in R5, representing a 1.90% Coverage.

For R6's answers to the interview, four references related to content and teaching materials were coded (4.10% Coverage). Showing autonomy to adapt to new challenges and difficulties, R6 indicates that "due to the type of students, I am considering having part of the assessment done though a task-based learning approach throughout the semester". When teaching in English R6 usually uses digital technologies such as "PowerPoint presentation, YouTube videos and

some digital resources made by myself, and Kahoot applications, Mentimeter, and worksheets". R6 also indicates being pleased with the materials, but regrets "not using them more due to lack of time for their preparation".

R7, with a 1.79% Coverage, only refers to content and teaching materials twice. R7 distinguishes lectures from lab classes indicating that "in theoretical classes I use PowerPoint and in laboratory classes I use worksheets both in Portuguese and in English". R7 is pleased with the materials used to teach in English but is willing to learn more about different types of approaches. This shows R7's degree of autonomy to adapt content and materials: "I'm satisfied, but I would like to learn other approaches that I still don't know about".

Finally, in R8's interview two references were coded as well, with a 1.54% Coverage. R8 claims to be "satisfied with the materials" used. R8 declares not to assess "linguistic aspects" because "the theoretical component involves calculation, so there is little writing needed", thus highlighting a type of specific content.

5.2.2. Collegiality and collaboration

This subchapter addresses teachers' ideas on collegiality and collaboration, organized into three sub-categories: informal support actions (such as being part of a CoP or experimenting with colleagues), interpersonal relationships and interaction between academics which highlights trust and confidence among colleagues, mutual respect, sharing, accepting feedback and suggestions; and, professional interaction which announces more formal collegial forms or collaborative performance to accredit programmes, design curricula or interdepartmental decisions.

5.2.2.1. Interpersonal relationships and interaction between academics

Interpersonal relationships and interaction between academics is related with trust and confidence among colleagues; respect for colleagues; sharing

successes and challenges; and accepting feedback and suggestions from colleagues.

Five references were coded in R1's interview, with 5.02% Coverage. For R1 "monitoring and obtaining feedback is essential to improve performance". Not teaching in a foreign language often, R1 thinks that more time is needed for lesson preparation when teaching in English. However, R1 highlights that "this issue would be solved with the implementation of this type of activities", referring to bilingual education initiatives. R1 emphasizes that collaboration is an advantage: "the fact that it [ICLHE/ICLHE or bilingual education] allows for collaborative work between professionals from different scientific areas, with different objectives, without jeopardizing the interpersonal relationship between both professors". This type of professional collaboration also enables the "possibility of reflecting on procedures and processes usually taught in a non-mother tongue". R1 claims to be involved in the ICLHE/CLIL project only because of a previous request of the language teacher to participate in this initiative: "participation in a bilingual teaching process was essentially due to previously meeting my fellow language teacher, who invited me to participate".

Respondent 3 made two references related to Interpersonal relationships and interaction between academics (1.57% Coverage). When participating of the IPCB ICLHE/CLIL project, a language colleague attended classes and gave important feedback, despite "feel[ing] the need" to receive feedback when teaching in English.

With a 6.10% Coverage, five references were identified in R4's interview, who highlighted the following points as mitigating strategies for the difficulties encountered when teaching in English:

> the multiple instances of help received from English language teaching colleagues when preparing the sessions and modules of Content and Language Integration within the scope of the Curricular Units of the degree courses in Industrial Engineering, as well as the CTeSP of Automation and Industrial Management.

R4 goes on further to explain that "even today, if necessary, I count on [the English teacher's] help in clarifying and solving concrete linguistic needs".

R4 also thinks feedback is useful and important arguing that on the occasions "of having English language teachers collaborate and monitor teaching-learning tasks and activities, their feedback was quite rich" and allowed R4 "to significantly improve" own "knowledge of that language". Even though bilingual approaches increase the workload "in terms of output for students, and even for teachers, a bilingual approach in teaching-learning moments is much more enriching".

For R4 the bilingual approach is a way of working, collaborating, and growing that bears "several fruits". R4 "cannot perceive a limit to this collaborative work" and hopes "it can last for a long and constructive time!" besides highlighting collaboration as "all the moments of work, socializing and of learning that these initiatives created".

R5 thinks that, even though bilingual initiatives increase workload, they "constitute an added value for the teacher, the students, and the institution". This is the only reference coded in R5's interview, representing a 1.62% Coverage.

Respondent 6's interview shows seven references coded (5.13% Coverage). R6 indicates that "after the CLIL training, and in some CUs, I'm already using some materials in English". R6 refers to using the ICLHE/CLIL approach "in some UCs, for example Digital Systems and Electrotechnics". R6 suggests that, to overcome students' difficulties with the language, "a greater connection between the content teacher and the language teacher" could be developed, claiming that "it would be very useful to have follow-up/feedback during the development of bilingual methodologies".

When asked about participation in this type of initiatives, R6 answers that "it was worth it" and changed the way to do things. R6 thinks that "the sharing of knowledge between areas" is an advantage of the ICLHE/CLIL approach. R6's "overall assessment of these initiatives is very positive, because sharing knowledge between different people from different areas of knowledge is positive".

Respondent 7 thinks that having feedback from colleagues while teaching in English is useful. R7 also thinks that the CLIL experience involving collaboration was worth it. A total of two references were coded in this sub-category (0.07% Coverage).

One reference to Interpersonal relationships and interaction between academics was coded in R8's interview with a 0.26% Coverage, who agrees that feedback from a colleague is important and "always useful".

5.2.2.2. Professional interaction

R1 referred twice to professional interactions (1.31% Coverage). R1 thinks that "the joint work of content and language teachers would probably have positive results" in overcoming students' difficulties. R1 also "participated in training courses and in a project in this area (INCOLLAB)".

 As to possessing appropriate training to teach in English, R2 engaged in the "CLIL training" but "never had the opportunity to apply" it. One reference was coded with 1.13% Coverage.

R3 also "attended a CLIL course". R3 "might consider joining another one" if other CLIL courses were planned, at "intermediate/advanced level". A total of two references were coded in R3's interview (0.98% Coverage).

Five references were coded in R4's interview, representing a 3.37% Coverage. R4 knows about bilingual studies results from colleagues and has "also collaborated in the development of empirical studies on bilingual education". R4 highlights regular engagement in "international events and congresses in which the English language is used as a means of communication", and also points to "research projects, with foreign teachers and students" where English is used as a form of communication. R4 further mentions participation in Erasmus mobility programs".

R4's opinion is that "every situation in which it is better to communicate in English is good to promote greater fluency and communication skills in English". This is announced by R4 as "greater personal and professional growth, as well as greater openness to embrace international challenges with other institutions, researchers and students from multiple origins and nationalities", thus highlighting several types of professional interaction.

In Respondent 5's interview two references were coded with a 1.86% Coverage. R5 claims to have "participated in training initiatives (CLIL) and Erasmus mobility" and that these experiences "were very enriching".

"Involvement in the INCOLLAB project" has led R6 to "read some studies on the benefits of bilingual education". R6 also took part in the CLIL training, but "was unable to complete the training due to lack of time". In R6's interview two references were coded representing a 1.59% Coverage.

Respondent 7 used the English language to teach in Erasmus mobility programs. R7 has also "taken several courses in English" and used the bilingual approach in the CLIL training course. This is the only reference coded in R7's interview (with 0.77% Coverage).

R8 was involved in the CLIL training and applied this approach in the Electronic Systems curricular unit. Regarding training and mobility initiatives, R8 engaged "in a CLIL Training course, I attended some English courses at the IPCB language centre, I usually do an ERASMUS mobility abroad per year, I engage in several conferences and international projects". These two coded references represent a 4.21% Coverage.

5.2.2.3. Informal support actions

R1, R4, R6 and R8 made references which were coded as informal support actions. Informal support actions are related with Communities of Practice and experiments with colleagues.

R1 (9,12% Coverage) was part of the INCOLLAB Erasmus+ project, which created a CoP in CLIL and EMI and can be considered as an experiment of working collaboratively with colleagues towards the same pedagogical end. R1 summarizes participation in the INCOLLAB international CoP, as follows:

> the experience I had with the implementation of bilingual education presented several very interesting aspects. On the one hand, the work of planning, preparing, and implementing the module was challenging because it involved teamwork between me (content teacher) and the language colleague. The fact that we are from

different scientific branches and have different objectives in terms of the contents to be taught led to disagreements about the direction to take in the planning and design of materials. Despite the challenges in terms of interpersonal relationships, the difficulties were overcome due to two essential aspects. On the one hand, the pre-existing personal relationship and on the other, the common objective of implementing the CLIL module, fulfilling the objectives of both teachers". When asked if the experience was worth it, R1 answered positively, saying that "it is a learning process, also for the teacher.

R1 considers feedback to be very important to improve teaching practices, "the participation of language and content teachers in the same classes" is positive. "That is, the language teacher attends the content classes, and the content teacher attends the technical English [ESP] classes". R1 specifically mentions "collaborative work in the design and preparation of didactic and teaching materials".

In Respondent 4's interview two references were coded with a 1.73% Coverage, one concerning similarities of teaching in Portuguese and in English in terms of the approach and content and the other on "modules prepared to be taught in the integrated content and language approach (CLIL), in which content and language knowledge is addressed when planning and designing materials", which R4 considers an exception to usual practice.

The CLIL experience in R4's opinion requires "a realistic look at the investment and its return (…) all the work carried out in these areas was clearly beneficial".

Two references related with informal support actions were coded (0.89% Coverage) in R6's answers to the semi-structured interview, who highlights the use of materials in English in class after the CLIL training. R6 highlights "the enthusiasm to develop new learning tools and learn new ways of teaching and learning" as part of the informal support received.

For R8 the informal support needed during the CLIL experience was "a new experience, new challenges, different ways of teaching, it's always positive". This is the only reference identified in R8's interview, representing a 1.12% Coverage.

5.2.3. Teacher language competence

Lecturers' perceptions on their linguistic competence are subsequently described, sub-divided into three sub-categories: EAP, ESP, language competence.

5.2.3.1. Language competence

R1 thinks own level of English to be acceptable, meaning "the minimum requirements" to teach in English. Two references were coded in R1 interview (0.50% Coverage).

In R2's interview three references were identified representing a 2.07% Coverage. R2 claims to have a satisfactory linguistic level to teach in English, the only concern being "to speak correctly" though not attentive to specific language functions, R2 considers that applying bilingual education "helped me to improve my knowledge of language".

R3's interview shows three coded references with a 2.21% Coverage. R3 claims to have an appropriate language level to teach in English: "(…), which should be at C1, seems adequate for teaching in English", although "during speaking, fluency in English is not always as intended". This is not seen as handicap: "training and my level of English are sufficient to teach in English".

With five references coded in language competence, R4's interview has a 4.19% Coverage. R4 focuses on students' needs, claiming to use "the foreign language that allows an effective communication with students, typically English" and believing to possess a "command of the English language [that] is suitable for the situations". R4 is confident about the support given to students in English. R4 also believes that the "pedagogical practice", that his/her "level of knowledge in English was never a reason for students not to be able to follow the teaching-learning activities carried out in a foreign language or in a bilingual way". R4 values translanguaging: "the fact that students present assignments or write in English at assessment times is no problem" for R4, who considers that "it works as well as when they use Portuguese to express themselves". R4 also adds "it is

equally natural to speak or express" myself "in English, whether in the context of the class" or "in any other context".

R5 is confident on own level of language to teach in English and also believes having "adequate training to teach in English". These two references were identified and coded with a 1.81% Coverage.

R6's interview returned three references (with 1.41% Coverage). R6 points to having adopted English to teach "in classes with Erasmus students" and as the instruction language for the class and is confident on own level to teach in English, while also claiming to have "adequate training" to teach in English.

Only one reference was coded in R7's interview (with 0.35% Coverage), who claims to have the acceptable level to teach classes in English.

With 0.48% Coverage one reference was identified in R8's answers, who believes own "English level to be B2".

5.2.3.2. EAP

EAP, aiming at supporting individuals who are studying in English-medium contexts, focuses on developing the language and skills needed to perform effectively in academic contexts, including writing essays, understanding lectures, and engaging in discussions.

R3 emphasises that "almost all the current bibliography is in English, which facilitates comprehension", but does not "focus on specific syntactic structures, nor (…) having this concern". R3's concern is "a lot on the form and accuracy of words, even in English". These three references, have a 2.03% Coverage.

One reference to EAP was found in R4's answers, representing a 0.90% Coverage. R4 argues that "in addition to the content, the form becomes particularly relevant, not only for more effective communication, but also for the promotion of learning and understanding of the English language by learners", thus highlighting the importance of the correct use of academic language.

R6, with one reference coded (0.44% Coverage), pays attention to linguistic aspects and if "the syntactic structures are correct".

5.2.3.3. ESP

In R1's interview one reference was coded representing a 3.47% Coverage. R1 emphasises that "one of the most relevant aspects of teaching in English has to do with the specific terminology" of the content area, since the Curricular Units taught "are very technical and terminology is particularly important because similar terms in Portuguese and English represent different ideas", and may even cause confusion: "there are terms in English whose representation in Portuguese involves the sum of several terms and vice versa".

R3's answers to the interview returned three coded ESP references (with 2.44% Coverage). For R3 English is the professional "language of senior technicians". However, even though there is "specific terminology" in the content area that "often must be taught in Portuguese because it derives mainly from the French language". R3 claims that often in class "accurate and precise vocabulary fails" while teaching and thus deserves particular attention.

Three references were coded in R6's interview with a 2.49% Coverage. R6 specifies that when teaching in English, there must be "focus on the specific terminology issues", which R6 complements by saying that in classes where neither "foreign language nor CLIL", "technical terms in English" are used because of technical requirements.

When teaching in English Respondent 7 pays "attention to specific terminology". This is the single reference to ESP coded in R7's interview.

In R8's answers to the semi-structured questionnaire three references were coded representing a 4.82% Coverage. While admitting not to be proficient in English, R8 considers that technical subjects, require to be taught in English because "the concepts are universal". R8 uses the correct "technical terminology" when teaching, although there may be problems "in formulating sentences or using the correct syntax". Since "technical documents are usually in English", R8 argues that "students, whether they like it or not, when they analyse a technical sheet of an electronic component, must do it in English" even if the instruction language is not English.

5.2.4. CLIL/Bilingual Education

Lecturers' perceptions about CLIL/Bilingual Education, the fourth and last category, are subsequently presented, sub-divided into five sub-categories: training needs, implementation of bilingual education, assessing language competence of students, and conditions for CLIL/Bilingual Education.

5.2.4.1. Training needs

CLIL/Bilingual Education training needs in the interview protocol are related with teachers or with students. Respondents recognize their own training needs or students' training needs when they implemented CLIL or bilingual education modules or when they experimented with EMI.

Ten references were coded in R1's interview, from which nine are related to own training needs and one to students' training needs. They represent a 7.60% Coverage. R1 is either not able to describe the characteristics of the bilingual approach used nor to clarify false myths related with bilingual education. R1 has read about bilingual education but is unable to indicate any empirical studies' results from memory. According to R1, the greatest difficulty "has to do with not using English on a daily basis", since R1 is "confident that in a short period of time, teaching in English or Portuguese will be approximately the same". R1 reflects on the need for "pedagogical training to teach in English" claiming that is willing "invest time in improving my performance in this area".

In R1's opinion the difficulties students present, especially those "afraid of engaging" in the foreign language in class, "would have to be overcome by an increase in the number of hours learning English, if possible before higher education, or in curricular units of English for Specific Purposes".

Respondent 2's interview returned three references coded in training needs with a 3.53% Coverage. When teaching in English R2 declares not being aware of the type of bilingualism used, neither knowing its characteristics or about empirical studies' results. R2 does not know any false myths related to bilingual education either. R2 attended a CLIL training but mentions having "no other specific training

to teach in English". However, "knowledge and command of the English language are the essential aspects" R2 would like to improve, which shows an emphasis on language rather than pedagogical training.

In R3's answers to the protocol interview seven references were coded, all related to own training needs, with a 7.21% Coverage. R3 is not clearly aware of "the theoretical foundations of bilingual education" used, cannot describe "the characteristics of the bilingual approach" either and is "not aware of the results of empirical studies on bilingual education".

However, R3 thinks that "at a time when the number of international students, Spanish and English speakers, in mobility (semester or year) is increasing, it would be very useful to have more information about bilingual and even trilingual approaches". Since R3 believes to have "knowledge and (…) level of English (…) adequate to teach in English", training should befall "on the English language, but on new digital technologies and platforms available on the Internet" or how to "take even greater advantage of the Moodle platform" and other digital resources. However, R3 would also appreciate specific training in ICLHE/CLIL at the "intermediate/advanced" level.

R4's interview shows four references coded with a 5.32% Coverage, one related to students' training needs and three to own training needs. R4 states that "as in other areas of knowledge, the opportunity to access more and better information about bilingual education is always an opportunity". Showing willingness to learn and improve, R4 expresses that "every situation when it is better to communicate in English is useful to promote greater fluency and communication skills in English" and so training has this dual role: improving language and learning additional pedagogical information. However, R4 puts the emphasis on language use, but cares about additional training in "formal and grammatical aspects of the language.

Regarding students, R4 thinks that they

> can be helped to overcome potential linguistic problems that they
> normally face in different communication situations when speaking in
> a foreign language (at school and/or in a professional context) by
> improving their perception of the linguistic skills they actually have.

This happens, in R4's view, because students "rarely accept their skills in different contexts from that of leisure". R4 also believes that "this can be achieved through their involvement in entertaining and informal learning situations in which, at the end, they will apply their real level of English in learning and professional contexts in higher education", again giving emphasis to language use.

Four references were identified in Respondent 5's answers (6.35% Coverage). Three of these references are related to the teacher's training needs and one to students' training needs. R5 shows little knowledge about the bilingual approach because not often used. R5 feels the need to practice English because of lack of some vocabulary when teaching.

Some of R5's students struggle with the English language. In R5's point of view, "it would be interesting to be able to overcome this situation by organizing some English training for students".

In R6's interview six references were coded showing a 4.12% Coverage. Five references are related to own training needs and one to students' training needs. R6 thinks that s/he "sometimes lacks generic vocabulary" and fluency. The training to solve these gaps would be, in R6's view, to "take classes to practice and learn more vocabulary" "to engage in another CLIL training and have some classes like "English for Teachers" based on essentially speaking skills. Another area covered by R6 is the digital pedagogical competence of international students at IPCB, who require further training in this area. By implication, pedagogical training for teachers should interlink language and digital technologies.

Thirteen references were coded in R7's answers to the questionnaire, three related with students' training needs and ten with own training needs. R7 usually teaches in Portuguese, but sometimes in English to Erasmus students enrolled in classes. R7 considers it would be interesting to learn more about the characteristics of the bilingual approach, results of empirical studies on bilingual education and about false myths concerning bilingual education as part of continuous improvement. R7 claims not to have adequate training to teach in English and therefore, would like to "learn how to teach more efficiently". Consequently, R7 believes that all training courses "are useful, but the most

useful (…) would be those in which techniques for teaching more effectively are taught".

R7 thinks that "Students from the African Countries with Portuguese as Official Language (PALOP - *Países Africanos de Língua Oficial Portuguesa*) have as much difficulty understanding Portuguese as English, so they should have additional classes when they arrive in Portugal". R7 also believes it is "very important to teach students in English so they can be prepared to work everywhere in the world and be able to understand subject bibliography".

Respondent 8's interview returned seven references coded with 7.46% Coverage, all related to own training needs. As the previous respondents, R8 doesn't know much about bilingual education. R8 reflects on group of teachers who may "refuse to teach in a foreign language, essentially because they struggle with English", thus linking language competence to willingness to embrace a bilingual programme.

R8 would like to engage in new training courses to meet the needs of new student audiences and to learn about new teaching methodologies. The training would enable R8 to improve on vocabulary and speaking.

5.2.4.2. Implementation of bilingual education

In the specific context under study, implementation of bilingual education is related with the adaptation of class management, adaptation of content, adaptation of language, adjustments to current practice, adaptation of materials, and distribution of work between content and language teacher in bilingual or ICLHE/CLIL settings.

Respondent 1's interview returned ten coded references with 14.67% Coverage. When teaching in English, R1 uses codeswitching to Portuguese "to answer students' doubts and explain terms and concepts in which students have difficulties", specifying the percentage to be "ten per cent" of instruction language. In R1's view additionally says that "the collaborative work of content and language teachers would probably have positive results" on students' English skills.

R1 focusses the teaching activity in bilingual education "on exposing concepts in a short and simple way" and normally "asks students to test" the teaching efficacy through practical exercises. At first, as "the idea is to make them reflect on the exposed concepts", R1 asks students to work on their own. Then, students are usually asked to collaborate "in solving practical cases/exercises so that any difficulties are shared, and doubts explained". R1 usually only interferes "whenever necessary to clarify/solve several types of problems that may cause some type of difficulties, either in terms of content or in terms of interaction between group members and/or between groups".

R1 sees little difference in teaching in Portuguese and English and uses the same resources but admits that the fact the students struggle with English "causes the content to be taught more slowly". Additionally, R1 is aware that resources and materials require student feedback to improve teaching. R1 believes that difficulties arising from bilingual approaches should be solved with the collaboration between content and language teachers, either through class observation and participation or through "collaborative work in the planning and design of didactic and teaching materials".

R1's opinion on the bilingual approach used on a regular basis is that it increases the teacher workload, especially when it comes to the "Initial preparation for and implementation of ICLHE/CLIL classes".

Three implementation of bilingual education references were coded in R2 answers (2.34% Coverage). R2 highlights the importance of "linguistic aspects as they allow for clear communication", believing that engaging in this type of ICLHE/CLIL approaches increases teacher workload and requires lesson preparation time that is scarce.

In Respondent 3's interview protocol twelve references were coded representing 15.35% Coverage. R3 seconds the myths of bilingual education according to which a "smaller number of content/ topics can be addressed in a bilingual class". Teaching in English creates difficulties in expression and the need to find alternative ways to say the same thing. R3 also believes in practise: "the more" the teacher practices "speaking English, the more limitations are reduced".

R3 implements the bilingual approach when there are non-class, basically making materials and resources available in the Moodle platform in both Portuguese and English. When teaching in English, R3 admits switching to Portuguese when "Portuguese students aren't understanding correctly what is meant". R3 refers to "the exponential increase of international PALOP students, mainly from Guinea-Bissau" and contends that, as a consequence, teaching in English becomes very constrained as these students have little or no knowledge of English, having to "often organise separate tutorial classes to non-Portuguese speaking students".

As an ideal situation, R3 suggests that "it would be best to have classes in English separated from classes for students who do not understand English". As a strategy to help students, R3 "organizes a group with some students who read a basic book in English with the help of students with a B2 level in English, who provide simultaneous translations" when there is time.

R3 usually promotes

> oral presentations using PowerPoint and activities that involve memorizing, understanding, analysing, and applying, using resources available on different platforms of the official agriculture services. In these activities, learning is based on tasks that students will eventually carry out in their professional lives.

R3 claims to teach in very similar ways in English and in Portuguese, although more videos are used in English. In Portuguese resources are made available for non-Portuguese speaking students. Despite there being much more content available in English than in Portuguese, not many differences are introduced in the resources.

A 20.03% Coverage represents R4's interview, with sixteen references coded that highlight an awareness that the ICLHE/CLIL approach represents "an alternative to teaching through a foreign language". R4 claims to have several empirical studies in the area, besides having collaborated in the writing of some case studies on the pedagogical practice itself. R4 teaches in English in class because of Erasmus students in class, but if the number of the latter is low or Portuguese language students show difficulties in grasping content, or content is

complex, R4 invites "foreign language students to regular weekly tutoring sessions exclusively in the foreign language", which is English.

R4 emphasizes that "as a way to promote students' participation and so that the language does not become an obstacle, codeswitching or simultaneous translation is welcome in class, as used by R4 and to reinforce what students say. Implementation by R4 is theoretical and case study based, task-based, project-based and collaborative between students and teacher and students.

R4 believes autonomous work to be very important in the "current paradigm of Higher Education" and encourages students' autonomous learning, guided by the teacher as a facilitator on the side. These practices are similarly used in classes taught in English and in Portuguese, claiming that "Modules prepared to be taught in the integrated content and language modality (CLIL), in which knowledge of these two dimensions of language and content are approached" are an exception.

R4 uses flexible student-centred implementation alternatives between whole class and tutorial sessions, using resources in both languages available online, such as slides, as well as involving all students in exploring English content online.

Regarding assessment, R4 describes own procedure as follows:

> at the end of the semester, a second individual or group assessment takes place. These reports and presentations may be presented in English. Finally, there is an individual written test, which will be in Portuguese or in English, depending on the student's choice.

R4 claims to be happy with the subject's assessment when teaching in English arguing that "the fact that students present or write assignments in English is no problem" as R4 believes "it works as well as in Portuguese".

R4 agrees that with a bilingual approach, workload increases and that time is a constraint on developing it:

> the main difficulty is the effective available time for its implementation. That is, even though the benefits and advantages of these initiatives are clear, the real-world context of Higher

Education teachers' activities leaves little available time beyond that necessary for carrying out and fulfilling organizational and bureaucratic issues.

In R5's interview three references were coded with a 4.16% Coverage. For R5 there are no differences in teaching that depend on the instruction language: R5 uses "lectures, task-based learning, oral presentations and [project] work with all students", R5's main comment is that "the bilingual approach slightly increases the workload of the teacher".

Respondent 6's interview returned eleven references to bilingual education coded, representing 12.03% Coverage. R6 uses the CLIL approach in some curricular units, using English fifty per cent of the time in CLIL modules. Work in class is bilingual and depends on student ability in both languages. R6 also feels the need to reinforce some concepts in the language not used for class instruction, especially when student linguistic level is low.

R6 sometimes feels the need to use materials and resources in Portuguese in bilingual contexts for fear of loss of domain and refers to "lack of time to prepare them". As to assessments R6 establishes a difference between "international students, usually ERASMUS" who are assessed in English and assessment of CLIL introductory modules, which are not.

R6 thinks that bilingual education increases workload "because it means stepping out of the comfort zone in two aspects: language and teaching methodologies". R6's greatest difficulties are connected to articulation of bilingual pedagogy with the usual procedures used to teach, as well as collaboration with language teacher so that the latter can teach content autonomously in ESP classes. R6 also reinforces a separation between learning objectives for content and language in the following terms: "teach students to think in logical and mathematical terms" and "language features".

A 5.10% Coverage with six coded references was identified in R7's semi-structured questionnaire, which describe specific translanguaging situations in class, depending on the ability of students in Portuguese or English.

R7 highlights that "subject materials and resources are presented in Portuguese", although students may be required to do internet searches for content in English and Portuguese. R7 claims engaging in bilingual education increases workload and identifies as main problem the linguistic needs of students.

Respondent 8's interview returned seven coded references (13.24% Coverage) establish a difference between teaching in two languages when there are Erasmus students and adhering to CLIL principles. However, in contradiction to the above, R8 also claims that content is universal and language just a means to communicate it effectively. Materials may be made available in Portuguese and English, some resources may be available only in English, but assessment is in the official school language: Portuguese.

5.2.4.3. Methodologies for CLIL/ Bilingual Education

Methodologies for CLIL/bilingual education are related with guidelines, procedures and assessment while implementing a CLIL approach.

Respondent 1's interview returned three coded references in this sub-category representing a 7,13% Coverage. R1 argues that "the number of stimuli to which students are subject outside the classroom increases their difficulty in concentrating on specific and complex tasks". This is evident in the use of computers in class, on which students play games rather than learn. Students' lower ability to concentrate causes some problems in class, being "particularly evident in activities involving long texts and/or many variables". As a way to overcome this obstacle, R1 thinks that "the use of new (and innovative) methodologies will most likely have effects in terms of motivation and concentration" and thus believes that ICLHE/CLIL may yield positive results.

One reference was coded in R2's answers to the interview with 1,14% Coverage, who makes no distinction between methodologies or materials in situations that require class instruction in English and in Portuguese.

In R3's interview three references were identified and coded (3,06% Coverage). R3 endorses the ICLHE/CLIL approach and suggests its greater alignment with novel modalities of online learning.

In R4's interview four references were coded, representing 6,04% Coverage. R4 establishes the difference between teaching using a foreign language and using the CLIL approach, in the following terms:

> in the case of implementing teaching through a foreign language, the main objective is to communicate the knowledge associated with a specific area of knowledge. On the other hand, the integration of content and language as an alternative to teaching through a foreign language provides the integrated teaching and learning of a content and a foreign language.

Thus, R4 pays attention to language when teaching in English and select resources according to "each class, group of students and learning context".

In the face-to-face, online and blended types of classes taught by R4, online resources are made available to students on Moodle, which R4 considers especially supportive when teaching in English.

One reference was coded in R6's interview with 1,81% Coverage. R6 shows concern whether students really understand the importance of English for their future professional lives as a reason why "examples of leaflets with technical information (Datasheets)" are shown students, even though they may not be learning English.

In Respondent 7's answers one reference was identified and coded (1,03% Coverage) that is linked to the use of bilingual resources when teaching through English.

Respondent 8's interview returned one reference, representing 1,70% Coverage, which values the use of bilingual digital resources in teaching.

5.3. Coding by respondent

This section shows coding charts by respondent, highlighting the categories their references fall into.

Figure 39 illustrates that Respondent 1's answers are mainly coded in the CLIL/ Bilingual Education category, followed by Autonomy, Collegiality and

Collaboration and finally Teacher Language Competence. 36% of R1 references were coded as CLIL/ Bilingual Education. Within these 14% are related with implementation of bilingual education, 8% are associated with training needs, 6% with methodologies for CLIL, 4% with conditions for CLIL and 4% with assessing language competence of students. Almost 16% of references are connected to teacher's perceptions of autonomy, 10% being related with content and teaching materials and 6% with methodologies. Approximately 15% of references are connected to teacher's experiences on collegiality and collaboration, 8% being concerned with informal support actions, 5% with interpersonal relationships and interaction between academics and 2% with informal support actions. Ultimately, 5% of references are associated with teacher language competence, 4% of these relating to ESP and 1% with lecturer's linguistic competence.

Figure 39

Respondent 1 coding
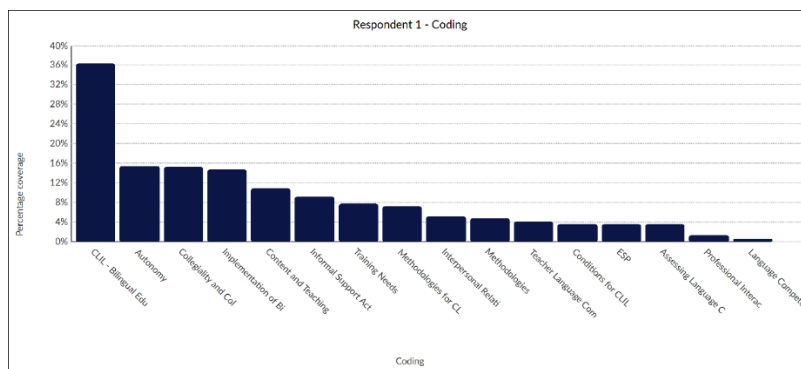
Source: Own elaboration (extracted from NVivo software)

Figure 40 shows that Respondent 2's interview is mainly coded in the CLIL/ Bilingual Education category, followed by Autonomy, Teacher Language Competence and finally Collegiality and Collaboration. 14% of R2 references were inscribed as CLIL/ Bilingual Education. 5% of them are related with conditions for CLIL, 3% with training needs, 2% with implementation of bilingual education, 2% with assessing language competence of students and 2% with methodologies for CLIL. 8% of references are connected to teacher's insights of autonomy, being the 8% related to methodologies. Nearly 2% of references are connected to teacher's linguistic competence. Finally, 1% of references are

associated with collegiality and collaboration. The entire percentage is reported to professional interaction.

Figure 40

Respondent 2 coding
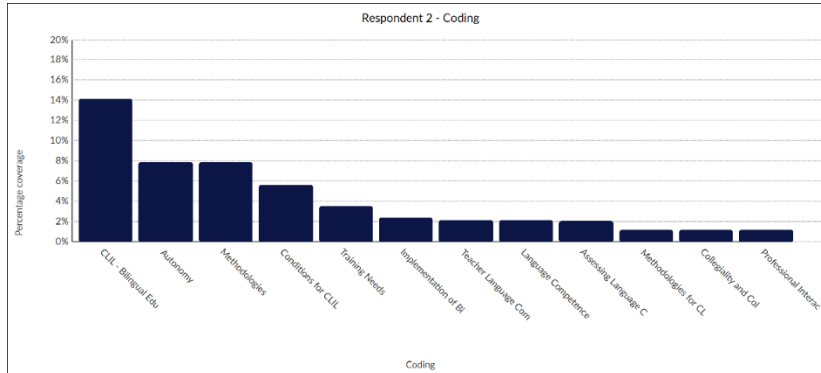
Source: Own elaboration (extracted from NVivo software)

Figure 41 shows that Respondent 3's questionnaire is predominantly coded in the CLIL/ Bilingual Education category, followed by Autonomy, Teacher Language Competence and ultimately Collegiality and Collaboration. Nearly 45% of R3 references were coded as CLIL/ Bilingual Education. Within these 15% are related with implementation of bilingual education, 14% are linked to assessing language competence of students, 7% with conditions for CLIL, 6% with training needs, and 3% with methodologies for CLIL. Approximately 8% of references are assigned to teacher's experiences of autonomy, 6% being concerned with methodologies and 2% with content and teaching materials. Around 7% of references are connected to the lecturer's linguistic competence, 3% concerning ESP, 2% own language competence and 2% EAP. Lastly, 3% of references are correlated with teacher's views on collegiality and collaboration, 2% of which relate to interpersonal relationships and 1% to professional interaction.

Figure 41

Respondent 3 coding

Source: Own elaboration (extracted from NVivo software)

Figure 42 shows that Respondent 4's answers to the interview are mostly coded in the CLIL/ Bilingual Education category, followed by Autonomy, Collegiality and Collaboration and lastly Teacher Language Competence. Almost 40% of R4's references were coded as CLIL/ Bilingual Education. Within these, 14% are related with implementation of bilingual education, 20% are associated with implementation of bilingual education, 7% with conditions for CLIL, 6% with methodologies for CLIL, 5% with training needs and 2% with assessing language competence of students. Approximately 18% of references are connected to the lecturer's opinions on autonomy, 12% being related with methodologies and 6% with content and teaching materials. Around 10% of references are connected to the teacher's experiences on collegiality and collaboration, 6% being concerned with interpersonal relationships and interaction between academics, 3% with professional interaction and 1% with informal support actions. Finally, 6% of references are associated with teacher language competence, 5% of these relating to teacher's language competence and 1% with EAP.
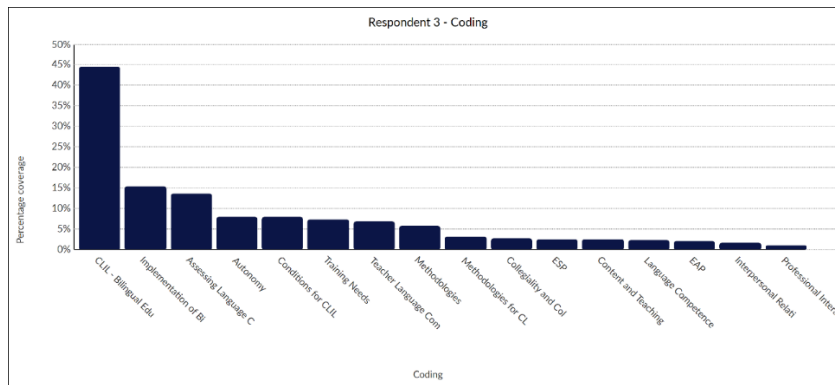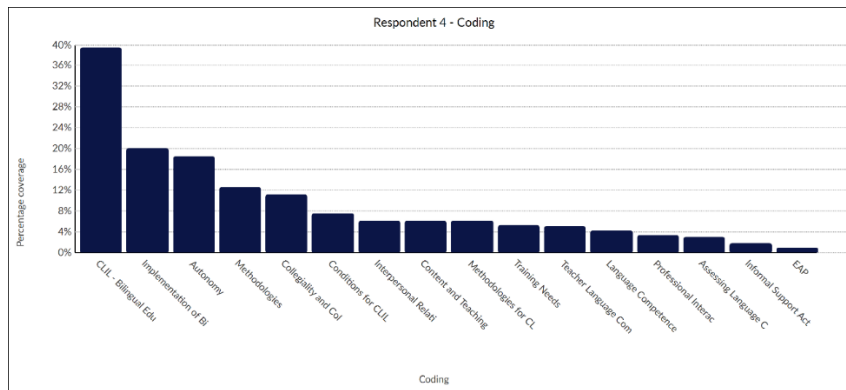
Figure 42

Respondent 4 coding

Source: Own elaboration (extracted from NVivo software)

Figure 43 shows that Respondent 5's answers to the interview are mainly coded in the CLIL/ Bilingual Education category, followed by Autonomy, Collegiality and Collaboration and finally Teacher Language Competence. Around 22% of R5 references were coded as CLIL/ Bilingual Education. Within these 7% are related with conditions for CLIL, 6% with assessing language competence of students, 5% with training needs and 4% with implementation of bilingual education. Nearly 6% of references are connected to the instructor's beliefs on autonomy, 4% being related with methodologies and 2% with content and teaching materials. Over 4% of references are connected to the teacher's attitudes towards collegiality and collaboration, 2% being concerned with professional interaction and 1% with interpersonal relationship and interaction between academics. Finally, 2% of references are associated with teacher language competence, the whole percentage being related to the lecturer's linguistic competence.

Figure 43

Respondent 5 coding

Source: Own elaboration (extracted from NVivo software)

Figure 44 shows that Respondent 6's interview is predominantly coded in the CLIL/ Bilingual Education category, followed by Autonomy, Collegiality and Collaboration and finally Teacher Language Competence. Over 27% of R6's references were coded as CLIL/ Bilingual Education. Within these 12% are associated with implementation of bilingual education, 6% with assessing conditions for CLIL, 4% with assessing language competence of students, 3% with training needs and 4% with methodologies for CLIL. Approximately 10% of references are linked with the teacher's views on autonomy, 6% being related with methodologies and 4% with content and teaching materials. Around 7% of the references are connected to collegiality and collaboration, 4% being related with interpersonal relationships and interaction between academics, 2% with professional interaction and 1% with informal support actions. Lastly, 5% of references are associated with the lecturer's language competence. From these 3% relate to ESP, 2% to language competence and 1% to EAP.
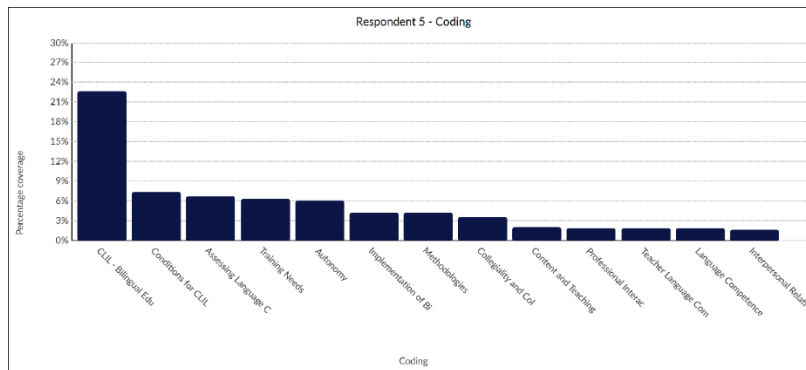
Figure 44

Respondent 6 coding

Source: Own elaboration (extracted from NVivo software)

Figure 45 shows that Respondent 7's answers to the interview are mostly coded in CLIL/ Bilingual Education category, followed by Autonomy, Teacher Language Competence and finally Collegiality and Collaboration. Around 20% of R7 references were coded as CLIL/ Bilingual Education. From these 7% are correlated with training needs, 5% with assessing conditions for CLIL, 4% with implementation of bilingual education, 3% with education assessing language competence of students and 1% with methodologies for CLIL. Nearly 6% of references are linked with the educator's point of view on autonomy, 4% being related with methodologies and 2% with content and teaching materials. Over 2% of the references are linked with the lecturer's language competence, 1% being related with ESP and 1% with linguistic competence. Finally, 2% of references are concerned with collegiality and collaboration. From these 1.5% relate to professional interaction and 0.5% to interpersonal relationships and interaction between academics.
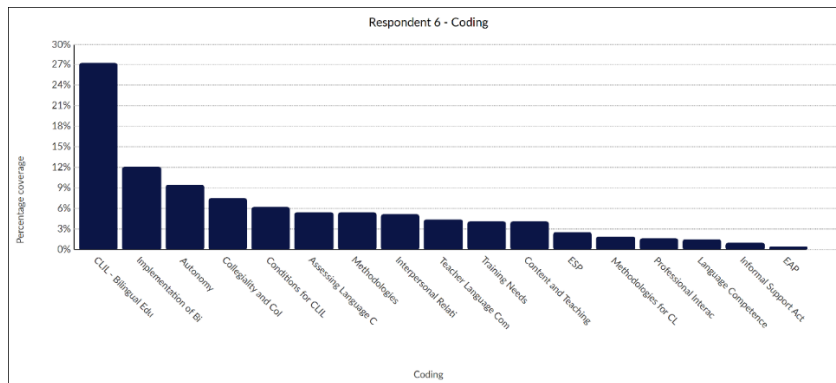
Figure 45

Respondent 7 coding
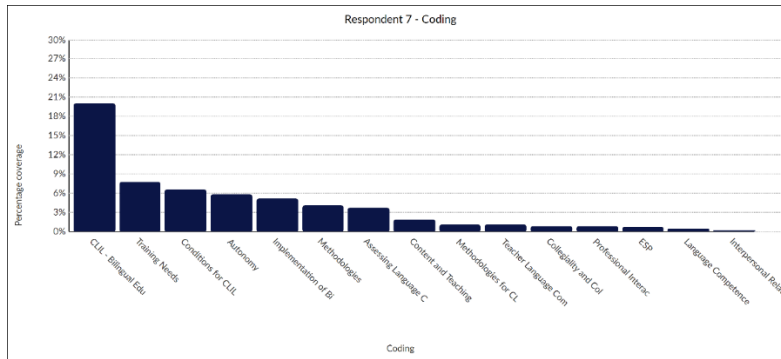
Source: Own elaboration (extracted from NVivo software)

Figure 46 shows that Respondent 8's questionnaire answers are mainly coded in the CLIL/ Bilingual Education category, followed by Autonomy, Collegiality and Collaboration and lastly Teacher Language Competence. Over 34% of R8 references were coded as CLIL/ Bilingual Education. From these 13% are interconnected with implementation of bilingual education, 8% with training needs, 7% with assessing language competence of students, 4% with conditions for CLIL and 2% with methodologies for CLIL. Approximately 10% of references are linked with the teacher's beliefs on autonomy, 8% being related with methodologies and 2% with content and teaching materials. Around 6% of the references relate to collegiality and collaboration. From these 4% correlate to professional interaction, 1.5% to informal support actions and 0.5% to interpersonal relationships and interaction between academics.

Figure 46

Respondent 8 coding
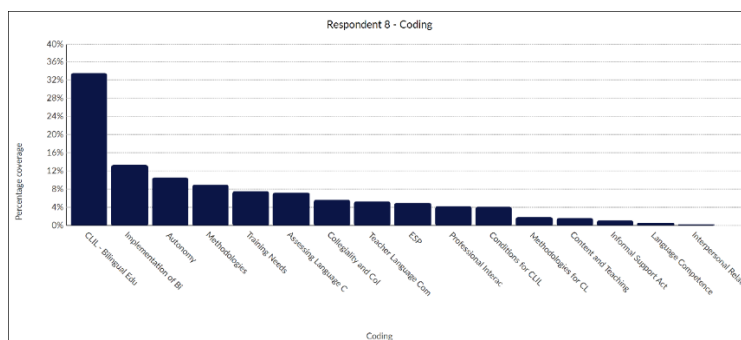
Source: Own elaboration (extracted from NVivo software)

The analysis of the respondents' coding shows that their answers were mainly coded in the CLIL/Bilingual Education category, which is not surprising since they all have been involved in ICLHE training and the practical application of it in their classes through collaboratively designed modules. The categories which follow vary according to each respondent: Autonomy, Collegiality and Collaboration, Implementation of Bilingual Education, Methodologies, Conditions for CLIL or Training Needs. This variation may be explained by each respondents' individual teaching practices.

Chapter 6
Discussion

The objective of this section is to examine lecturers' perceptions of the study variables (teacher autonomy, collegiality, collaboration and language competence) and explore the insights gained from respondents' answers, discuss them in light of the findings of both quantitative and qualitative data, and recommend how to enhance CLIL implementation at IPCB. Overall, quantitative results show that Teacher Autonomy and Teacher Collegiality may influence Teacher Collaboration. However, language competence appears not to influence collaboration among instructors. Qualitative results corroborate the quantitative results and show how autonomy and collegiality may influence collaboration. However, it also shows that teachers' lack of linguistic competence may influence their decision of engaging in collaborative approaches in which English is used. Students' difficulties in accompanying classes taught in English may also influence lecturers' decision to participate in bilingual approaches.

Four of the five hypothesis were confirmed by quantitative results, meaning that: there is a positive direct relationship between Teacher Autonomy and Teacher Collegiality; there is a positive direct relationship between Teacher Autonomy and Teacher Collaboration; there is also a positive direct relationship between Teacher Collegiality and Teacher Collaboration; and there is a relationship between Teacher Autonomy and Teacher Collaboration, mediated by Teacher Collegiality. Contrariwise, there is not a positive relationship between Language Competence and Teacher Collaboration.

The discussion will be centred around the qualitative categories. The decision to centre it around the qualitative codebook categories was taken for several reasons. The qualitative data could provide insights that were not so apparent in the quantitative data. By focusing on the categories obtained from the semi-structured interviews, the discussion could delve into the details of the participants' experiences and perspectives. Finally, while the quantitative model

offered structural insights, the qualitative analysis revealed emergent categories that were not initially anticipated.

6.1. Teacher autonomy

The quantitative analysis shows that IPCB lecturers (194 respondents) indicated that they used autonomy in several ways such as to formulate their own guidelines and procedures, to modify content, to adapt their own skills for more effective teaching, to determine teaching objectives and goals of their courses, to select teaching materials, to manage students' learning progress and monitor tasks, to make decisions on instruction, to solve major classroom issues, to manage classroom space, to supervise evaluation and assessment activities, to adapt teaching methods and strategies, and to manage time in the classroom. Conversely, they realize that they have limited freedom to decide what to teach as they need to teach specific contents to students.

This limited freedom to decide what to teach can justify the strength of the relationship between TA and TC (H1), and between TA and COL (H2). H1 argues that that there is a positive relationship between teacher autonomy and teacher collegiality and H2 argues that there is a positive relationship between teacher autonomy and teacher collaboration. Thus, teachers' limited freedom to decide what to teach can reduce their interest and willingness to get involve in collegiality and collaborative approaches for ICLHE.

QUANT results, using the Mann-Whitney U and Kruskal-Wallis H tests, also showed that teacher autonomy perceptions do not vary according to the respondent gender (male/ female) or affiliating school.

When analysing QUAL data, one of the themes that can be read from data is the use of teacher autonomy for innovation and experimentation. Teachers refer using their autonomy to experiment with new teaching strategies and situations ("The teaching methodologies I use are varied and some of them are innovative" (R3); "I think I will have enough autonomy to use English for teaching purposes" (R5)), which is an interesting angle from which to approach ICLHE/CLIL implementation as a new and innovative pedagogical approach that will benefit

student learning. However, IPCB teachers' autonomy seems also to be constrained by the curricular organization model, which is subdivided into lectures, practical (seminars) and lab classes. The lecture-style instruction is mentioned by R2, R7 and R8 as a current institutionally-approved practice, while student-centred learning is more limited to seminar and lab classes. Nonetheless, R4 mentions that lecturing can include interaction with students and accommodate their needs in a constructive framework, thus opening up space in lectures for one of the most important features of the CLIL approach, which is time for teacher-student and student-student interaction to use the foreign language in context meaningfully. This aligns with Coyle's 4Cs Framework (2007), particularly, with the principle that encapsulates communication and interaction as indispensable components within educational settings. As emphasised by Mohan (1997), teachers should provide students with opportunities to explore their environment and the language they use, thus providing them with the opportunity to interact with these resources and incorporate them into their cognitive skills.

In the quantitative questionnaire, innovation is reflected in the collegiality scale rather than in the autonomy scale. This is evident in questions 31 and 42, which pertain to collaborating with others to experiment with new teaching ideas and methods, as well as providing demonstrations on how to use new models or strategies. Both questions present means below the neutral value 4, 3.34 and 3.12 respectively. QUAN data show that, in general, IPCB teachers, contrarily to the ones interviewed, may not be very used to using their autonomy to implement new and innovative teaching approaches.

These findings suggest that innovative approaches to teaching and learning such as ICLHE/CLIL require structured input and dedicated training. To adhere to ICLHE/CLIL, IPCB teachers may require upskilling in new pedagogical methodologies for higher education, including ICLHE/CLIL or EMI. These results align with previous research, which suggests that there is a significant demand for training in the methodological aspects and theoretical foundations of CLIL/EMI (Ball & Lindsay, 2013; O'Dowd, 2018; Pérez Cañado, 2016a, 2020a; San Isidro, 2018) as many HE teachers may be unaware of the trend or feel unprepared to

recognise what bilingual education or teaching through English may entail from a pedagogical point of view.

The analysis of the teachers' interview responses reveals that assessment is another theme that emerges as significant. Otto (2017) highlights the prevalence of traditional assessment methods which may not align with CLIL objectives, emphasizing the impact language proficiency can have on students' content learning. The author also argues that specific guidelines on CLIL assessment to better balance language and content objectives should be promoted.

Lecturers say they have autonomy to change and adapt assessment activities and instruments. For example, R1 states that "The instruments used vary from CU to CU. In more theoretical CUs, I use diverse assessment types with worksheets, individual/group work, tests. In practical CUs, I give more emphasis to tests and less to individual/group work"; R2 refers that "Usually, the assessment is done using written tests (tests and exams) or practical tasks or, even, discussing specific topics raised by some questions put forward by students"; and R6 mentions that "last year I thought about doing some Kahoot-based mini-tests", which can be considered an innovative teaching assessment for the context given that it is digitally-based and online.

QUAN data corroborate QUAL data which shows that overall IPCB lecturers claim to have autonomy to select and adapt evaluation and assessment activities used in class (question 17). The mean of this question is 6.10, indicating a value significantly higher than the neutral value of 4.

These findings may indicate that as IPCB teachers have autonomy to adapt assessment according to the context, no major resistance is to be expected of change to assessment frameworks. However, data also show that the main problem with assessment in ICLHE/CLIL does not lie in the official framework in HE, but in the resistance of content teachers to assess language (and of language teachers to assess content): "unfortunately, I must give much more importance to content because most of the time the written evaluations have so many grammatical and spelling errors that make it very difficult to understand what I must assess" (R3).

This lecturer's concern could be answered with innovative approaches, such as the comparative judgement method (Morton, 2022). This practice involves assessing students' work by comparing pairs of assignments and determining which of the two demonstrates a higher level of quality or mastery of the content.

Morton's (2022) describes an investigation conducted within the framework of a seminar structured to enhance teachers' understanding of content and language integration, focusing on assessment, in a bilingual education program located in Madrid, Spain. The results indicate that the participants prioritized the quality of content over quantity. Teachers also gave more importance to language structure than to its functional aspects. Establishing a full understanding of integrated assessment for content and language within CLIL contexts is essential.

In a different research study, Morton and Nashaat-Sobhy (2023) investigated the underlying factors of success that teachers refer to when evaluating students' assignments within the framework of a bilingual education program. Findings indicate how teachers position students in relation to both epistemological and social factors during their assessment procedures could potentially impact the fair treatment of learners in bilingual programs.

Morton's (2022) method of comparative judgement could be an approach that IPCB teachers might use to feel more comfortable when assessing students in ICLHE/CLIL, or EMI settings.

Teachers' concerns regarding assessing students using the CLIL approach suggest a need for additional training in assessment techniques. Furthermore, there is room to explore new approaches for conducting assessment.

Lecturers' answers to the interview indicate they use their autonomy to implement student-centred teaching and learning methodologies. Data may be interpreted to show that teachers are dedicated to enhancing their teaching methods, improving communication with students, and prioritizing student learning. This is supported by statements such as "depending on the specific situation, I try to apply the methodology that ensures the greatest possible efficiency in communicating with students" (R4) and "students learn by doing, there is a lot of experimentation, a lot of failure and only like that they can learn what they will find in the job market" (R8).

Questions that may indicate a similar concern for using teaching methods to enhance student-centred learning in the quantitative questionnaire are not part of the autonomy scale but of the collaboration scale. Question 57 addresses improvement of instructional practice and improvement of student learning, question 58 explores specific instructional practices that will be initiated or maintained to increase student learning, question 60 focuses on obtaining information about instructional practice and students' learning needs, and question 65 approaches the use of instructional practices that will increase students' learning. Questions 72, 73 and 74 are related with collecting data (quantitative and qualitative) to assess students' learning and evaluate the merit and effectiveness of teachers' practices.

In Question 60, a mean of 3.70 is presented, which happens to be the lowest among all the items. Question 58 follows with a mean of 3.87, which is also below the neutral value of 4. On the other hand, the highest mean is observed in Question 65, which states that "Each individual teacher employs specific instructional strategies that will increase student learning". The results suggest that teachers may not be used to making collaborative decisions when it comes to improvement or consideration of issues that impact students' learning or assessment. Alternatively, they could also indicate that lecturers possess a significant degree of independence and prioritize the individual learning needs of their students as they show they are concerned with their students' difficulties and are willing to change and adapt to them. This perspective is somehow supported by the respondents who participated in the interview and implemented ICLHE at IPCB when they claim that solutions are centred on the real need of students and that they use adequate strategies to each specific situation (R4).

ICLHE/CLIL is an innovative approach centred on students' learning rather than on the teacher's role. ICLHE/ CLIL's emphasis on collaboration, be it in small groups or through CoPs, although mentioned as a viable solution by the interviewed teachers who experienced it, may not come up as a viable solution for most lecturers at IPCB unless it is promoted and nourished strategically. Thus, as it was previously argued, providing ICLHE/CLIL training may help teachers to enhance their students' learning though peer collaboration and CoPs.

Another theme that can be interpreted from the teachers' answers to the semi-structured interview is that lecturers are tech savvy, they know how to use digital technologies to teach and enhance student learning. Lecturers are informed about new digital technologies, and they use different digital tools to support students' learning. As an example, R1 indicates using "worksheets, PowerPoint, specific software (spreadsheets, filling out forms, etc.), videos" and R3 refers using "Moodle as a repository for monographic documents, PowerPoint presentations and videos" when teaching in English. Additionally, R6 describes using "PowerPoint presentations, YouTube videos and some made by myself, Kahoot applications, Mentimeter, and worksheets".

The QUAN data does not include any questions related to the use of digital technologies; therefore, it does not reveal information on this topic. However, the responses of the eight participants suggest that the competence of teachers in using technology for instructional purposes can facilitate the introduction of new and innovative teaching methods that are more connected to tech-savvy students and thus be more conducive to engagement to learning.

Digital technologies provide access to a vast array of online resources, such as multimedia content, e-books, and learning platforms. These resources can enrich CLIL lessons by offering diverse content formats and engaging materials. Furthermore, digital tools allow teachers to incorporate multimedia elements like videos, animations, and audio recordings into CLIL lessons. This helps students to visualize complex concepts and enhance language comprehension through context. Students can also participate in virtual experiments, simulations, quizzes, and discussions with teachers and other students. Several studies show positive experiences using technologies in CLIL settings (Maggi et al., 2014; Martínez-Soto & Prendes-Espinosa, 2023; Merzlykin et al., 2018).

With the use of digital technologies students can engage in virtual projects, discussions, and group activities, promoting language practice and content exploration. These platforms offer diverse assessment options, including online quizzes, self-assessment tools, and automated feedback that can support both content understanding and language proficiency evaluation. Thus, digital technologies may transform CLIL by providing enhanced resources, interactivity,

collaboration, and adaptive learning opportunities such as virtual exchanges. When integrated effectively, they can increase the benefits of CLIL instruction by enriching both content understanding and language acquisition (de Diezmas, 2018; Vo et al., 2023).

Through the analysis of respondents' answers to the interview it might be presumed that teachers are essentially content-oriented and lack language sensitivity. Their answers focus mainly on content: "I focus my activity on exposing concepts in a short and simple way and ask students to test them in practical exercises" (R1); "I do not evaluate linguistic aspects, even the theoretical component involves calculation, there is little writing" (R8). Lecturers lack the knowledge or skills to address errors made in a foreign language: "Unfortunately, I must give much more importance to content because most of the time the written evaluations have so many grammatical and spelling errors that make it very difficult to understand what I must assess" (R3).

Results suggest that despite teachers' confidence in their ability to teach in a foreign language and to use it for professional and academic purposes in their professional careers, they show limited awareness of the language of instruction's role in teaching. These findings may indicate the need for teachers' training at IPCB to focus on language-sensitive teaching, a plurilingual awareness in teaching, as well as on strategies for bilingual education. Several studies on teachers' beliefs in HE point to the need for methodological training that may also focus on these areas among others (Fernández-Costales, 2015; Pérez-Cañado, 2016a, 2016b; Piquer-Píriz & Castellano-Risco, 2021). However, some studies highlight that lecturers may be more interested in receiving linguistic training than methodological training to improve their own linguistic performance in academic and interpersonal contexts (Aguilar, 2015; Aguilar & Rodríguez, 2012; Fortanet-Gómez, 2012), which is also true for some of the interviewees, who claim they would seize opportunities to improve their English: "knowledge and command of English language are the essential aspects I would like to improve" (R2); "I think I need training to practice speaking" (R6). According to Ellison et al. (2017), university instructors tend to prioritize linguistic issues over methodological ones when considering their training needs, despite ongoing efforts to raise awareness of methodological concerns among those who teach

in a foreign language. In fact, Ellison et al. (2017) highlight that teachers actually believe that improved language proficiency leads to better teaching in English, which may indicate that they perceive their teaching experience in their native language as a validation of their methodological abilities for teaching in a foreign language. This raises a question for CLIL training that needs to be addressed: the comfort given by being proficient in English does not necessarily amount to understanding the needs of students in a bilingual or plurilingual context.

In line with respondents' needs is recent research on CLIL and pluriliteracies, a group of international experts, named the Graz Group, developed a recent approach known as Pluriliteracies Teaching for Learning (PTL) with the purpose of responding to several conceptual and methodological deficiencies that have come to light through the research and practice of CLIL academics and professionals (Meyer et al., 2018). According to Meyer et al (2018), guiding learners toward achieving pluriliteracy (the acquisition of subject-specific literacy in multiple languages) will enable them to intentionally and effectively formulate and convey knowledge across various languages and cultures, which will prepare them for their personal and professional lives.

Meyer et al (2015) have returned to the 4Cs conceptual framework and explored the interaction between language and learning. They propose the new Pluriliteracies approach. These studies suggest that a CLIL classroom could incorporate the principles of the Pluriliteracies approach by integrating digital media, visual resources, and intercultural content into the language and subject teaching. The interaction between these two approaches can enhance students' language skills, content knowledge, critical thinking abilities, and overall cultural competence (Coyle et al., 2018; Meyer et al., 2015, 2018; Meyer & Coyle, 2017).

Finally, respondents admit using their autonomy to peruse bilingual resources for teaching: "there is more material available in English, that I also use in Portuguese and bilingual classes" (R3); "There is much more content available in English than in Portuguese, so I often use illustrative examples in English in the classes taught in Portuguese" (R4). These references may show teachers are comfortable with using English for teaching purposes and that they see advantages in using plurilingual resources. These could constitute a good starting

point for CLIL implementation and be explored in terms of CLIL scaffolding or as support for plurilingual environments.

QUAN data may help understand teachers' practice of using bilingual resources as in general IPCB teachers believe they possess good language skills. All the questions related to lecturers' language competence, specifically questions 76 to 81, show an average score above 5 (ranging from 5.20 to 5.69), which may indicate they are familiar and comfortable with using English as a medium of instruction and therefore comfortable in using bilingual resources for their classes. This does not necessarily conflate with their effectiveness as EMI teachers or teachers who embrace the CLIL approach. Neither does it mean that there are no opportunities for improving English skills, as will be seen in the next section.

Results from quantitative study found a positive relationship between teacher autonomy and teacher collegiality and between teacher autonomy and teacher collaboration, confirming H1 and H2, respectively. Despite the assessed positive relationships, when analysing both coefficient paths, results show that both effects are low. Qualitative study's findings can shed light on specific arguments that may explain some results. Teachers reported a limited freedom to decide what to teach, a strong emphasis on the process of conducting the students' assessment and how to do it, and concerns regarding how to teach content, how to combine content and language in the assessment and how to evaluate students given the reported student's low language competence. These results, further address content teachers' concern about their need for additional language skills which the language teacher can help to address. However, at same time, it may show some resistance in addressing collaboration activities, particularly those regarding ICLHE/CLIL. This may happen due to their perception about their autonomy to implement changes in content. Assessments and students' lack of language knowledge may be the reason why lecturers are concerned about how students will learn the content if they teach in English.

6.2. Teacher collegiality and collaboration

The objective of this section is to investigate the views of IPCB teachers, in general, on collegiality and collaboration, and how this knowledge can be applied in the implementation of CLIL. QUAN results of the collegiality scale recorded a mean of 3.88 and findings of the collaboration scale a mean of 4.26 which is a low mean when compared to the autonomy scale (6.10). This difference may indicate that IPCB lecturers do not usually engage in discussions with colleagues about teaching practices, ask for suggestions, teach in teams, or make collective decisions about instructional practices.

The Mann-Whitney U test results show that teacher collegiality perceptions do not vary according to gender. However, the Kruskal-Wallis H test reveal that lecturers collegiality perceptions change according to the respondents' affiliating school in several items, such as TC1 (professional interactions among teachers are cooperative and supportive), TC4 (teachers consider their colleagues as their friends), TC5 (teachers in the school respect the professional competence of their colleagues) or TC 10 (cooperation and collaboration exist across departments), among others. This variation may be caused by different factors, such as differences in group characteristics, external influences, or other factors that affect the responses of people belonging to these groups. Therefore, the contrasting distribution of scores among groups suggests that the responses could be influenced or determined by the group to which individuals belong.

Conversely, the Mann-Whitney U and the Kruskal-Wallis H tests show that teacher collaboration perceptions do not vary according to gender or affiliating school.

However, the eight respondents who were engaged in ICLHE at IPCB reported some interesting considerations about collegiality and collaboration. When reading the data, one of the themes that can be identified is the advantages of collaborative work in CLIL, which is in line with the quantitative results and the observed strong positive relationship between teacher collegiality and teacher collaboration (TC-> COL).

Results from the quantitative approach show a strong positive relationship between teacher collegiality and teacher collaboration. This finding is confirmed

by results from the qualitative study. Teachers believe that working with a language lecturer can improve their own language skills. They state they can be supported by the language specialist in planning lessons, preparing materials, and enhancing language proficiency through feedback on teaching tasks. Such collaboration may highlight the benefits of peer support in language competence. Additionally, according to QUAL results, despite some difficulties when preparing classes, teachers managed to overcome obstacles and produce an effective implementation of the module, which may explain the positive relationship between teacher collegiality and teacher collaboration and the strength of this relationship.

The respondents refer to the joint work of content and language teachers "the collaborative work between content and language teachers would probably have positive results" (R1). Instructors believe that receiving feedback is important: "obtaining feedback is essential to improve performance" (R1), "and her [language teacher] feedback was very important to me" (R3), "their [language lecturers'] feedback was quite rich" (R4). Teachers' engagement in CLIL allowed them to improve their linguistic competence: "on the occasions when I had the privilege of having English language teachers collaborating and monitoring teaching-learning tasks and activities, their feedback was quite rich and allowed me to significantly improve my knowledge of that language" (R4). Feedback from the language teacher can also help the content teacher to improve their linguistic skills. Instructors believe that the help of the language teacher and their feedback would be important and helpful: "monitoring and obtaining feedback is essential to improve performance" (R1). This would only be possible if the language teacher attended content classes with the purpose of giving advice on what should be improved, although being part of a collaborative lesson planning stage might also be considered by many as a strategy to support their English skills.

Respondents also think that content and language teachers in the same class is an advantage: "part of this problem would be solved by the participation of language/content teachers in the same classes" (R1), "in order to be able to overcome these linguistic problems, eventually there could be a greater connection between the content teacher and the language teacher" (R6).

The collaborative work of teachers in developing teaching materials and implementing teaching strategies are also considered advantageous: "I am referring to collaborative work in the design and preparation of didactic materials and teaching" (R1), "it would be very useful to receive follow-up/feedback during the development of bilingual methodologies" (R6).

At some point, the content teacher may consider that they are able to teach independently and switch to an English as a Medium of Instruction (EMI) approach: "I don't feel the need for ongoing support in my English classes" (R3), "Even today, if necessary, I count on their help in clarifying and solving concrete needs" (R4).

Moncada-Comas and Block (2019) echo Airey's (2016) assertion that it is inaccurate to perceive content and language as distinct entities. To convey this concept, they introduce the term "CLIL-ised EMI," which emphasizes that EMI facilitates both language acquisition and content comprehension. Research has recently highlighted the trend towards the "clil-ization" of EMI in general and EMI programs at universities, as noted by Piquer-Píriz & Castellano-Risco (2021, p.86), and as discussed in works by Alejo-González (2018), Moncada-Comas & Block (2019), and Pérez-Cañado (2020a). Piquer-Píriz & Castellano-Risco (2021) suggest that there should be more practices from ICLHE brought into the class. Different forms of teacher collaboration could be one of those practices. Findings of this study, even though it is a small sample of eight teachers who experimented with ICLHE, may be in line with this research. Using the CLIL approach can be a helpful starting point for HE lecturers to teach in English as it enables them to build confidence and understand the language needs of their students. As they become more comfortable with teaching in a foreign language, they can progress towards changing from ICLHE to EMI.

Another advantage of ICLHE/CLIL is that it can be a possibility for teaching in a different way. Exploring new approaches can inspire teachers to innovate their teaching methodologies: "today when preparing my classes and teaching, whether bilingual or not, I do things differently", "the enthusiasm to develop new learning tools and learn new ways of teaching and learning" (R6), "it's a new experience, new challenges, different ways of teaching, it's always positive" (R8).

Lecturers tend to feel more comfortable in using teaching materials in English: "after the CLIL training, and in some CUs, I'm already using some materials in English" (R6) and see it as a benefit.

CLIL training is also highlighted by instructors in their answers to the interview. Overall, they refer that having a previous CLIL training allowed them to adapt some teaching materials and receive feedback from experienced teachers, which they consider highly beneficial: "I participated in training initiatives (CLIL)", "[it was] very enriching" (R5), "after the CLIL training, and in some CUs, I'm already using some materials in English" (R6). Respondents also consider the benefits of joining further CLIL training courses: "If there are intermediate/advanced CLIL courses, I might consider joining another one" (R3).

Difficulties experienced when collaborating for CLIL is another theme that can be read from QUAL data. Teachers may have different perspectives regarding content, what to teach and how, which instructional materials to use and how to prepare them, how to adapt materials for CLIL: "the work of planning, preparing, and implementing the module was challenging because it involved teamwork between me (content teacher) and the language colleague. The fact that we are from different scientific branches and have different objectives in terms of the contents to be taught led to disagreements about the direction to take in the planning and design of materials" (R1).

QUAN data corroborate QUAL data by showing that lecturers do not collaborate with each other in the design and planning of their classes, ask for suggestions, engage in discussions about the implementation of new approaches or co-teach. Questions relating these topics in the collegiality scale (chapter 7, section 1.2.) have low means, ranging from 3.12 and 3.75.

Another topic that emerges from QUAL data is related with interpersonal challenges in collaboration. Lecturers indicate that the motivation behind the CLIL approach is that the result is rewarding for both teachers involved in the sense that they both see their learning objectives reflected in CLIL practice: "the shared goal of implementing the CLIL module fulfilling the objectives of both teachers" (R1).

Ball (2018) contends that one of the most significant challenges encountered during the implementation of CLIL is related to the availability and creation of appropriate materials. He also mentions the absence of CLIL materials and precise guidelines for creating them. Materials design in CLIL is a fundamental aspect for creating effective and engaging lessons that explore both content and language learning. CLIL materials are designed to promote the learning of subject-specific content while simultaneously enhancing students' language skills.

Even though content and teaching materials are coded in the autonomy dimension, they are actually very relevant and important when it comes to collaboration. Successful collaborative practices entail the cooperative planning, design and adaptation of materials, which are key for effective ICLHE/CLIL.

CLIL materials should consider the curriculum and learning objectives of the subject being taught. The content should be accurate, relevant, and appropriate for the students' age and proficiency level. The teacher should make sure they are adequate for the students' language proficiency level while also introducing more advanced vocabulary and language structures. Lecturers can provide language support in the materials, such as glossaries for key terms, contextual definitions, and sentence frames to assist students in expressing themselves effectively.

CLIL teachers must also incorporate authentic resources from the subject area, such as articles, videos, and real-world examples because authentic materials expose students to the language and terminology used in academic and professional contexts.

To design a variety of tasks that cater to different learning styles and language skills and gradually increase the complexity of tasks to scaffold learning are important as well. Linking content to real-world scenarios will help students to see the practical relevance of what they are learning. CLIL materials should be adaptable to different classrooms, teaching contexts, and student needs. Teachers may need to modify and customize materials based on their specific teaching situation.

Mehisto (2012) presents ten fundamental criteria in a study about how to produce quality CLIL learning materials: making the learning objectives and process evident and transparent to the students; systematically foster academic language proficiency; foster learning skills development and learner autonomy; include self, peer and other types of formative assessment; helping to create a safe learning environment; promote cooperative learning; seek ways of incorporating authentic language and authentic language use; foster critical thinking; nurture cognitive fluency through scaffolding of a) content, b) language, c) learning skills development helping student to reach well beyond what they could do on their own and helping to make learning meaningful.

On the other hand, providing training and support to teachers on how to effectively design and implement CLIL materials is very important. In fact, Pérez-Cañado's study (2016b) results show that the majority of participants expressed the need for additional training in the design of EMI materials. Piquer-Píriz and Castellano-Risco (2021) also highlight HE teachers' requirement for training in this area.

R1 did not go through the CLIL training, so did not experience first-hand how to clil-ise own teaching and learning materials. This is probably the reason for R1's comment about the benefits of content teachers who teach in English undertaking pedagogical training. During the initial training course, both content and language teachers were introduced to CLIL principles and collaborated on planning and designing a CLIL module. The content lecturer proposed a topic and provided a book text, an article text, and a media resource related to the topic. Afterwards, the two teachers worked together to create a module using these resources, in which both the content subject and the English language learning aims were integrated. This task posed several challenges, however they managed to overcome the difficulties. Instructors recorded at the end of the module implementation that, despite the initial challenges, this training was highly valuable as it enabled them to effectively teach from a CLIL approach (Sampaio et al., 2021).

Furthermore, pre-existing personal relationships may be both considered an obstacle to collaboration and an advantage for collaboration. Close relationships

between collaborating teachers can be beneficial as they are familiar with each other's characteristics. However, conflicts may also arise more easily. When lecturers are more familiar with each other they disagree with each other easily and may frequently have different opinions.

According to Zappa-Holland (2018) successful teacher collaboration requires certain personal characteristics, including possessing an inquiring and creative mindset, avoiding territorial behaviour, demonstrating commitment to the program, practicing patience and persistence, showing strong interpersonal skills, maintaining a respectful character, and demonstrating a genuine interest in enhancing student learning.

Reviewing the qualitative data, it becomes evident that most of these attributes are referenced by respondents, who mention negotiation skills, or the time and commitment required to embrace CLIL. For example, R1 argues that CLIL "enables collaborative work among professionals from different scientific areas, each with different objectives, without jeopardising the interpersonal relationship between both lecturers." R4 states that this collaboration represents "a form of work, collaboration, and growth with multiple fruits" and that "personally, [they] cannot perceive a limit to these collaborative efforts, [and] hope they can endure for a long and constructive period!" and expresses gratitude "for all the moments of work, socialising, and learning that these initiatives have allowed". These references may show evidence of the obtained positive relationship between teacher collegiality and teacher collaboration in the quantitative results.

For successful collaboration between content and language teachers it may be important to understand how teachers manage disagreements within collaboration and communication, how they maintain a healthy relationship of disagreement and negotiation. R1 also presents how they could overcome these difficulties: "Despite the challenges in terms of interpersonal relationships, the difficulties were overcome due to two essential aspects. On the one hand, the pre-existing personal relationship and on the other, the shared goal of implementing the CLIL module fulfilling the objectives of both teachers".

Sharing knowledge is also seen by respondents as a type of challenge. For teachers to share their knowledge with one another, negotiation and adaptation are necessary.

Respondents' statements align with literature about collaborative work between teachers. Marshal et al (2011) study on a project in South African physics education delineates a close partnership between subject-specific instructors and an academic literacy specialist, working collaboratively throughout a year-long course. Using Gee's sociocultural perspective on discourse (1990, 2005) they suggest that an essential element for effective collaboration between teachers dwelled in their mutual identification as 'discourse lecturers' primarily, and subsequently as literacy or subject matter instructors. This shared understanding prevents task division and compartmentalization. They also found out that Jacobs' (2007, 2008) key elements (collaborative interactions, nature of relationships, power relationships, and roles and responsibilities) were helpful in delineating the factors that facilitated the collaboration between the subject-specific instructors and the academic literacy specialist within this particular context.

A different research study (Bryant et al., 2014) centres on the socially-constructed meanings, consequences, and institutional elements that impact the degree to which faculty members participate in cooperative instruction within a research-oriented university. Results show that transparency, open dialogue, strong interpersonal relationships, and the ability to reconcile individual teaching styles were believed to be essential for the triumph of traditional collaborative teaching. Additionally, this traditional collaboration model was not considered suitable for every teaching team. Experiences were described as challenging, but positive.

Based on the respondents' observations, it is possible that in this particular context teachers are more likely to express their opinions when they feel more comfortable or have a closer relationship with each other. Overcoming challenges requires negotiation. These findings are in line with some research about collaboration (Vangrieken, 2018; Vangrieken et al., 2015). According to Nelson et al (2010) in order to prevent emotional or affective conflicts, teachers often stick to congenial conversations that revolve around generalities of instructional

practices and unsupported assertions about student learning. However, transitioning from these relatively superficial conversations to more productive dialogues that can truly enhance student learning requires a willingness to take risks and build trust. Grossman, Wineburg, and Woolworth (2001) argue that congenial conversations deliberately avoid "fault lines", which Nelson et al (2010) defend are fundamental differences amongst any group of people that can be ignored when conversations remain pleasantly general but are eventually exposed as people try to understand the meaning of others' words or actions.

In a collaborative relationship, partners need to respect each other's ideas, opinions, and expertise. Teachers need to be tolerant and try to comprehend each other's words or actions, which implies that they need to be understanding and always consider mutual and shared objectives instead of thinking individually. What truly matters and holds significance is achieving the goals they both identified at the beginning of the collaboration.

Lecturers' responses also shed light on a theme related to how collaboration can create learning opportunities. The content teacher starts reflecting on how language impacts on teaching, be it in the mother tongue or in a foreign language: "possibility of reflecting on procedures and processes usually taught in a mother tongue" (R1). ICLHE/CLIL may be seen as an opportunity to develop an awareness of language as a means of pedagogical communication.

Marsh (2008) argues that Language Awareness (LA) is related to learning, teaching, and using languages, involving understanding the language in its essence, the most effective approaches to language acquisition and how individuals engage in communication within real-life scenarios. CLIL and LA have a very close relationship. Marsh also states that:

> The language focus within CLIL is invariably on facets of language awareness. This may involve learners having greater understanding of the types of language needed to learn content, the types of thinking skills required for achieving different learning outcomes, and the types of preferred learning styles and strategies that individuals possess. (Marsh, 2008)

Martín del Pozo (2016), citing Van Lier and Corson, define LA as the "explicit knowledge about language and conscious perception and sensitivity in language learning, language teaching and language use". Pozo's research aims at contributing to LA in CLIL by implementing a needs analysis for CLIL teacher training concerning linguistic requirements of teaching content subjects through English. Results indicate that LA within CLIL is important and that "any training/education which pays attention to language awareness is a good investment" (Martín del Pozo, 2016).

Engagement in empirical studies seems to be a further motivation for implementing CLIL practice: "I also collaborated in the development of empirical studies on bilingual education" (R4). Collaboration with certain respondents extended beyond one or two semesters, enabling the gathering of data on the pedagogical interactions with the students as well as among the collaborators. Thereby, both content and language teachers feel more involved in the process and study results and methodologies together. This is a strategy that reinforces action research and consolidates good practice and reflexivity.

Instructors refer to different types of collaboration within the CLIL settings. The language teacher may be seen as a language consultant, someone who is there to support and clarify any linguistic issues: "even today, if necessary, I count on their [the language teachers] help in clarifying and solving concrete needs". Thus, the role of language teacher may change after the collaboration for CLIL. When the content lecturer becomes more proficient in using the foreign language for teaching, they may believe that they no longer require the assistance of the language teacher. This is when they may feel empowered to embrace EMI (from CLIL-ising to EMI-ising, as suggested by Pérez Cañado (2021)).

However, research shows that there is support provided by language teachers to EMI lecturers. For example, Lasagabaster (2018) argues that team teaching within EMI contexts is very important as content specialists "feel frustrated by the lack of institutional support to work on their English" (p. 401). Additionally, institutions do not offer teachers EMI specific training, which may account for why content lecturers do not consider language aspects (Aguilar, 2017). With reference to Schleppegrell and O'Hallaron (2011), Lasagabaster (2018) claims

that this language weakness can be overcome by collaboration between language and content teachers. This partnership is expected to enhance the language awareness of EMI teachers themselves, encouraging them to consider their distinct responsibility in teaching discipline-specific language education.

Hence respondents' 'sense of power' might be an illusion and they may still require the assistance and feedback of the language teacher, even when using EMI rather than CLIL (It will probably depend on the particular teacher). Interdisciplinary teams' dynamics may be really sensitive. Nancarrow et al. (2013) arrived at a framework that identifies characteristics and proposes ten competencies that support effective interdisciplinary team work: positive leadership and management attributes; communication strategies and structures; personal rewards, training and development; appropriate resources and procedures; appropriate skill mix; supportive team climate; individual characteristics that support interdisciplinary team work; clarity of vision; quality and outcomes of care; and respecting and understanding roles.

Educators mention the use of foreign language in other contexts than teaching, which may constitute different ways of collaboration. English can be perceived as a way to communicate in academic or professional contexts. Collaboration can also be understood as a means to communicate with other academics in different contexts beyond the realm of pedagogy. Lecturers embrace different professional challenges with other institutions and students from multiple backgrounds: "Greater personal and professional growth, as well as greater openness to embrace international challenges with other institutions, researchers and students from multiple origins and nationalities. I think that with this we all win" (R4), "I usually participate regularly in international events and congresses in which the English language is used as a means of communication. Also in research projects, with foreign teachers and students, we use English as a form of communication" (R4). These experiences may help lecturers improving their language and communication skills and apply them to teaching practice, but classroom instruction language is quite different from academic language, a distinction that may not be clear for content teachers.

These findings are consistent with literature which states that in the context of European higher education following the Bologna process, which prioritizes

multiculturalism, multilingualism, internationalisation, mobility, and employability, proficiency in foreign languages, particularly English as a lingua franca in academia, has become an imperative requirement for both students and faculty members (Coleman, 2006; Doiz et al., 2013b).

QUAL data suggests that teachers may perceive their engagement with CLIL as a means to be more prepared for other challenges in a foreign language, to deal with Erasmus students, to be part of academic events such as conferences and to communicate with other academics.

Another theme which stands out from lecturers' answers to the interview is that CLIL is an added value for students: "its use constitutes an added value, for the teacher, the students, and the institution" (R5), "taking a realistic look at the investment and its return, I believe that all the work carried out in these areas was clearly beneficial" (R4). Collaboration of content and language teachers is perceived as a benefit for students because it facilitates a more enriched and effective pedagogical experience within the context of bilingual education. Bilingual education also helps teachers to support Erasmus students' learning needs. Teachers believe they can now help students to use materials and resources in English: "after the CLIL training, and in some CUs, I'm already using some materials in English" (R6), "Yes, it was worth it, today when preparing my classes and teaching, whether bilingual or not, I do things differently".

Results from both analyses, quantitative and qualitative, corroborate the interrelation between teacher collegiality and teacher collaboration. On the one hand, in the quantitative analysis H3 (positive relationship between collegiality and collaboration), shows the highest coefficient path within the structural model. Even though the results are still far from the value 1, they are higher, which confirms that collegiality presents a strong contribution to collaboration among IPCB lecturers. On the other hand, additionally to the reported advantages of collaborative work, QUAL results show a strong relationship between the two dimensions (collegiality and collaboration). These two variables are closely associated by the respondents, who highlight teamwork in designing and preparing classes, the improvement of the language competence of the content instructor, or the feedback provided by the language specialist during the

development of bilingual methodologies. Additionally, the argument reported on qualitative study saying that previous relationship with the language teacher was the main reason to engage in ICLHE/CLIL may improve confidence on the strength of the observed positive relationship between teacher collegiality and teacher collaboration.

6.3. Teachers and students' language competence

From a global perspective, lecturers see their linguistic competence as adequate to teach in English, being confident about their comprehension, writing and speaking competences. A mean of 5.42 was found in questions related to lecturers' perceptions about their own English language competence in quantitative questionnaire.

QUAN questionnaire results show that all the questions related to teachers' language competence (questions 76 to 81) present means above 5, ranging from 5.20 to 5.69, which indicates that lecturers are confident about their linguistic skills.

Similar findings have been found in literature. Perez-Cañado concludes that teachers believe their level of linguistic and intercultural competence is adequate to some degree or "quite complacent" (Pérez Cañado, 2016b, p. 276). Fernández Costales and González Riaño (2015) investigation concluded that lecturers' self-awareness of their level of English shows fairly optimistic outcomes. Aguilar (2017) found that a frequent concern of teachers about teaching in a foreign language is their level of proficiency, which they consider a positive result and a challenge at the same time. More recently Pérez-Cañado (Pérez Cañado, 2020a) refers to teachers' tendency to perceive their linguistic skills in a fairly positive way as a tendency to "harbour a quite self-complacent view of their own language skills".

The answers to the semi-structured interview conducted also show that teachers are confident of their linguistic level to teach in English. For example, R1 considers having a "reasonable" linguistic competence, R3 claims having a "C1" level, R4 believes the "command of the English language is suitable for the

situations in which I (R4) need to apply it" and the other respondents trust they have the "adequate" level of English. There may be some fairly optimistic outlook among teachers who have never taught in English.

While assessing differences among groups of respondents the Mann-Whitney U and Kruskal-Wallis H tests' results show that teachers' perceptions about their students and their own language competence do not vary according to gender. However, items LC6 to LC11 which assessed lecturers' perceptions on their English expressions knowledge to communicate and interact with their students and students' listening, speaking, reading, writing and academic vocabulary knowledge, change according to affiliating school. As it was previously stated, these findings may be clarified by the different of scientific areas present at IPCB, including Science, Technology, Engineering, Arts, Mathematics, Health Sciences, Social Sciences, Education, Business and Economics, Humanities, among others. This may be concerned with the fact that in their content areas some lecturers usually read materials in English and use specific technical vocabulary in English.

Within the main topic of teachers and students' language competence, training needs is another theme which emerges from data. Sometimes teachers lack the necessary vocabulary and syntax to communicate effectively with their learners as claimed by R3: "I must change to another way of conveying the message".

Teachers perceive that their fluency in English is not always what is required and wanted: "when teaching in English, I feel that sometimes I lack some vocabulary, although I always end up finding another way to express myself" (R5); "although I think that I sometimes lack generic vocabulary"; "I believe that my biggest difficulty is related with the lack of fluency, and some lack of vocabulary" (R6)".

Content teachers seem to be aware of own language obstacles and communication barriers. These feelings may be a consequence of the lack of institutional support to have specific language training to overcome their difficulties (Aguilar, 2017) and help them to feel more comfortable with the language and at the same time support students with language learning.

It might be because of this perception that teachers show some interest in attending language training courses: "I have taken several courses in English"

(R7), "I attended some English courses at the IPCB language centre" (R8). They participate in Erasmus mobility programmes as well and equate these to improving their English skills: "I participated in Erasmus mobility programs" (R4), "I participated in Erasmus mobility" (R5), "In the Erasmus programs I taught in English" (R7), "I usually do an Erasmus mobility abroad per year" (R8). Erasmus mobility may also be regarded as occasions for teachers to cultivate their language competence and fluency, thus serving as valuable tools for achieving optimal performance in teaching a foreign language: "every situation in which it is better to communicate in English is good to promote greater fluency and communication skills in English" (R4).

Pérez-Cañado (2018) points out the need to invest in ICLHE/CLIL teacher training as it is "where CLIL will stand or fall in terms of sustainability" (Pérez Cañado, 2016b, p. 2). Several other research studies have already identified the same need (Ball & Lindsay, 2013; Lasagabaster & Ruiz de Zarobe, 2010; Wilkinson, 2013), which may suggest that training teachers for CLIL is essential and crucial.

However, during the analysis to QUAL data other themes emerge in connection to language competence that may through some light on how teachers reappraise their linguistic competence after experimenting EMI or CLIL. As respondents are content teachers, one of their first concerns is scientific and technical terminology of their subject areas. Lecturers are worried about technical terms they must teach to students: "One of the most relevant aspects of teaching in English has to do with the specific terminology of my area. The CUs I teach are very technical and terminology is particularly important because similar terms in Portuguese and English represent different ideas" (R1); "(…) always use the technical terms in English" (R6); "(…) I always use technical terminology" (R8).

English as a Lingua Franca is another theme emerging from qualitative data. The English language is considered the language of senior technicians: "in addition to being the language of senior technicians" (R3). All relevant content bibliography is written in English: "almost all the current bibliography is in English, which facilitates understanding" (R3). Technical documents are always written in English: "technical documentation in my field is typically provided in English,

which means that students must analyse electronic component data sheets in English, regardless of their preference" (R8); "to encourage students so that the language is not an obstacle, I try to emphasize language learning, and show them examples of leaflets with technical information (Datasheets) so that they realize the importance of learning English" (R6).

A foreign language, such as English, enables more effective communication with students: "it is the only form of communication between people who do not share the same native language" (R2); "I think that students can overcome possible linguistic problems that they normally face in different communication situations when speaking in a foreign language (at school and/or in a professional context) by improving their perception of the linguistic skills they actually have. However, they rarely accept their skills in different contexts than leisure. I believe that this can be achieved through their involvement in entertaining and informal learning situations in which, at the end, they will apply their real level of English in learning and professional contexts in higher education" (R4); "I believe that it is very important to encourage the use of bilingual teaching in the classroom context" (R5).

ESP focuses on teaching English language skills in a specific area of expertise. It intends to provide learners with the language skills they need to effectively communicate in their chosen professional or academic domain. CLIL, on the other hand, develops both subject-specific knowledge and language proficiency simultaneously.

As previously mentioned (Chapter 1, page 6 and 7), Ruiz Garrido and Fortanet-Gómez (2009) explore the connection between ESP and CLIL and date it from 1990's. They point out that ESP places its emphasis on language acquisition, while CLIL centres on the integration of both language and content. Moreover, CLIL employs an array of strategies designed to enhance learning, further enriching the learning process.

However, we may conclude that ESP and CLIL are different educational approaches and serve different purposes, but they can work together to provide learners with a comprehensive and integrated language learning experience.

The fact that teachers are concerned with transmitting to students the important role of the English language around the world may indicate that IPCB teachers are aware that students' skills in learning through English need to be developed, that there are several Englishes and that students need to be made aware of EAP, ESP and the standard English for informal communication. This language awareness may constitute an interesting starting point for launching an experiment with a new and innovative approach like ICLHE/CLIL: "this type of activities should be encouraged because in a more global world, students (and teachers) should be familiar with the use of the English language in this case" (R6).

The third theme identified is that lecturers do not focus on specific language issues. Language is seen as a means to teach the content to students: "I only consider linguistic aspects as they allow for clear communication" (R2). This implies a reductionist approach to language in education.

This may be a matter of language awareness, as was stated above. They may lack specific training (Aguilar, 2017) and because of that do not feel comfortable in assessing language issues. Koopman (2014), in a small scale project in the Netherlands, explores "experienced CLIL subject teachers' practical knowledge base regarding the actions and activities for language learning in their lessons" (p. 123). Findings show that teachers think that the Language Teaching Wall activity (one of the used research instruments in which teachers reflect upon their actions in class and build a wall of words) is very useful as it helps them to be aware of what they do or could do to support language learning in their classes.

IPCB lecturers are not very confident about their students' English language competence. In fact, teachers' perception about students' English language level is that it is quite low, since all QUAN questionnaire's items addressing students' language level present means below the neutral value of 4 (with a mean of 3.53).

Qualitative data show that respondents, who were all engaged in a ICLHE/CLIL approach, also think their students' linguistic level restricts their learning in some way.

In IPCB specific context, this may occur due to two main facts: international students coming from countries where English language skills of students is lower

than in Portugal; or students coming from secondary school professional training courses, who could for instance choose to study Spanish instead of English during secondary education and are therefore below B1 level.

Consequently, the training needs of students for ICLHE/CLIL must also be analysed and addressed. Furthermore, additional matters require examination. How can we effectively implement the ICLHE/CLIL approach with students who possess diverse language proficiency levels? How can CLIL teachers enhance their students' language competence and provide assistance? The solution appears to involve an in-depth analysis of the training requirements for both teachers and students to successfully implement ICLHE/CLIL.

H5 about the positive relationship between language competence and teacher collaboration, exploring if teachers' perception on their students' language skills and their own linguistic competence would improve their willing to engage in collaboration, was not confirmed by the results of the quantitative analysis. This may be explained by the differences between teachers' beliefs about their students' language skills and their own linguistic competence. Results from both QUANT and QUAL analysis show that teachers believe they have good language skills while they perceive their students' language competence as being low.

QUANT results showed higher scores in items assessing teachers' language competence while teachers' perceptions about students' language skills present scores below the neutral value indicating that teachers set their students linguistic skills on a lower level. The QUAL analysis presented similar results with teachers highlighting their students' low language level and believing in their own good language competence. Thus, the difference in lecturers' beliefs, reflected in both quantitative and qualitative analysis, may be among the causes for the non-confirmed positive relationship between language competence and teacher collaboration observed in the quantitative approach.

6.4. CLIL/ Bilingual Education

In this section, data from CLIL/ Bilingual Education are analysed and discussed. The CLIL/ Bilingual Education category, presented in the final code book, was

extracted from qualitative analysis and was not addressed within the quantitative analysis. Evidence from the qualitative analysis indicate that the category appeared naturally. The emergence of this category may be based on the effect of the respondents' participation in previous ICLHE/CLIL modules.

Qualitative data extracted from respondents' interviews indicate that four main themes related to CLIL/ Bilingual Education can be addressed. The first topic that emerges from data analysis is using new teaching methodologies, namely bilingual education approaches.

Even though the eight respondents had experimented with CLIL in IPCB, in general they all refer they do not have knowledge of the bilingual education fundamentals, as these were not part of the training they had: "I don't know what kind of bilingualism I use", "I've read about it, but I'm not able to explain it by memory" (R1); "The theoretical foundations of bilingual education are unknown to me" (R3); "I wouldn't know how to describe the characteristics of the bilingual approach that I rarely use" (R5); "I don't always know what kind of bilingualism I use", "No, I am not aware of the results of bilingual education" (R8). This teachers' lack of knowledge about bilingual education principles may indicate that training in this matter may be important and that training should be made available as open resources to be accessed by all.

In fact, an open access 10-hour Small Private Online Course (SPOC) for self-study was developed by Working CLIL – a research strand of the area Teacher Education and Applied Language Studies and was released on the IPCB webpage (https://cursos-breves.ipcb.pt/course_detail.php?id=16). 'CLIL in Higher Education" SPOC, designed by experts from the Polytechnic Institutes of Castelo Branco and Portalegre and from the Universities of Córdoba, Extremadura and Porto aimed at helping teachers to learn about CLIL in contexts of Higher Education, to understand the linguistic and communicative needs of students who are learning in English and to use effective learning and teaching strategies that support students in learning English and content in English. This open access online training course may be helpful in addressing lecturers' needs.

Respondents also state that using new approaches, such as ICLHE/CLIL, may help to increase students' motivation and concentration. The implementation of

outdated pedagogical methods characterized by sustained textual and discursive instruction can potentially impair students' attentional faculties. This may be attributed to the contemporary academic landscape, which is flooded with a selection of competing stimuli that may disturb optimal cognitive processing. For example, R1 refers that "the number of stimuli to which students are dependent outside the classroom increases their difficulty in concentrating on specific and complex tasks. This aspect is particularly evident in activities involving long texts and/or many variables. The use of new (and innovative) methodologies will most likely have effects in terms of motivation and concentration".

Respondents' observations are consistent with the literature review, which established that students' language learning outcomes are positively associated with improvements in communicative proficiency, student motivation, learning attitude, self-directedness, and collaborative work (vd Conceptual Framework). Several researchers argue that the CLIL approach engages students in the learning process (Dafouz et al., 2007; Maiz-Arevalo & Domínguez Romero, 2013; Tsuchiya & Pérez Murillo, 2015; Vilkanciene, 2011; Vlasenko et al., 2020) and increases their motivation to learn (Babocká, 2015; Doiz et al., 2014; Lasagabaster, 2011, 2019; Lasagabaster & Sierra, 2009; Navarro-Pablo & García, 2018; Somers & Llinares, 2018; Sylvén & Thompson, 2015; Vlasenko et al., 2020).

Using new approaches may also increase lecturers' motivation to teach since they have the opportunity to try and test new ways of working with their students: "the use of a methodology that involves teaching content in a foreign language will have positive results"; "Higher levels of motivation (students and teacher)" (R1). On the other hand, having classes in English makes students pay more attention to what is taught in class: "From my experience, teaching in a language other than the mother tongue makes students pay more attention in class" (R1). CLIL may be seen as a means of providing teachers and students with innovative approaches to teach and learn in a dynamic and motivated environment, as demonstrated by these situations.

However, lecturers say that content is taught more slowly, which reveals teachers' concern to cover the syllabus content: "time becomes short to pay

attention to these aspects and even aspects of the language" (R6). In certain situations, the apprehension towards the amount of content covered may pose a potential impediment to the effective implementation of CLIL, given that content-area instructors may prioritize quantity over other pedagogical aspects: "less contents can be addressed in a bilingual class" (R3).

The implementation of bilingual education methods can be challenging for some teachers as it increases their workload and demands extra time and commitment: "since I do not use bilingual approach on a regular basis, this type of initiative increases workload" (R1); "bilingual teaching can increase the workload, I wouldn't say it doubled it, but we can consider 50% more working time" (R3); "the main difficulty is the effective availability of time for its implementation. That is, despite the fact that the benefits and advantages of these initiatives are clear, the real-world context of Higher Education teachers' activities leaves little margin of time beyond those actually necessary for carrying out and fulfilling organizational and bureaucratic issues" (R4); "the current workload is already overwhelming, and we don't always have time for initiatives of this kind" (R8). These reasonings can be an additional challenge to implementing CLIL in HE, as not all teachers share the same perspective or may be willing to devote more time to experimenting with new teaching approaches, especially approaches that will have a negative impact on content coverage, which they deem to be 'their main content'.

This may be one of the main concerns of content instructors and literature suggests caution in reducing the quality of the content through simplification and reduction as the standard of learning should be equivalent to that of comparable courses taught in the students' native language (Costa & D'Angelo, 2011).

However, research argues that the purpose of content compression is to enhance understanding and, thus, promote learning. It is used to prepare students to become content experts by concentrating on the deeper principles and concepts of a specific subject (Ambrose et al., 2010; Bain, 2004). Educational research indicates that appropriate content compression lead to deeper and enduring understanding compared to conventional practices that aim to cover as much content as possible (Bransford et al., 2000).

Thus, incentives may be important to motivate teachers to try and implement new teaching approaches. QUAL data show that lecturers consider incentives to be important: "in my opinion, having incentives is important" (R2); "yes, given the specific context of globalization and its impact on education and professional practices, having incentives that stimulate the adoption of innovative teaching approaches, especially those that promote bilingual education, is particularly important" (R4); "in my view, it is of utmost importance to have incentives that encourage the implementation of innovative teaching methods, especially those that support bilingual education" (R6); "I believe these incentives are crucial because we teach students from diverse nationalities and therefore, it is essential to provide instruction in both English and Portuguese" (R7); "I think it is very important to have incentives for bilingual teaching" (R8).

In line with this statement, literature indicates that if HEIs intend to broaden the scope of their EMI courses, they should incorporate a system of incentives into their internationalisation plans to stimulate lecturers' engagement (de Diezmas & Barrera, 2021). Actually, O'Dowd (2018) suggests the creation of precise language policy documents and programmes and Margić and Vodopija (2015) contends that institutions should offer financial support, workload adjustments, and language assistance as crucial prerequisites for EMI lecturers.

If HEIs are concerned about internationalisation policies, to which foreign language competence is essential, they need to motivate teachers to engage in time consuming approaches such as ICLHE/CLIL. These motivation strategies can be financial, reducing lecturing time, benefits for those embracing new projects, or any other institutions may find appropriate.

Nevertheless, despite the requirement for additional time, the overall evaluation of such initiatives is positive, which may indicate teachers may be willing to try new approaches and teach differently: "my overall assessment is highly positive" (R1); "my overall assessment is positive" (R2); "my overall assessment can only be positive. It was, has been, and I hope it will continue to be in the future a form of work, collaboration, and growth with multiple fruits" (R4); "my overall assessment of these initiatives is very positive, because sharing knowledge between different people from different areas of knowledge is positive" (R6).

IPCB faculty employs a foreign language as the medium of instruction solely when non-Portuguese-speaking students are present in their classes. One possible explanation for this could be the IPCB's internationalisation policy, which is primarily focused on students that come from PALOP (Portuguese-speaking African countries) nations: "if there are students who do not understand Portuguese, mainly Erasmus+ students, then classes are taught in a bilingual approach"; "With the exponential increase of international PALOP students, mainly from Guinea-Bissau, teaching in English is very limited, and I often must organise separate tutorial classes to non-Portuguese speaking students" (R3); "when I have Erasmus students I always speak in English and sometimes I repeat in Portuguese because students from the PALOPs struggle with English" (R7). Respondent 3 explains that sometimes they have difficulties with using English with Spanish Erasmus students: "some Spanish students even say that they came to Portugal on mobility because the teaching was in Portuguese and if they had known it was in English, they would not have come to Castelo Branco".

ICLHE/CLIL may represent a potential solution to this issue as it allows for language flexibility, and unlike other forms of bilingual education, both the native language and English can be employed.

Literature is scarce in this matter. There are a few studies with Portuguese as a FL for incoming students mainly developed at the university of Lisbon which has transition programmes in pre-university studies. That is the case of a PhD thesis being developed in the area by Olga Heitor, which uses a CLIL approach in pre-university studies.

Based on the analysis of the data obtained from the interviews, it can be inferred that ICLHE/CLIL is perceived as an interesting approach that can aid students and instructors to attain their objectives while enhancing motivation levels of both. As it was previously researched and argued in the literature review chapter (vide Chapter 1), CLIL provides an added incentive for students to acquire a foreign language (Doiz et al., 2014; Lasagabaster, 2011, 2019; Martí Arnándiz et al., 2022; Tompkins, 2022; Verspoor et al., 2015; Vilkanciene, 2011) increases student motivation (Babocká, 2015; Doiz, Lasagabaster, & Sierra, 2014a; Lasagabaster, 2011b, 2019; Lasagabaster & Sierra, 2009; Navarro-Pablo &

García, 2018; Somers & Llinares, 2018; Sylvén & Thompson, 2015; Vlasenko, Chumak, Sitak, Kalashnykova, & Achkan, 2020) and teacher motivation (Biçaku, 2011).

It is advisable to promote pedagogical strategies that facilitate the acquisition and instruction of foreign languages. Associating these approaches to virtual instruction can prove to be an interesting strategy as it can effectively tackle issues arising from time constraints, owing to its inherent flexibility.

When lecturers have time, they try to find new approaches and use additional strategies to help students. For example, R3 organizes reading groups for technical books written in English, where translations are carried out with the aid of students who possess a higher level of proficiency in the language: "When I have time, I organize a group with some students to read a basic book in English with some simultaneous translations with the help of students with a B2 level in English". R4 supports students through mentoring: "When the number of Portuguese language students is very high, when compared to Erasmus students, or when the contents are particularly complex, I invite foreign language students to regular weekly tutoring sessions exclusively in foreign language". The prevalence of such situations may suggest an inadequate level of preparedness among institutions to effectively cater to both domestic and international students within the same classroom setting.

Generally, the respondents favour an approach that is anchored in the tasks students are expected to undertake in their future working lives: "Oral presentations using PowerPoint and activities that require students to memorize, comprehend, analyse, and apply information from resources available on various platforms of official agricultural services. These activities are designed to provide students with a learning experience that is anchored in the tasks they are expected to perform in their future careers" (R3); "my favourite classes are classes based on real projects, or on applied tasks, in which collaborative and cooperative work between students and/or the teacher is encouraged" (R4); "Technical documentation in my field is typically provided in English, which means that students must analyse electronic component data sheets in English, regardless of their preference. This often results in the acquisition of technical vocabulary" (R8).

According to QUANT and QUAL data, lecturers are familiar with the English language, which they likely use for academic purposes. Based on the data collected from the semi-structured interviews (QUAL data), teachers seem to possess the flexibility to incorporate this approach in their teaching, even when conducting lessons in their native language. This may imply that implementing the CLIL approach could be a viable way to establish an ideal classroom setting for students, since it addresses both teachers' apprehension about equipping students for their future careers and students' need to be proficient in a foreign language.

As previously mentioned, teachers are tech-savvy as they know how to use digital technologies and incorporate them in their teaching activities. They use Moodle platform as a repository for students to follow teaching contents and activities: "in English classes I use Moodle as a repository for monographic documents, PowerPoint presentations and videos" (R3); "All my classes (face-to-face, online, and blended) are supported on a digital learning platform (Moodle), so all materials and content used and/or necessary for classes are available to students on that same platform. On that same platform, I usually make available a set of links that complement the information available on the platform (R4).

Thus, the capacity of teachers to use digital apps and platforms can be beneficial for the implementation of CLIL. Moreover, this approach provides an advantage as it boosts lecturers' confidence in using English materials during their lessons, even in classes taught in their native language. Once lecturers try the CLIL approach and learn how to adapt and build their own teaching materials in a foreign language, they become more confident about using available online digital resources and adapt them.

Bilingual education is considered a requirement to meet the educational needs of students who do not speak Portuguese as their first language. Through analysing teachers' responses, we can deduce that they consider teaching in a foreign language important, as it can provide students with the necessary language skills to thrive in a global job market or be a tool for communicating with foreign students.

The lack of students' motivation can be an obstacle to bilingual education as well. This was a challenge encountered by teachers during the CLIL implementation process in IPCB where they complain of lack of motivation of students in general and the fact that they miss classes often, thus showing lack of engagement with their studies: "the limitations were much more centred on the motivational dimension of these students than on any limitations in terms of their knowledge of the language, or any other possible linguistic problems"; "any problems with student participation in classes were rarely due to the fact that their language level was not sufficient" (R4); "to encourage students so that the language is not an obstacle, I try to emphasize language learning, and show them examples of leaflets with technical information (Datasheets) so that they realize the importance of learning English" (R6).

However, the flexibility of CLIL, which enables the use of both a foreign language and the students' mother tongue, is an advantage and a source of motivation for both teachers and students. Code switching is used as well as in-class translation: "As a means of encouraging student engagement and preventing language barriers, I try to communicate with them in Portuguese when needed. Additionally, I provide simultaneous translations of my Portuguese statements, and I often translate students' responses in Portuguese into English" (R4).

Nikula and Moore (2019) explore translanguaging in CLIL. Results from their study indicate that CLIL teachers have the perception that L1 might serve particular purposes and that CLIL lecturers' viewpoints outline functions, events, or actions for which the usage of the L1 is sanctioned. The authors perceive "awareness raising as the key and sensitivity towards translanguaging as something that will come into play as and when necessary and/or appropriate in CLIL classrooms" (p. 9).

When experimenting with CLIL, teachers tend to feel comfortable with the fact that they are assessing students in a foreign language: "the fact that students present or write assignments in English is no problem for me and I think it works as well as in Portuguese" (R4). The result achieved is identical whether it is in Portuguese or English: "I am satisfied with the evaluation process, as I find that when teaching in English, only the language of the questions differs, since the outcome is consistent across languages" (R8). This does not mean that they are

prepared to assess language, as we have seen above that they tend to focus exclusively on content, but it acknowledges cognitive gain, which is important to a selling point to other readers not yet involved in the process.

However, some instructors mention that they have only tried to implement CLIL in introductory modules, and that extending this approach to a whole semester course and covering complex technical content may be challenging: "in other cases where I use English in a CLIL approach, as the modules are always introductory modules to a subject, I do not evaluate English language proficiency aspects" (R6).

Teachers highlight that their classes consist of students with mixed skills and abilities as well as a range of specific learning difficulties, which may pose an additional challenge when implementing CLIL during a whole semester given the diversity of academic and cultural backgrounds: "teaching classes with students from highly diverse backgrounds makes it challenging to tailor the message to the audience" (R5); "In my classes, I have a small number of students who are proficient in the language, while others struggle with fundamental English language skills" (R6).

Another theme that emerges from QUAL data is the impact of the language proficiency level of students on the bilingual approach. Teachers believe that the language proficiency level of students impacts their learning and reduces their engagement in class because they do not feel confident about their language skills: "I believe that the language level of the students determines their learning"; "some students find it challenging to participate because they lack confidence in their language proficiency level" (R1); "the knowledge that students have of the language, whatever it may be, always conditions their learning" (R2); "the students' language proficiency level significantly impacts their learning, and as a result, I often need to provide reinforcement in Portuguese"; "the language proficiency level of the students affects their participation in the classes" (R6); "I do feel that most students do not feel comfortable speaking in English or having a technical class taught in English" (R8).

Students from PALOP (Portuguese-speaking African countries) and students from neighbouring Spain struggle with the English language requirements

necessary for CLIL (a B1 level), making it difficult to implement CLIL in classes where the majority of students belong to these countries: "PALOP and Spanish Erasmus students understand little or nothing of English" (R3); "I have many international students from the PALOPs and/or Spain, who don't know English" (R6); "Students from the PALOPs face significant challenges in speaking English" (R7). Consequently, in order to implement CLIL effectively, it may be beneficial to provide additional training to these students to equip them with the necessary skills to follow classes taught in English and acquire essential competencies to be prepared for the global job market, prior to engaging them in a bilingual approach.

Additionally, in the opinion of some of the interviewees, national students are not prepared to attend classes conducted in English either: "National students, for the most part, are not prepared to receive classes in English, I always have to explain in Portuguese and in English when I have international students in the classroom" (R8). Unpreparedness or unwillingness on the part of students to engage in bilingual classes deserves close attention and has been addressed at several HEIs through parallel classes and optional courses taught in English (Cesaria et al., 2023; Salaberri-Ramiro & Sánchez-Pérez, 2018, 2022).

Nevertheless, some students seem to be more engaged in classes taught in English: "from my experience, teaching in a language other than the mother tongue makes students pay more attention in class"; "I have observed that some students who do not typically participate become more involved in classes conducted in English" (R1). This may be a positive indicator for CLIL implementation, as it suggests that students recognize the importance of learning in a foreign language for their future career prospects and that they appreciate the challenge (or the novelty).

Considering the students' language difficulties, lecturers believe that it is easier to assess students orally than through written activities: "in written assessments, I am not very satisfied with the results, but in oral assessments such as presentations or answering questions, it is much easier to evaluate foreign students" (R3). It appears that it is easier to assess the speaking language skills of students than the writing competence. This may happen because teachers themselves feel more comfortable with speaking than writing in a foreign

language or because the rural skills of students are higher than other academic writing skills. Attention should be given to annual and academic writing input during CLIL lessons.

In many situations teachers observe that students possess adequate foreign language skills, but they express their lack of proficiency. This often happens because they lack the confidence to use English: "Some students find it challenging to participate because they lack confidence in their language proficiency level" (R1); "I see that the overwhelming majority of Higher Education students with whom I have worked in moments of teaching content through a Foreign Language, as well as Integration of Content and Language, had sufficient fluency in that language to participate in the proposed activities, contrary to what often the students themselves advocated"; "any problems with student participation in classes were rarely due to the fact that their language level was not sufficient" (R4). Teachers are highlighting essentially the lack of familiarity of students with bilingual learning, which may be overcome through consistent sustained practise. It follows that teachers must employ strategies that can assist and motivate their students to use English in concrete academic and pro-professional situations more often. Bilingual education, particularly CLIL, could be the solution as it is a flexible and student-centred approach.

The training needs of teachers and students is another theme which emerges from data. In the interviewees' opinion, students' language difficulties could be addressed with an increase in the number of hours of classes taught in English, either before students enter HE or through the creation of ESP CUs: "To overcome the difficulties faced by students who feel intimidated to participate, it would be necessary to increase the number of hours or the intensity of English teaching, preferably during pre-higher education periods or through specialized curricular units focused on English for specific purposes" (R1); "I believe that it would be very important to encourage greater use of bilingual teaching in the classroom context" (R5). Teachers believe that ICLHE/CLIL can help improve students' language skills. If content classes are taught in English, learners will be exposed to language more hours which can help to increase their linguistic skills and their confidence in using them more proficiently.

Research confirms improvement in students' linguistic competence through continued practise. In Lasagabaster and Doiz's (Lasagabaster & Doiz, 2016) study, students argued their language skills improved more significantly than in regular English as a Foreign Language (EFL) classes.

Lecturers claim that additional training would be beneficial as a strategy of continued self-improvement. They also wish training to concentrate on teaching methodologies, language, and the use of digital online technologies for teaching purposes: "it would be beneficial to participate in pedagogy trainings, particularly those directed to teachers who want to teach content in English" (R1); "knowledge and command of English language are the essential aspects I would like to improve" (R2); "the most important training would be, not so much in the English, but new technologies and platforms available on the internet. Take even greater advantage of the Moodle platform and others" (R3). This teachers' concern may suggest they are open to new teaching approaches, which can be a good argument for ICLHE/CLIL implementation.

Instructors refer using similar methods and materials in English and in Portuguese, which may suggest a superficial linguistic transfer: "I use similar methodologies and materials in any language" (R2); "When I teach, I do it the same way in English as in Portuguese" (R5). Additional training in bilingual education methodologies and on the specific language functions may be necessary for HE teachers to understand what is at stake. It may also imply that certain higher education (HE) teachers may initially opt for ICLHE/CLIL approach to initiate bilingual education, but later they will predominantly focus on EMI.

Dalton Puffer (2013) proposes the concept of cognitive discourse functions, serving as a connection between cognitive processes and content learning objectives, and their linguistic expressions in consistent patterns within classroom discourse. CFDs describe how cognitive processes involved in learning academic content (such as describing, defining, explaining or evaluating) are understood in repeated linguistic models in the classroom.

IPCB lecturers' observations may reveal they need additionally CLIL training to learn how CFDs apply to CLIL practice.

Contrariwise to research where instructors start using EMI and later experiment with the ICLHE/CLIL approach, in the specific context of IPCB there are no courses taught in a foreign language. Consequently, lecturers first contact to teach in a foreign language, in this case English, is with the ICLHE/CLIL approach. Thus, when teachers are familiarized with CLIL they may feel more independent and want to try EMI (even though they may already use in Erasmus teaching mobilities).

Teachers believe, as it was previously argued, that ongoing training related with bilingual education would be beneficial. They also mention struggling to adapt bilingual education methodologies to highly technical classes involving extensive calculation and laboratory work: "in more advanced classes, it becomes a little more difficult, because these are curricular units with a very large laboratory and calculation component" (R6). This concern may show that initial and ongoing training to help teachers before and during the implementation stages can be important.

In classes where English is used as the medium of instruction, students often adopt a passive role, remaining in a spectator attitude and showing minimal engagement in the activities: "I strive to design student-centred activities, but in some situations, students adopt a passive role, which makes it challenging to implement this approach effectively" (R6). This type of circumstances may suggest that teachers do not know how to act when unforeseen situations happen when they teach in a foreign language, which may also suggest the need for ongoing training on how to apply and adapt CLIL materials and approaches.

In relation to the personal effort and the time needed to prepare CLIL related classes, some teachers also say that they know some colleagues who completely refuse to teach in English: "I do know colleagues who refuse to teach in a foreign language, but because they struggle with English" (R8). Refusing to use another language for instruction at the HEI may be an obstacle to deal with when planning further CLIL collaboration. Given the current linguistic student landscape of IPCB, with growing numbers of international students from Portuguese-speaking countries, who have limited or no Knowledge of English, it would be desirable to train teachers to use the CLIL approach with Portuguese as a foreign or second language.

The theme of collaboration between content and language teachers can also be inferred from the data. This cooperation appears to be a viable solution to address the language-related difficulties faced by students: "the collaborative work of content and language teachers would probably have positive results in this field" (R1). The hypothesis of receiving feedback from the language teacher, which was previously mentioned, can also be regarded as a positive aspect of the ICLHE/CLIL approach: "part of this problem would be solved by the participation of language/content teachers in the same classes. That is, the language teacher attends the content classes, and the content teacher attends the technical English classes. I am referring to collaborative work in the planning and design of didactic and teaching materials" (R1). Collaboration may be seen by the content teachers as the solution for their students' language difficulties.

On the other hand, collaboration can also be seen as a means to help the language teacher to address certain content topics as a way to enhance students' motivation for language learning: "topics in which the language teacher can be autonomous" (R6). ICLHE/CLIL and collaboration may be a solution for the difficulties that both content and language lecturers struggle with during classes.

6.5. Main findings in the light of the research questions

After a detailed description and analysis of all collected data throughout this dissertation, only the main findings will be presented guided by the research questions.

The analysis of lecturers' responses (quantitative questionnaire and semi-structured interviews) in relation to RQ1 concerning to what extent does teacher autonomy influence collaboration in ICLHE/CLIL practices in a Portuguese Higher Education Polytechnic shows that IPCB lecturers, in general, perceive having a high degree of autonomy, which they use in several ways related to the teaching process, including collaboration, but that they have limited freedom to decide what to teach as they feel the need to teach specific contents to students.

In the answers to the interview teachers use their autonomy for the purpose of experimenting with new pedagogical approaches and circumstances in collaboration with language teachers. However, QUAN results reveal that IPCB

instructors may not be particularly used to employing their autonomy in order to implement new and innovative teaching approaches. This may suggest that pedagogy is not very high in their agendas and that training in new and innovative methodologies may be useful and may function as a motivation for lecturers to engage in new teaching approaches. Institutional incentives may also be encouraging. Institutional measures that support the implementation of new teaching methodologies can include reducing instructors' working hours, so they have time to engage in collaborative approaches, rewarding research about new and innovative teaching methods developed within the institution and demonstrating student higher motivation for learning and linguistic improvement, among others. However, given the comments offered by QUAL data ICLHE/CLIL practices have to be proven needed in the context, adequate for students' learning outcomes, and effective.

Both IPCB teachers in general and the eight respondents who experimented with CLIL recognize they have autonomy to select, change and adapt teaching resources as well as to change and adapt assessment activities and instruments. Lecturers are essentially concerned with their students' learning and use their autonomy to implement student-centred teaching and learning methodologies that will enhance students' engagement and promote learning improvements, which is a good starting point to build ICLHE approaches on.

IPCB academics who embraced CLIL are tech savvy, which implies their familiarity with emerging digital technologies and their use to support student learning. These teachers may employ approaches that resonate with tech-savvy learners, enhancing their involvement in the learning process. However, educators primarily focus on content and generally lack language sensitivity. Rather than learning language or about language, collaboration with language teachers may help them to develop sensitivity towards language and to be aware of their students' linguistic needs to understand and use content and academic discourse.

IPCB teachers appear to be confident about their language skills which may result from over confidence when it comes to teaching in English; however, they demonstrate a restricted understanding of the instructional language's importance in the teaching process. This drawback may be overcome with

language training and especially with collaborative interdisciplinary work with the language lecturer, who may call attention to pedagogical aspects of bilingual education that content teachers are aware of.

Respondents acknowledge exercising their autonomy to explore bilingual resources for instructional purposes since they realize there are more materials available in English. They assume they possess good language skills, but this does not necessarily mean that they have the right profile to engage in EMI or CLIL. To engage in CLIL or EMI approaches teachers need to develop certain skills besides possessing a good language level, such as collaborating with other colleagues (especially ESP lecturers) or being aware of their students' real needs to learn a specific content in a foreign language.

The analysis on lecturers' responses on research question (RQ2) about to what extent does teacher collegiality influence collaboration in ICLHE/CLIL practices in a Portuguese Higher Education Polytechnic reveals that, in general, IPCB lecturers do not use collegial interactions to engage in teaching collaborations with each other.

On the other hand, educators who collaborated for CLIL provided interesting insights about collegiality and collaboration. Teachers who experimented with CLIL regularly mention collaborative relationships they developed with language lecturers, state that receiving partner's feedback is important for them and that the feedback from the language instructor also helps them to improve their linguistic competence.

The interviewed teachers think that the engagement in ICLHE/CLIL approach enabled them to improve their language skills and that team teaching is an advantage for both teachers and students. They state that teachers' collaboration benefits the creation of materials and application of educational approaches and that ICLHE/CLIL and the collaboration with the language specialist may be the opportunity to teach in a different way.

These lecturers also show a certain feeling of independence from the language teacher after testing the approach and seem to grow more confident with their own language skills. After collaborating with the language lecturer, respondents feel more comfortable in using materials and resources in English, nevertheless

they want to be part of language training courses to improve their linguistic skills. This fact may indicate that collaboration with language teachers made instructors understand that they can improve their skills and that, through interdisciplinary collaboration, they become more independent and autonomous.

The initial CLIL training allowed respondents to adapt their own teaching materials and receive feedback from more experienced teachers in bilingual education. They also think about joining new CLIL training courses in the future, which may indicate they found the experience positive and enriching and that they want to keep using this approach in the future, even though they have realistic claims about how difficult it is to transition from CLIL modules to whole semester CLIL courses.

However, collaborating with colleagues brings some difficulties, specifically about having different perspectives regarding content, what to teach and how, which instructional materials to use and how to prepare them, and how to adapt materials for CLIL. In their perspective, collaboration presents some interpersonal challenges. Pre-existing personal relationships can be seen both as an obstacle or an advantage for collaboration, depending on their way of thinking and character. These teachers believe that in the process of collaboration negotiation and adaption are essential. Nevertheless, learning opportunities arise from collaboration provided the right attitudes of respect and willingness to negotiate are in place.

English can be regarded as a medium for communication in academic or professional settings. For the IPCB teachers who implemented CLIL, collaboration can also be understood as a means to communicate with other academics in different contexts extending beyond the sphere of the pedagogical teaching and training in class. Erasmus mobility programmes are seen as cooperation opportunities in which language skills and fluency can be developed.

CLIL prepares teachers for other challenges in foreign language, such as other events in foreign language, communicating with and teaching Erasmus students, to be part of other scientific events and communicate with other academics. Integrated approaches are added value for students as it enables enriched and effective pedagogical experiences within the context of bilingual education.

The analysis on lecturers' responses on research question (RQ3) about to what extent do teachers and students' language competence influence collaboration in ICLHE/CLIL practices in a Portuguese Higher Education Polytechnic uncovers that globally, respondents believe their linguistic competence to teach in English is adequate/ good. However, teachers acknowledge not focussing on specific language issues. In this context, language is seen as a means to teach the content to students.

On the other hand, lecturers are aware of their language training needs and are willing to join training courses in order to address them. Overall, lecturers perceive their students' linguistic skills in English as hardly adequate for attending classes in English. Instructors show concern with international students' serious linguistic struggles in English.

In fact, lecturers' awareness of their students' language skills and the difficulties they experience while dealing with different levels of students' language proficiency in class are repeatedly mentioned and viewed as challenges. An institutional language policy that supports students with low level skills in English and encourages students to pursue bilingual education as a competitive advantage for the employability market could balance teachers' perceptions and put them into perspective.

The analysis on lecturers' responses on research question (RQ4) about to what extent do teachers' autonomy, collegiality, and L2 competence have a role in teacher collaboration that would allow good ICLHE/CLIL practice in a Portuguese Higher Education Polytechnic reveals that educators self-perceive their weak knowledge about the bilingual education fundamentals since they were not part of the initial training they had.

Teachers perceive the use of new teaching and learning approaches as a way to enhance students' motivation and focus. Although, implementing bilingual education approaches can be challenging since it increases workload and demands extra time and commitment.

Academics are also concerned about covering the syllabus contents. They argue that contents are taught more slowly when using a bilingual approach, which may be seen as an obstacle to ICLHE implementation although there are opportunities

here for learning how to use the CLIL approach with Portuguese as a foreign or second language. However, the respondents are aware of developing skills in a Lingua Franca (English) and favour an approach that is based on tasks students will have to undertake in their future working lives.

IPCB internationalisation policy, turned to PALOP countries, does not help in the implementation of ICLHE/CLIL or EMI. Lecturers argue that they have to deal with students' difficulties to learn in a foreign language and the different English language levels students have, which is also very hard to cope with.

Collegial relationships between IPCB lecturers may be important to foster collaboration. Lecturers have a high degree of autonomy which, in many situations, leads them to work by themselves and alone. Thus, occasions where they mandatorily meet can create opportunities for lecturers to engage in formal or informal conversations that may, in turn, create synergies among lecturers. Situations where academics need to develop collaborative relationships with colleagues from different schools may also be important.

Collegiality may foster a spirit of collective engagement and support. In environments where collegiality is valued, teachers can find easier to balance between their personal pedagogical approaches and contributing to shared goals. Creating an atmosphere of trust and open communication, will ensure that lecturers may be willing to cooperate with each other to achieve personal success and collaborative excellence. As such, situations where lecturers need to work together to achieve common goals should be created and promoted at IPCB.

In the next chapter, conclusions will be drawn by taking into account the outcomes derived from both QUAN and QUAL data.

Chapter 7

Conclusions, Limitations and Further Research

7.1. Conclusions

The decision to embrace this research topic came from my professional involvement with the ICLHE/CLIL approach. Ten years ago, I joined a CLIL pilot project and was part of a CLIL training course which provided me with first insights on the CLIL approach and allowed me to collaborate with content fellows to plan, design and implement ICLHE/CLIL modules.

Since then, my involvement in ICLHE experiences and several types of collaboration, including deep level collaboration, convinced me that the ICLHE/CLIL approach could constitute an innovative and relevant tool to support ESP teachers and content teachers who are facing similar challenges and dealing with analogous difficulties. Additionally, I believe that the ICLHE/CLIL approach can help IPCB teachers to address their specific wants and needs when teaching their content subjects in English.

At an early stage of this thesis, the general aim was defined: to determine the optimal conditions for interdisciplinary teacher collaboration for ICLHE/CLIL in a Polytechnic HE institution in Portugal. Research and intense reading of the specialised literature then took place. The review of the specialised literature is at the basis of the conceptual, contextual, and methodological chapters of this dissertation, and provides the background setting for better understanding the findings and results of this study.

Higher Education Institutions have been increasingly changing during the last decades. European HEIs interest and commitment with the provision of culturally diverse learning opportunities and international environments has created a new working context. HEIs are now using new opportunities for improving quality standards and repositioning themselves, and consequently their students, in a very globalised world. The European Union has a determinant role in all this

process by promoting linguistic diversity for the growing use of a second language (L2), mainly English, for teaching specialized content or for communication purposes.

At tertiary level, however, the introduction of a foreign language as a medium of instruction poses some challenges for lecturers and students, such as both students and teachers' level of English, methodological skills to teach in a foreign language, lecturers' training for teaching content in another language, and cultural issues related with the use of a foreign language to teach, among others.

Known by fostering multilingualism, promoting change and innovation, and improving students' language skills, the ICLHE/CLIL approach has been gaining momentum among European HEIs. Consequently, ICLHE/CLIL has been implemented as an approach to promote IaH, which is known as a way to develop intercultural competence, interactions with local people, to improve communication and language skills and to integrate global and intercultural dimensions in curricular activities (Knight, 2013).

With this in mind, and having established a general aim to this dissertation, specific objectives were established, namely: to research, review and analyse the previous literature about Content and Language Integrated Learning (CLIL), interdisciplinary teacher collaboration for CLIL, teacher autonomy, teacher collegiality, and language competence; and to understand to what extent the four different variables (teachers autonomy, collegiality, collaboration, and language competence) influence and create conditions for interdisciplinary teacher collaboration for CLIL.

To carry out this research study, a questionnaire consisting of several sections adapted from Pearson and Hall (Pearson & Hall, 1993), Shah (2011), Woodland et al. (2013) and Pérez Cañado (Pérez Cañado, 2020a) was sent to all IPCB teaching staff. 194 teachers responded to the questionnaire. A semi-structured interview based and adapted from Pérez Cañado's interview protocol (2020a) was also administered to 8 teachers who had experimented with bilingual education at IPCB. The quantitative questionnaire allowed a global IPCB perspective while the interviews enabled to learn about teachers' in-depth perceptions of bilingual education.

This study aims to provide further knowledge in the field of ICLHE/CLIL, specifically in teacher collaboration for ICLHE. This research adds, grounded on collected data, significant assumptions for good ICLHE/CLIL teacher collaboration. This investigation also hopes to contribute to the Portuguese still scarce research on ICLHE/CLIL, giving light and helping teachers to collaborate with each other.

Globally, the findings of this dissertation show IPCB lecturers' perceptions of their experiences in collaborating for CLIL. Results highlight how teachers perceive their autonomy, collegial relationships, and collaborative interactions. Data also shows instructors' awareness of their training needs on bilingual education/CLIL and language competence. Thus, overall, they might have significance for the implementation of additional internationalisation policies at IPCB by realizing how the four different variables (teachers' autonomy, collegiality, collaboration, and language competence) influence and create conditions for interdisciplinary teacher collaboration for CLIL in Higher Education.

Reflecting on the importance of HEIs developing internationalisation strategies to prepare their students for a globalized job market, this research may be seen as the first step for developing teaching through a foreign language in IPCB, providing students with the necessary resources to work in national or international diverse working environments.

One of the possible strategies to prepare students for a global job market in which they will necessarily need to use English (the Lingua Franca), is to implement ICLHE approaches that will help students to learn the content and the language together. To get to this point several strategies will need to be implemented. First, IPCB lecturers need to acknowledge the benefits of possessing higher language awareness. Organising workshops or seminars where lecturers can firsthand see and discuss the benefits of using a foreign language to teach may be a good way of promoting lecturers' language awareness. Promoting collaborative research groups in which lecturers can exchange ideas and share research findings may also help as well as showing evidence that these new and innovative approaches may help teacher development by increasing confidence, improving instructional strategies, and enhancing student-teacher interactions.

Professional development programs could be specifically designed to provide teachers with strategies to integrate language awareness into their teaching. Training programmes that focus on bilingual approaches and language, with an emphasis on practical applications, should be encouraged. From this training COPs may be created to provide ongoing support and a platform for sharing best practices and resources. These communities may foster a collaborative environment where teachers can learn from each other and develop a shared understanding of the importance of language in teaching and learning. Success stories and case studies from schools and lecturers who have successfully implemented bilingual approaches may be shared within the community.

One of the first things lecturers need to understand about their own bilingual needs is that they should understand the difference between informal language proficiency and academic language skills and that students may be fluent in a language but still face challenges with academic vocabulary and concepts. Lecturers should also be aware of the cultural backgrounds of bilingual students since they need to understand how cultural perspectives influence learning and communication techniques. Furthermore, instructors need to understand that bilingual students may experience a higher cognitive demand when learning new content in a second language and they should design and tailor their lessons.

Some of the key findings of this study are now presented. One of the key findings of this research points to how teachers can use their autonomy to engage in new and innovative projects, which can help the institution to gain visibility and develop its internationalisation strategies. Considering that ICLHE/CLIL is an innovative approach, it can bring some contributions to the reinforcement of a strong internationalisation policy, abroad and at home.

IPCB lecturers are aware of their training needs, namely in the area of bilingual education and in the development of language competence to teach content subjects in English. IPCB lecturers believe that they need to increase their language skills and express the need for professional development initiatives.

IPCB teachers' quantitative questionnaires show that teaching staff do not usually engage in discussions with colleagues about teaching practices, ask for suggestions, teach in teams, or make collective decisions about instructional

practices. Collegial and collaborative relationships are weak and almost inexistent. Respondents' interviews highlight that some kind of institutional incentives and acknowledgement could help and motivate them to engage in time consuming approaches like ICLHE/CLIL.

By promoting professional development programmes that include the training in bilingual education/CLIL and how teachers can collaborate to teach in English, and by creating an incentives policy, IPCB can provide teachers the tools that will also assure IPCB quality services.

Different types of training could be promoted to attend IPCB lecturers' needs. It would be important to start with an introductory module on the principles of bilingual education, including aspects such as the benefits of bilingualism and the importance of language awareness in teaching and learning processes. Training in intercultural competence is also important to prepare teachers to engage with the different cultural backgrounds of their students in bilingual educational settings. Additional training in English language could be provided for lecturers who want to develop the linguistic skills.

Language teachers may play an important role to facilitate language development across the curriculum. They can support content lecturers by co-designing lesson plans, offering strategies for language integration, and providing feedback on language use in content lessons.

Collaboration of content and language lecturers within ICLHE/CLIL approach may help to offer the ideal environment for creating quality learning services at IPCB and diminish the regional impact of being an in-land institution. As an institution capable of generating quality services and knowledge IPCB should align with regional development strategies for positioning itself as a quality and eligible institution in Portugal. Collaboration of content and language teachers may support subject specialists to engage in teaching in a foreign language, as they receive language advise and support, and feedback on teaching practices.

The implementation of the ICLHE/CLIL approach at IPCB can help students to be able to go abroad and benefit from an international education experience and increase the number of learners receiving an international education at home. Engaging teachers and students in collaborative relationships and experiences

can enhance the institution's visibility by offering international and quality services to students choosing IPCB.

Thus, this investigation opens doors for implementing and expanding the existing collaborative relationships among IPCB lecturers. The findings of this study reveal that, if adequate conditions (namely institutional support, recognition and incentives) are created academics may be willing to invest time and effort in improving their teaching practices and attending their students' needs. Creating opportunities for lecturers to have contact with ICLHE/CLIL and EMI approaches (training, research projects, sharing previous experiences) and for students to improve and develop their foreign language skills may foster collaboration. In addition, in spite of all difficulties lecturers may face, collaboration among teachers and the integrated teaching of content and language may have a place in HE contexts, even if not a prominent one.

We may also shed some light on what the ideal model of collaboration for ICLHE at IPCB would be, the development of interdisciplinary collaboration through the creation of COPs, where language and content teachers could engage in joint curriculum design, co-teaching practices and expertise exchange. This model should ideally consider different teamwork stages, where lecturers from different areas jointly plan, design and create pedagogical activities in which language learning is integrated with content instruction. In order to do that, collaborative digital tools can be used to enhance communication, resources sharing and ideas exchanging. Regular team meeting to discuss teaching practices and integrate feedback to attend student outcomes would ensure the model's success over time. This type of approaches can enhance students' learning experience as well as promote a culture of continuous improvement and innovation among faculty members at IPCB.

Finally, collaborative approaches for ICLHE may also be scalable to other Portuguese HEIs since they are flexible and can be adapted to each institution's context. When ICLHE is seen as a way to increase internationalisation and students' preparation for global jobs markets, adequate conditions may be created, and its implementation can be a reality among Portuguese HEIs.

7.2. Limitations

As any research, this study presents some limitations. One of the major limitations is related with the fact that there is no ICLHE/CLIL or EMI provision at IPCB, at the moment. The only classes taught in English, besides the ESP lectures, are those with Erasmus students present.

The lack of ICLHE/CLIL or EMI provisions at IPCB limits the opportunity to explore how content subjects may be taught and learned in a second language. This could provide insights into bilingual education practices, challenges, and outcomes in this research. Thus, with only ESP lectures and classes with Erasmus students being taught in English, this research might face limitations in comparing the effects of language instruction in students' engagement, academic performance, and content command.

Part of the value in evaluating ICLHE/CLIL or EMI provision is to assess how institutions adapt to and benefit from educational internationalisation. Without such provisions at IPCB, this research study may miss the opportunity to evaluate how the English language facilitates international collaboration, student and faculty mobility, among others. The lack English-taught courses beyond those with Erasmus students may limit the number of participants in this research. It limits the study to a smaller, less varied group of students and lecturers, which could affect the generalisation of the findings to other contexts where English is more extensively used as a medium of instruction.

One other limitation is related with the sample of the semi-structured interviews, which includes only 8 lecturers within the whole IPCB institution. It is a very small sample, but these are the educators who experimented with ICLHE/CLIL approach within the whole institution. Thus, it was not possible to expand the sample. However, it can raise awareness of this type of projects and of ICLHE/CLIL approach.

Qualitative data analysis software (N-Vivo) was used to analyse the qualitative data collected through the semi-structured interviews. However, as they were only eight respondents, a content analysis was used to complement data and try to address the research gap created by the small sample. However, sentiment

analysis was not used as data were not very encouraging due to the size of the sample.

Research on our CLIL implementations was carried out at IPCB, using small sample sizes, which is a limitation. To obtain more reliable results, further research with larger sample sizes needs to be conducted. However, we have found that, with CLIL, students' language skills can improve as well as their motivation to learn through a foreign language (Gaspar et al., 2016; Régio et al., 2019a; Sampaio et al., 2021).

In the qualitative analysis a new code emerged, CLIL/ Bilingual Education. This might be seen as a limitation to the quantitative proposed research model. However, it may also represent an opportunity for further research involving the analysis of CLIL/Bilingual Education in the interrelations among the variables of the quantitative model.

Ultimately, the answers to the quantitative questionnaire could be improved. However, this is a not a mandatory questionnaire and it depends on lecturers' willingness to answer. The concentration on a unique HEI in Portugal, with no tradition of bilingual education is also a limitation.

Conducting interviews to students about their experience with ICLHE and their language competence would have been interesting. However, due to time constrains it was not possible to do it.

7.3. Further research

At the end of this dissertation project some future research can be suggested.

In the hope that ICLHE/CLIL approach is implemented through IPCB, the sample of the semi-structured interviews could be expanded and data could be analysed by comparing data from different schools and scientific areas. Wider number of

semi-structured interviews would produce more data providing a complete and more precise portrait of the institution.

Improving the analysis of the qualitative data with corpus tools, such as SketchEngine, or using sentiment analysis would give another perspective to the results.

One other proposal for future investigation includes a longitudinal study involving the same research context to assess how autonomous, collegial, and collaborative behaviours evolve within IPCB lecturers, including the ones not involved in ICLHE/CLIL.

During several years of ICLHE/CLIL implementation data, which was not used in this research, was gathered from students. Their perceptions could be explored and analysed, thus complementing teachers' perceptions and understand if this case study might be scalable to other institutions in Portugal.

Policy makers could also reflect an interesting perspective on this study, throwing light into possible ways of expanding the number of teachers experimenting with ICLHE/CLIL. Analysing their strategic views would probably help to expand the number of lecturers and students conducting ICLHE/CLIL approaches.

Finally, a questionnaire specifically developed to assess teacher autonomy, collegiality and collaboration at Higher Education, would help to analyse if this experience might be scalable to other HEIs. It could also help to identify what type of institutions (universities, polytechnics, public, private, on the coast or in land) would have suitable conditions to expand this study.

References

Abernethy, A. M. (1992). The Information Content of Newspaper Advertising. *Journal of Current Issues \& Research in Advertising*, *14*(2), 63–68. https://doi.org/10.1080/10641734.1992.10504989

Adhikari, S. (2021). *Practice of Teacher Autonomy for Professional Development*. Tribhuvan University.

Aguilar, M. (2017). Engineering lecturers' views on CLIL and EMI. *International Journal of Bilingual Education and Bilingualism*, *20*(6), 722–735. https://doi.org/10.1080/13670050.2015.1073664

Aguilar, M., & Rodríguez, R. (2012). Lecturer and Student Perceptions on CLIL at a Spanish University. *International Journal of Bilingual Education and Bilingualism*, *15*(2), 183–197. https://doi.org/10.1080/13670050.2011.615906

Airey, J. (2016). EAP, EMI or CLIL? In K. Hyland & P. Shaw (Eds.), *The Routledge handbook of English for academic purposes* (pp. 95–107). Routledge.

Akyel, A. (2000). Collaboration to Explore Teaching: A Case Study Report. *TESL Canada Journal*, *18*(1), 58–74. https://doi.org/10.18806/tesl.v18i1.900

Alejo-González, R. (2018). The place of language in English-medium instruction. *CIEB 2018*.

Alejo, R., & Piquer-Píriz, A. (2016). Urban vs. rural CLIL: an analysis of input-related variables, motivation and language attainment. *Language, Culture and Curriculum*, *29*(3), 245–262. https://doi.org/10.1080/07908318.2016.1154068

Alhasani, M., & Stojković, N. (2017). Searching for the Golden Average Between ESP and CLIL. *Journal of Teaching English for Specific and Academic Purposes*, *5*(2), 397–412. https://doi.org/10.22190/JTESAP1702397A

Alin, A. (2010). Multicollinearity. *WIREs Computational Statistics*, *2*(3), 370–374. https://doi.org/10.1002/wics.84

Alleman, N. F., & Haviland, D. (2017). "I expect to Be Engaged as an Equal": Collegiality Expectations of Full-time, Non-tenure-track Faculty Members. *Higher Education*, *74*(3), 527–542. https://doi.org/10.1007/s10734-016-0062-4

Álvarez-Domínguez, C., Postigo-Fuentes, A. Y., & Chillón, P. (2023). Perceptions of Linguistic and Professional Competences of Postgraduate Students in Bilingual Education. *Journal of Language Teaching and Research*, *14*(4), 1041–1048. https://doi.org/10.17507/jltr.1404.22

Amaral, A., Tavares, O., & Santos, C. (2013). Higher Education Reform in Portugal: A Historical and Comparative Perspective of the New Legal Framework for Public Universities. *Higher Education Policy*, *26*(1), 5–24. https://doi.org/10.1057/hep.2012.29

Ambrose, S., Bridges, M., DiPietro, M., Lovett, M., & Norman, M. (2010). *How learning works: seven research-based principles for smart teaching*. Jossey-Bass. https://doi.org/10.1002/mop.21454

Ament, J. R., & Pérez-Vidal, C. (2015). Linguistic Outcomes of English Medium Instruction Programmes in Higher Education: A study on Economics Undergraduates at a Catalan University. *Higher Learning Research Communications*, *5*(1), 47–68. https://doi.org/10.18870/hlrc.v5i1.239

Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-step Approach. *Psychological Bulletin*, *103*(3), 411–423. https://doi.org/10.1037//0033-2909.103.3.411

Anderson, L. W. (1987). The Decline of Teacher Autonomy: Tears or Cheers? *International Review of Education / Internationale Zeitschrift Für Erziehungswissenschaft / Revue Internationale de l'Education*, *33*(3), 357–373. http://www.jstor.org/stable/3444232

Arau Ribeiro, M. D. C., Gonçalves, A., Moreira Silva, M., Morgado, M., & Coelho, M. (2017). The State of the ReCLes. pt CLIL training project. *Languages and the Market: A ReCLes. Pt Selection of International Perspectives and Approaches.*, 115–120.

Arau Ribeiro, M. D. C., Silva, M., Morgado, M., & Coelho, M. (2015). Promoting dynamic CLIL courses in portuguese Higher Education: from design and training to implementation. *Psychological and Creative Approaches to Language Teaching*, 30–38.

Arau Ribeiro, M. del C., Morgado, M., Chumbo, I., Gonçalves, A., Silva, M., & Coelho, M. (2018). The ReCLes. pt CLIL project in practice: Teaching with results in Higher Education. *Culturas, Identidades e Litero-Línguas Estrangeiras*, 63–80.

Arau Ribeiro, M. del C., Morgado, M., Gaspar, M., & Régio, M. (2019). Teacher Training for CLIL in Higher Education Through Blended Learning. In M. L. Carrió-Pastor (Ed.), *Teaching Language and Teaching Literature in Virtual Environments* (pp. 203–225). Springer Nature Singapore. https://doi.org/10.1007/978-981-13-1358-5_11

Arau Ribeiro, M. del C., Silva, M., Morgado, M., & Coelho, M. (2016). Promoting Dynamic CLIL in Portuguese Higher Education: From Design and Training to Implementation. *CASALC Review 2015-2016*, *5*(2), 30–38. https://www.cjv.muni.cz/cs/casalc-review-2015-2016-vol-5-no-2/

Arribas, M. (2016). Analysing a Whole CLIL School: Students' Attitudes, Motivation, and Receptive Vocabulary Outcomes. *Latin American Journal of Content & Language Integrated Learning*, *9*(2), 267–292. https://doi.org/10.5294/laclil.2016.9.2.2

Arthur, L. (2016). Communities of Practice in Higher Education: Professional Learning in an Academic Career. *International Journal for Academic Development*, *21*(3), 230–241. https://doi.org/10.1080/1360144X.2015.1127813

Asomoza, A. N. (2015). Students' Perceptions of the Impact of CLIL in a Mexican BA Program. *PROFILE Issues in Teachers' Professional Development*, *17*(2), 111–124. https://doi.org/https://doi.org/10.15446/profile.v17n2.47065

Averill, R. M., & Major, J. (2020). What Motivates Higher Education Educators to Innovate? Exploring Competence, Autonomy, and Relatedness – and Connections with Wellbeing. *Educational Research*, *62*(2), 146–161. https://doi.org/10.1080/00131881.2020.1755877

Babocká, M. (2015). Assessment in CLIL classes. In *CLIL in Foreign Language Education: e-textbook for foreign language teachers* (pp. 176–188). Constantine the Philosopher University. https://doi.org/10.17846/CLIL.2015.176-188

Baetens Beardsmore, H. (2009). Lnguage Promotion by European Supra-national Institutions. In O. García (Ed.), *Bilingual education in the 21st Century: a global perspective* (pp. 197–217). NJ: Wiley-Blackwell.

Bain, K. (2004). *What the best college students do*. Hervard University Press. https://doi.org/10.1080/07294360.2013.764562

Baker, C. (2006). *Foundations of Bilingua Education and Bilingualism*. Multilingual Matters.

Baker, C. (2010). Bilingual Education. *The Oxford Handbook of Applied Linguistics, (2 Ed.)*, *September 2018*, 1–11. https://doi.org/10.1093/oxfordhb/9780195384253.013.0020

Ball, P. (2018). Innovations and Challenges in CLIL Materials Design. *Theory Into Practice*, *57*(3), 222–231. https://doi.org/10.1080/00405841.2018.1484036

Ball, P., & Lindsay, D. (2013). Language Demands and Support for English-Medium Instruction in Tertiary Education. Learning from a Specific Context. In A. Doiz & D. Lasagabaster (Eds.), *English-medium Instruction at Universities: Global Challenges* (pp. 44–62). Buffalo. https://doi.org/https://doi.org/10.21832/9781847698162-007

Bardin, L. (2016). *Análise de Conteúdo*. Edições 70 Lda/Almedina Brasil.

Barfield, A. (2016). Collaboration. *ELT Journal*, *70*(2), 222–224.

https://doi.org/10.1093/elt/ccv074

Barnes, L. L. B., Agago, M. O., & Coombs, W. T. (1998). Effects of Job-related Stress on Faculty Intention to Leave Academia. *Research in Higher Education*, *39*(4), 457–469. https://doi.org/10.1023/A:1018741404199

Barry, J., Chandler, J., & Clark, H. (2001). Between the Ivory Tower and the Academic Assembly Line. *Journal of Management Studies*, *38*(1), 88–101. https://doi.org/10.1111/1467-6486.00229

Bartik, K., Maerten, C., Tudor, I., & Valcke, J. (2009). *A discussion brief of content and language integrated learning (CLIL) at the Faculty of Applied Sciences*.

Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, *13*(4), 544–559. https://doi.org/10.46743/2160-3715/2008.1573

Becher, T., & Trowler, P. (2001). *Academic Tribes And Territories: Intellectual Enquiry and the Culture of Disciplines*. Open University Press.

Beelen, J., & Jones, E. (2015). Redefining Internationalization at Home. In A. Curaj, L. Matei, R. Pricopie, J. Salmi, & P. Scott (Eds.), *The European Higher Education Area: Between Critical Reflections and Future Policies* (pp. 59–72). Springer International Publishing. https://doi.org/10.1007/978-3-319-20877-0_5

Bell, A., & Thomson, K. (2018). Supporting Peer Observation of Teaching: Collegiality, Conversations, and Autonomy. *Innovations in Education and Teaching International*, *55*(3), 276–284. https://doi.org/10.1080/14703297.2016.1212725

Bellés-Fortuño, B. (2021). CLIL Assessment: Accommodating the Curricular Design in HE. In M. L. Carrió-Pastor & B. Bellés Fortuño (Eds.), *Teaching Language and Content in Multicultural and Multilingual Classrooms: CLIL and EMI Approaches* (pp. 293–314). Springer International Publishing. https://doi.org/10.1007/978-3-030-56615-9_11

Bengtsson, M. (2016). How to Plan and Perform a Qualitative Study Using Content Analysis. *NursingPlus Open*, *2*, 8–14. https://doi.org/https://doi.org/10.1016/j.npls.2016.01.001

Bennett, R., & Kane, S. (2014). Factors Affecting University Teaching Team Effectiveness in Detached Working Environments. *Journal of Further and Higher Education*, *38*(3), 400–426. https://doi.org/10.1080/0309877X.2012.722201

Benson, P. (2000). Autonomy as a Learners and Teachers Right. In B. Sinclair, I. McGrath, & T. Lamb (Eds.), *Learner autonomy, teacher autonomy* (pp. 111–117). Longman.

Benvenuto, G., Lastrucci, E., & Infante, D. (2009). The Effects of Clil from the Perspective of Experienced Teachers. In P. D. Marsh & and M. J. F.-M. Mehisto, D. Wolff, R. Aliaga, T. Asikainen (Eds.), *CLIL practice: Perspectives from the field* (Issue January 2009, pp. 156–163). S. Hughes and G. Lange.

Berelson, B. (1952). Content Analysis in Communication Research. In *Content Analysis in Communication Research*. Free Press.

Berry, J. (2012). Teachers' Professional Autonomy in England: Are Neo-liberal Approaches Incontestable? *Forum*, *54*(3), 397–409. https://doi.org/10.2304/forum.2012.54.3.397

Bertaux, P., Carmel, M. C., Frigols-Martin, M. J., & Mehisto, P. (2010). *The CLIL Teacher's Competences Grid*. http://tplusm.net/CLIL_Competences_Grid_31.12.09.pdf

Berthoud, A. C., Grin, F., & Lüdi, G. (Eds.). (2013). *Exploring the Dynamics of Multilingualism: The DYLAN project*. John Benjamins Publishing Company.

Biber, D., Gray, B., & Poonpon, K. (2011). Should We Use Characteristics of Conversation to Measure Grammatical Complexity in L2 Writing Development? *TESOL Quarterly*, *45*(1), 5–35. https://doi.org/https://doi.org/10.5054/tq.2011.244483

Biçaku, R. Ç. (2011). CLIL and Teacher Training. *Procedia - Social and Behavioral Sciences*, *15*, 3821–3825. https://doi.org/10.1016/j.sbspro.2011.04.379

Biordi, D. L., & Nicholson, N. R. (2013). Social isolation. In *Chronic illness: Impact and intervention*

(pp. 85–115). Jones and Bartlett Sudbury, MA.

Birnbaum, R. (1988). *How Colleges Work: The Cybernetics of Academic Organization and Leadership*.

Birnbaum, R., & Edelson, P. J. (1989). Book Review: How Colleges Work: The Cybernetics of Academic Organization and Leadership. *The Journal of Continuing Higher Education*, 37(3), 27–29. https://doi.org/10.1080/07377366.1989.10401184

Bissessar, C. (2022). The role of virtual community of practice in alleviating social and professional isolation during emergency remote teaching. *Equity in Education \& Society*, 1(1), 114–125. https://doi.org/10.1177/27526461211068512

Bloom, B. S. (Ed.). (1956). *Taxonomy of Educational Objectives*. Longmans.

Bozdogan, D., & Karhdag, B. (2013). A Case of CLIL Practice in the Turkish Context: Lending an ear to Students. *Asian EFL Journal Research Articles*, 15(4), 49–69.

Brandon, T., & Charlton, J. (2011). The Lessons Learned from Developing an Inclusive Learning and Teaching Community of Practice. *International Journal of Inclusive Education*, 15(1), 165–178. https://doi.org/10.1080/13603116.2010.496214

Bransford, J., Brown, A., & Cocking, R. (Eds.). (2000). *How People Learn: Brain, Mind, Experience, and School: Expanded Edition*. The National Academies Press. https://doi.org/10.17226/9853

Brás, G. R. (2021). Awarding PhD Powers to Polytechnics: An Academic Trap? *SAGE Open*, 11(2), 21582440211020744. https://doi.org/10.1177/21582440211020743

Breidbach, S. (2003). Plurilingualism, Democratic Citizenship in Europe and the Role of English. *Reference Studies*, 2004(12/09). http://www.coe.int/T/E/Cultural_Co-operation/education/Languages/Language_Policy/Policy_development_activities/Studies/BreidbachEN.pdf?L=E

Breslin, M., & Buchanan, R. (2008). On the Case Study Method of Research and Teaching in Design. *Design Issues*, 24(1), 36–40. https://doi.org/10.1162/desi.2008.24.1.36

Bruton, A. (2013). CLIL: Some of the Reasons Why... and Why Not. *System*, 41(3), 587–597. https://doi.org/10.1016/j.system.2013.07.001

Bryant, L. H., Niewolny, K., Clark, S., & Watson, C. E. (2014). Complicated Spaces : Negotiating Collaborative Teaching and Interdisciplinarity in Higher Education. *The Journal of Effective Teaching*, 14(2), 83–101.

Buchbinder, H. (1993). The Market Oriented University and the Changing Role of Knowledge. *Higher Education*, 26(3), 331–347. https://doi.org/10.1007/BF01383490

Buckingham, L. R., López-Hernández, A., & Strotmann, B. (2021). Learning by Comparison: The Benefits of Co-Teaching for University Professors' Professional Development. *Frontiers in Education*, 6. https://doi.org/10.3389/feduc.2021.776991

Burnes, B., Wend, P., & By, R. T. (2014). The changing Face of English Universities: Reinventing Collegiality for the Twenty-first Century. *Studies in Higher Education*, 39(6), 905–926. https://doi.org/10.1080/03075079.2012.754858

Byram, M., Nichols, A., & Stevens, D. (2001). *Developing Intercultural Competence in Practice*. Multilingual Matters.

Callon, M., Courtial, J.-P., Turner, W. A., & Bauin, S. (1983). From Translations to Problematic Networks: An Introduction to Co-word Analysis. *Information (International Social Science Council)*, 22(2), 191–235. https://doi.org/10.1177/053901883022002003

Canadian Association of University Teachers. (2021). *Collegiality*. https://www.caut.ca/about-us/caut-policy/lists/caut-policy-statements/policy-statement-on-collegiality

Caruth, G. D. (2013). Demystifying Mixed Methods Research Design: A Review of the Literature. *Mevlana International Journal of Education*, 3(2), 112–122. https://doi.org/10.13054/mije.13.35.3.2

Castellano-Risco, I. (2018). Receptive Vocabulary and Learning Strategies in Secondary School

CLIL and non-CLIL Learners. *Onomázein Revista de Linguistica, Filología y Traducción*, *40*, 28–48. https://doi.org/10.7764/onomazein.40.02

Castle, K. (2004). The Meaning of Autonomy in Early Childhood Teacher Education. *Journal of Early Childhood Teacher Education*, *25*(1), 3–10. https://doi.org/10.1080/1090102040250103

Cavalheiro, L., Guerra, L., & Pereira, R. (Eds.). (2021). *Multilingual Classrooms*. Húmus.

Ceia, C., & Hurst, N. (2018). Foreign Language Education in Portuguese Higher Education Institutions: The State of Play. *E-TEALS*, *8*(1), 27–42. https://doi.org/10.2478/eteals-2018-0002

Cenoz, J. (2015). Content-based instruction and content and language integrated learning: the same or different? *Language, Culture and Curriculum*, *28*(1), 8–24. https://doi.org/10.1080/07908318.2014.1000922

Cenoz, J., Genesee, F., & Gorter, D. (2014). Critical Analysis of CLIL: Taking Stock and Looking Forward. *Applied Linguistics*, *35*(3), 243–262. https://doi.org/10.1093/applin/amt011

Centellas, A., Emma, R., Milne, D., Fernández Costales, A., & Pavón Vázquez, V. (2016). *Linguistic Policy Framework Document for the Internationalisation of the Spanish University System Language Policy Sub-working Group CRUE-IC* (Issue October).

Cesaria, A., Kemal, E., & Adnan, M. (2023). How Does The Bilingualism Improve the Student English Ability: A Discourse Case Study on Higher Education. *Journal of Pragmatics and Discourse Research*, *3*(2), 122–136. https://doi.org/10.51817/jpdr.v3i2.629

Charles, M., & Pecorari, D. (2016). *Introducing English for Academic Purposes*. Routledge.

Chin, W. W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. In *Marcoulides, G. A, Modern Methods for Business Research* (pp. 295–336). Lawrence Erlbaum Associates. https://doi.org/10.1016/j.aap.2008.12.010

Chin, W. W. (2010). How to Write Up and Report PLS Analyses. In & H. W. (Eds. . In V. Esposito Vinzi, W. W. Chin, J. Henseler (Ed.), *Handbook of Partial Least Squares Concepts, Methods and Applications* (pp. 655–690). Springer. https://doi.org/10.1007/978-3-540-32827-8

Chin, W. W., & Newsted, P. R. (1999). Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares. In R. H. Hoyle (Ed.), *Statistical Strategies for Small Sample Research* (1st ed., Issue March, pp. 307–341). SAGE Publications, Inc.

Chong, S., Geare, A., & Willett, R. J. (2018). Change in a New Zealand University 1985–2010: Views of Collegiality and Managerialism. *Educational Management Administration and Leadership*, *46*(6), 926–941. https://doi.org/10.1177/1741143217717275

Chostelidou, D., & Griva, E. (2014). Measuring the Effect of Implementing CLIL in Higher Education: An Experimental Research Project. *Procedia - Social and Behavioral Sciences*, *116*, 2169–2174. https://doi.org/https://doi.org/10.1016/j.sbspro.2014.01.538

Chyung, S. Y. (Yonnie), Roberts, K., Swanson, I., & Hankinson, A. (2017). Evidence-Based Survey Design: The Use of a Midpoint on the Likert Scale. *Performance Improvement*, *56*(10), 15–23. https://doi.org/https://doi.org/10.1002/pfi.21727

Cipriano, R. E., & Buller, J. L. (2012). Rating Faculty Collegiality. *Change: The Magazine of Higher Learning*, *44*(2), 45–48. https://doi.org/10.1080/00091383.2012.655219

Clark, C. M. (2013). National Study on Faculty-to-faculty Incivility: Strategies to Foster Collegiality and Civility. *Nurse Educator*, *38*(3), 98–102. https://doi.org/10.1097/NNE.0b013e31828dc1b2

Clarke, C., & Reid, J. (2013). Foundational Academic Development: Building Collegiality Across Divides? *International Journal for Academic Development*, *18*(4), 318–330. https://doi.org/10.1080/1360144X.2012.728529

Claypool, V. H., & Mershon, C. (2016). Does Diversity Matter? Evidence From a Survey of Political Science Faculty. *Politics, Groups, and Identities*, *4*(3), 483–498. https://doi.org/10.1080/21565503.2016.1170707

Coelho, M. (2022). *El Potencial del Enfoque AICLE Para el Profesorado de Educación Superior en Portugal: Un Análisis de Necesidades Lingüisticas en el Instituto Politécnico de Portalegre*. Universidad de Extremadura.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Lawrence Erlbaum.

Cole, M. (1996). Cultural Psychology: A Once and Future Discipline. In *Cultural psychology: A once and future discipline.* Harvard University Press.

Coleman, J. A. (2006). English-medium Teaching in European Higher Education. *Language Teaching*, *39*(1), 1–14. https://doi.org/10.1017/S026144480600320X

Comstock, G., Christen, F. G., Fisher, M. L., Quarles, R. C., & Richards, W. D. (1975). *Television and Human Behavior: Tomorrow's Research in Mass Communication*. The Rand Corporation.

Congdon, G., & French, P. (1995). Collegiality, Adaptation and Nursing Faculty. *Journal of Advanced Nursing*, *21*(4), 748–758. https://doi.org/10.1046/j.1365-2648.1995.21040748.x

Contreras, J. D. (1997). *La Autonomía del Profesorado*. Ediciones Morata.

Cook, L., & Friend, M. (1991). Principles for the Practice of Collaboration in Schools. *Preventing School Failure: Alternative Education for Children and Youth*, *35*(4), 6–9. https://doi.org/10.1080/1045988x.1991.9944251

Cookson, P. W. (2005). The Challenge of Isolation,. Professional Development - Your first Year. *Teaching Pre K-8*, *36*(2).

Costa, F., & D'Angelo, L. (2011). CLIL: A Suit for All Seasons. *Latin American Journal of Content and Language Integrated Learning*, *4*(1), 1–13. https://doi.org/10.5294/laclil.2011.4.1.1

Cox, M. D. (2001). Faculty Learning Communities: Change Agents for Transforming Institutions into Learning Organizations. In *To Improve the Academy* (Vol. 19, Issue 1, pp. 69–93). https://doi.org/10.1002/j.2334-4822.2001.tb00525.x

Coyle. (2015). Strengthening integrated learning: towards a new era for pluriliteracies and intercultural learning. *LACLIL (Latin American Journal of Content and Language Integrated Learning)*, *8*(2), 84–103. https://doi.org/10.5294/laclil.2015.8.2.2

Coyle, D. (1999). Supporting students in content and language integrated contexts: planning for effective classrooms. In J. Masih (Ed.), *Learning through a Foreign Language: Models, Methods and Outcomes.* (pp. 46–62). http://files.eric.ed.gov/fulltext/ED454735.pdf

Coyle, D. (2002). Relevance of CLIL to the European Commission's Language Learning Objectives. In D. Marsh (Ed.), *CLIL/EMILE - The European dimension: Actions, trends and foresight potential* (pp. 27–28). European Comission.

Coyle, D. (2006). Content and Language Integrated Learning: Motivating Learners and Teachers. *Scottish Languages Review*, *13*(5), 1–18.

Coyle, D. (2007). Content and language integrated learning: Towards a connected research agenda for CLIL pedagogies. *International Journal of Bilingual Education and Bilingualism*, *10*(5), 543–562. https://doi.org/10.2167/beb459.0

Coyle, D. (2010). Content and language integrated learning: Motivating learners and teachers. *Handbook of Foreign Language Communication and Learning*, 545–572. https://doi.org/10.4324/9780429356803-14

Coyle, D. (2013). Listening to Learners: An Investigation Into "Successful Learning" Across CLIL Contexts. *International Journal of Bilingual Education and Bilingualism*, *16*(3), 244–266. https://doi.org/10.1080/13670050.2013.777384

Coyle, D. (2018). The Place of CLIL in (Bilingual) Education. *Theory into Practice*, *57*(3), 166–176. https://doi.org/10.1080/00405841.2018.1459096

Coyle, D., Halbach, A., Meyer, O., & Schuck, K. (2018). Knowledge ecology for conceptual growth: teachers as active agents in developing a pluriliteracies approach to teaching for learning (PTL). *International Journal of Bilingual Education and Bilingualism*, *21*(3), 349–

365. https://doi.org/10.1080/13670050.2017.1387516

Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Content and Language Integrated Learning*. Cambridge University Press.

Creswell, J. (2009). *Research Design. Qualitative, Quantitaive and Mixed Methods Approaches* (Third Edit). Sage.

Creswell, J., Clark, V., Gutmann, M., & Hanson, W. (2003). Advanced Mixed Methods Research Designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social & Behavioral Research* (pp. 209–240). SAGE Publications.

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and Conducting Mixed Methods Research* (Third Edit). SAGE Publications.

Cummins, J. (1998). Immersion Education for the Millennium: What We Have Learned from 30 Years of Research on Second Language Immersion Ontario Multilingual Education View project Parents in the Library View project. In M. R. Childs & R. M. Bostwick (Eds.), *Learning through two languages: Research and practice. Second Katoh Gakuen International Symposium on Immersion and Bilingual Education* (Issue January 2000, pp. 34–47). Katoh Gakuen, Japan.

Cummins, J., & Corson, D. (1997). *Bilingual Education: 5*. Springer Science & Business Media.

Cummins, J. D. (1999). *BICS and CALP: Clarifying the Distinction.*

Dafouz-milne, E., & Sánchez García, D. (2013). ' Does everybody understand ?' Teacher questions across disciplines in English-mediated university lectures : An exploratory study. *Language Value*, *5*(1), 129–151. https://doi.org/10.6035/LanguageV.2013.5.7

Dafouz, E. (2018). English-medium Instruction and Teacher Education Programmes in Higher Education: Ideological Forces and Imagined Identities at Work. *International Journal of Bilingual Education and Bilingualism*, *21*(5), 540–552. https://doi.org/10.1080/13670050.2018.1487926

Dafouz, E., Núñez, B., Sancho, C., & Foran, D. (2007). Integrating CLIL at The Tertiary Level: Teachers' and Students' Reactions. *Diverse Contexts Converging Goals. Content and Language Integrated Learning in Europe*, *March 2016*, 91–102.

Dafouz, E., & Smit, U. (2014). Towards a Dynamic Conceptual Framework for English-Medium Education in Multilingual University Settings. *Applied Linguistics*, *37*(3), 397–415. https://doi.org/10.1093/applin/amu034

Dafouz, E., & Smit, U. (2020). ROAD-MAPPING English Medium Education in the Internationalised University. In *ROAD-MAPPING English Medium Education in the Internationalised University* (First Edit). Palgrave Pivot Cham. https://doi.org/10.1007/978-3-030-23463-8

Dale, R. (1982). Education and the Capitalist State: Contributions and Contradictions. In M. W. Apple (Ed.), *Cultural and Economic Reproduction in Education: Essays on Class, Ideology and the State* (Ideology a, pp. 127–161). Routledge.

Dalton-Puffer, C. (2011). Content-and-Language Integrated Learning: From Practice to Principles? *Annual Review of Applied Linguistics*, *31*(May), 182–204. https://doi.org/10.1017/S0267190511000092

Dalton-Puffer, C. (2013). A construct of cognitive discourse functions for conceptualising content-language integration in CLIL and multilingual education. *European Journal of Applied Linguistics*, *1*(2), 216–253. https://doi.org/10.1515/eujal-2013-0011

Dang, T. K. A., Carbone, A., Ye, J., & Vu, T. T. P. (2022). How Academics Manage Individual Differences to Team Teach in Higher Education: a Sociocultural Activity Theory Perspective. *Higher Education*, *84*(2), 415–434. https://doi.org/10.1007/s10734-021-00777-6

Davis, J., & Wilson, S. M. (2000). Principals' Efforts to Empower Teachers: Effects on Teacher Motivation and Job Satisfaction and Stress. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *73*(6), 349–353. https://doi.org/10.1080/00098650009599442

Dawes, J. (2008). Do Data Characteristics Change According to the Number of Scale Points

Used? An Experiment Using 5-point, 7-point and 10-point Scales. *International Journal of Market Research*, *50*(1), 61–77. https://doi.org/10.1177/147078530805000106

Dawson, D., Morales, E., McKiernan, E. C., Schimanski, L. A., Niles, M. T., & Alperin, J. P. (2022). The role of collegiality in academic review, promotion, and tenure. *PLoS ONE*, *17*(4 April 2022). https://doi.org/10.1371/journal.pone.0265506

de Almeida, A. N., & Vieira, M. M. (2012). From University to Diversity: The Making of Portuguese Higher Education. In G. Neave & A. Amaral (Eds.), *Higher Education in Portugal 1974-2009: A Nation, a Generation* (pp. 137–159). Springer Netherlands. https://doi.org/10.1007/978-94-007-2135-7_6

de Diezmas, E. N. M. (2018). Exploring CLIL Contribution Towards the Acquisition of Cross-curricular Competences: A Comparative Study on Digital Competence Development in CLIL. *Revista de Lingüística y Lenguas Aplicadas*, *13*(1), 75–85. https://doi.org/10.4995/rlyla.2018.9023

de Diezmas, E. N. M., & Barrera, A. F. (2021). Main Challenges of EMI at the UCLM: Teachers' Perceptions on Language Proficiency, Training and Incentives. *Revista Alicantina de Estudios Ingleses*, *34*, 39–61. https://doi.org/10.14198/raei.2021.34.02

De Wever, B., Schellens, T., Valcke, M., & Van Keer, H. (2006). Content Analysis Schemes to Analyze Transcripts of Online Asynchronous Discussion Groups: A Review. *Computers & Education*, *46*(1), 6–28. https://doi.org/https://doi.org/10.1016/j.compedu.2005.04.005

Dean, K. L., & Forray, J. M. (2018). Collegiality and Collaboration in an Era of Competition. *Journal of Management Education*, *42*(1), 3–7. https://doi.org/10.1177/1052562917743014

Dearden, J. (2015). *English as a Medium of Instruction –A Growing Global Phenomenon*. British Council.

Dearden, J., & Macaro, E. (2016). Higher Education Teachers' Attitudes Towards English Medium Instruction: A Three-country Comparison. *Studies in Second Language Learning and Teaching*, *6*(3), 455–486. https://doi.org/10.14746/ssllt.2016.6.3.5

Delicado Puerto, G., & Pavón Vázquez, V. (2016). Training primary student teachers for CLIL: innovation through collaboration. La formación del profesorado de educación primaria para CLIL : innovación por medio de la colaboración. *Pulso*, *39*, 35–57.

Dikilitaş, K. (2020). Teacher Autonomy and Good Language Teachers. In C. Griffiths & Z. Tajeddin (Eds.), *Lessons from Good Language Teachers* (pp. 54–66). Cambridge University Press. https://doi.org/10.1017/9781108774390.008

Dikilitas, K., & Griffiths, C. (2017). *Developing Language Teacher Autonomy Action*. Springer International Publishing. https://doi.org/10.1007/978-3-319-50739-2

Direção Geral de Educação. (n.d.). https://www.dge.mec.pt/noticias/linguas-estrangeiras/candidatura-ao-programa-escolas-bilinguesbilingual-schools-programme

Direção Geral do Ensino Superior. (2022). *DGES - Pesquisa de Cursos e Instituições, July 2022*. https://www.dges.gov.pt/pt/pesquisa_cursos_instituicoes?plid=372&instituicao=&cursos=&distrito=2&tipo_ensino=2&tipo_estabelecimento=1&area=&tipo_curso=

Doiz, A., & Lasagabaster, D. (2017). Management Teams and Teaching Staff: Do They Share the Same Beliefs About Obligatory CLIL Programmes and the Use of the L1? *Language and Education*, *31*(2), 93–109. https://doi.org/10.1080/09500782.2017.1290102

Doiz, A., & Lasagabaster, D. (2018). Teachers' and Students' Second Language Motivational Self System in English-Medium Instruction: A Qualitative Approach. *TESOL Quarterly*, *52*(3), 657–679. https://doi.org/10.1002/tesq.452

Doiz, A., Lasagabaster, D., & Pavón, V. (2019). The integration of language and content in English-medium instruction courses: Lecturers' beliefs and practices. *Iberica*, *38*, 151–175.

Doiz, A., Lasagabaster, D., & Sierra, J. (2013a). Globalisation, Internationalisation, Multilingualism and Linguistic Strains in Higher Education. *Studies in Higher Education*, *38*(9), 1407–1421. https://doi.org/10.1080/03075079.2011.642349

Doiz, A., Lasagabaster, D., & Sierra, J. M. (2012). Future Challenges for English-Medium

Instruction at the Tertiary Level. In A. Doiz, D. Lasagabaster, & J. M. Sierra (Eds.), *English-Medium Instruction at Universities. Global Challenges* (pp. 213–221). Multilingual Matters. https://doi.org/doi:10.21832/9781847698162-015

Doiz, A., Lasagabaster, D., & Sierra, J. M. (2013b). *Englih-Medium Instruction at Universities. Global Challenges* (A. Doiz, D. Lasagabaster, & J. M. Sierra (Eds.)). Multilingual Matters.

Doiz, A., Lasagabaster, D., & Sierra, J. M. (2014). CLIL and Motivation: The Effect of Individual and Contextual Variables. *Language Learning Journal*, *42*(2), 209–224. https://doi.org/10.1080/09571736.2014.889508

Donnison, S., Edwards, D., Itter, D., Martin, D., & Yager, Z. (2009). Reflecting on improving our practice: Using collaboration as an approach to enhance first year transition in higher education. *Australian Journal of Teacher Education*, *34*(3), 18–29. https://doi.org/10.14221/ajte.2009v34n3.2

Donohue, J. D. (1986). Faculty Perceptions of Organizational Climate and Expressed Job Satisfaction in Selected Baccalaureate Schools of Nursing. *Journal of Professional Nursing*, *2*(6), 373–379. https://doi.org/10.1016/S8755-7223(86)80013-8

Dudley-Evans, T., & John, M. J. S. (1998). *Developments in English for Specific Purposes: A Multi-Disciplinary Approach* (15th Ed). Cambridge University Press.

Duff, P. A. (2014). Case Study Research on Language Learning and Use. *Annual Review of Applied Linguistics*, *34*, 233–255. https://doi.org/10.1017/S0267190514000051

Earls, C. W. (Ed.). (2016). *Multilingualism and English in Twenty-First-Century Europe*. Peter Lang. https://doi.org/https://doi.org/10.3726/b10460

Ellison, Maria; Araújo, Sofia; Correia, Marta; Vieira, F. (2017). Teachers' Perceptions of Need in EAP and ICLHE Contexts. In R. Valke, Jennifer; Wilkinson (Ed.), *Integrating Content and Language in Higher Education: Perspectives on Professional Practice* (pp. 59–76). Peter Lang.

Ellison, M. (2014). *CLIL as a Catalyst for Developing Reflective Practice in Foreign Language Teacher Education*. Universidade do Porto.

Ellison, M. (2018). (Net)Working CLIL in Portugal. *E-TEALS: An e-Journal of Teacher Education and Applied Language Studies*, *Special Ed*, 4–22. https://doi.org/10.2478/eteals-2018-0010

Ellison, M., Araújo, S., Correia, M., & Vieira, F. (2017). Teachers' perceptions of need in EAP and ICLHE contexts. In J. Valcke & R. Wilkinson (Eds.), *Integrating Content and Language in Higher Education. Perspectives on Professional Practice* (pp. 59–76). Peter Lang. https://www.peterlang.com/view/9783631706930/chapter-002.xhtml

Ellison, M., Morgado, M., & Coelho, M. (2022). CLIL across schools in Portugal. In M. Ellison, M. Morgado, & M. Coelho (Eds.), *Contexts and Conditions for Successful CLIL in Portugal* (pp. 31–103). Coleção Transversal. https://doi.org/doi.org/10.21747/978-989-746-346-4/con

Elo, S., & Kyngäs, H. (2008). The Qualitative Content Analysis Process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569

Engeström, Y. (2014). *Learning by Expanding: An Activity-Theoretical Approach to Developmental Research* (2nd ed.). Cambridge University Press. https://doi.org/10.1017/CBO9781139814744

Escobar Urmeneta, C. (2020). *From EMI to ICLHE*. 179–204. https://doi.org/10.4018/978-1-7998-2318-6.ch009

EST-IPCB. (2010). *Regulamento Interno do Conselho Técnico-Científico da Escola Superior de Tecnologia de Castelo Branco*. https://www.ipcb.pt/estcb/orgãos-de-gestão

EST-IPCB. (2015). *Regulamento Interno Do Conselho Pedagógico da Escola Superior de Tecnologia de Castelo Branco*. https://www.ipcb.pt/estcb/orgãos-de-gestão

European Comission. (2010). *An Agenda for new skills and jobs: A European contribution towards full employment*. Comission to the Euroepan Parliament, the Council, the European Economic and Social Committee of the Regions. http://ec.europa.eu/social/BlobServlet?docId=6328&langId=en

Eurydice. (2006). *Content and Language Integrated Learning (CLIL) at School in Europe*.

Evnitskaya, N., & Morton, T. (2011). Knowledge Construction, Meaning-making and Interaction in CLIL Science Classroom Communities of Practice. *Language and Education*, *25*(2), 109–127. https://doi.org/10.1080/09500782.2010.547199

Eysenbach, G. (2004). Improving the Quality of Web Surveys: The Checklist for Reporting Results of Internet E-Surveys (CHERRIES). In *Journal of Medical Internet Research* (Vol. 6). https://doi.org/10.2196/jmir.6.3.e34

Falk, R. F., & Miller, N. B. (1992). *A Primer for Soft Modeling*. University of Akron Press.

Fearing, F. (1954). Social Impact of the Mass Media of Communication. In *Teachers College Record: The Voice of Scholarship in Education* (Vol. 55, Issue 10, pp. 165–191). https://doi.org/10.1177/016146815405501008

Fernández-Costales, A. (2015). Teacher Satisfaction Concerning the Implementation of Bilingual Programmes in a Spanish University. *Porta Linguarum Revista Interuniversitaria de Didáctica de Las Lenguas Extranjeras*, 93–108. https://doi.org/10.30827/digibug.53757

Ferreira, J. B., Machado, M. de L., & Santiago, R. (2008). The Polytechnic Higher Education Sector in Portugal. In J. S. Taylor, J. B. Ferreira, M. de L. Machado, & R. Santiago (Eds.), *Non-University Higher Education in Europe* (pp. 191–214). Springer Netherlands. https://doi.org/10.1007/978-1-4020-8335-8_9

Firestone, W. A., & Pennell, J. R. (1993). Teacher Commitment, Working Conditions, and Differential Incentive Policies. *Review of Educational Research*, *63*(4), 489–525. https://doi.org/10.3102/00346543063004489

Flowerdew, J., & Peacock, M. (2001). The EAP Curriculum: Issues, Methods, and Challenges. In *Research Perspectives on English for Academic Purposes* (pp. 177–194). Cambridge University Press.

Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, *12*(2), 219–245. https://doi.org/10.1177/1077800405284363

Fornell, C., & Larker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.2307/3151312

Fortanet-Gómez, I. (2012). Academics' Beliefs About Language Use and Proficiency in Spanish Multilingual Higher Education. *AILA Review*, *25*(1), 48–63. https://doi.org/https://doi.org/10.1075/aila.25.04for

Fortanet-gomez, I., & Räisänen, C. (2008). *ESP in European Higher Education: Integrating Language and Content*. John Benjamins Publishing Company.

Frase, L. E., & Sorenson, L. (1992). Teacher Motivation and Satisfaction: Impact on Participatory Management. *NASSP Bulletin*, *76*(540), 37–43. https://doi.org/10.1177/019263659207654007

Gabriel, R., Day, J. P., & Allington, R. (2011). Exemplary Teacher Voices on Their Own Development. *Phi Delta Kappan*, *92*(8), 37–41. https://doi.org/10.1177/003172171109200808

Gaff, J., & Pruitt-Logan, A. (2003). *Preparing Future Faculty in the Humanities and Social Sciences*. Council of Graduate Schools Association of American Colleges and Universities. http://www.preparing-faculty.org/PFFWeb.PFF4Manual.pdf

Gallo, G. (2017). Applying Innovation to CLIL. *Issues and Ideas in Education*, *5*(2), 155–173. https://doi.org/https://doi.org/10.15415/iie.2017.52010

Garcia, O. (2011). *Bilingual Education in the 21st Century: A Global Perspective*. John Wiley & Sons.

Garland, R. (1991). The Mid-point on a Rating Scale: Is It Desirable? *Marketing Bulletin*, *2*, 66–70.

Gaspar, M., Régio, M., & de Passos Morgado, M. M. (2018). Intercultural Communicative Skills

in the Training of Industrial Engineers: A Case-Study on Students' Perceptions. *INTED2018 Proceedings*, 7319–7326. https://doi.org/10.21125/inted.2018.1722

Gaspar, M., Régio, M., & Morgado, M. (2016). Learning English Through 3D-Printing: A Case Study with Engineering and Design Students in Higher Education. *8th International Conference on Education and New Learning Technologies*, 5132–5138. https://doi.org/10.21125/edulearn.2016.2212

Gaspar, M., Régio, M., & Morgado, M. (2017a). Lean-Green Manufacturing: Collaborative Content and Language Integrated Learning in Higher Education and Engineering Courses. *Journal of Education, Culture and Society*, *1*, 208–217. https://doi.org/10.15503/jecs20172.208.217

Gaspar, M., Régio, M., & Morgado, M. (2017b). *The Co-construction of a Bilingual Glossary of Terms for Engineering and Design Technologies as Part of Learning in Engineering Through a Collaborative CLIL Approach*. 3214–3218.

Gavriliuk, O. A., & Lakhno, A. V. (2013). Professional Autonomy of a University Teacher in the USA and Russia : Freedom from Control or Freedom for Development ? *Journal of Siberian Federal University. Humanities & Social Sciences*, *3*(2013 6), 455–467.

Gee, J. P. (1990). *Social Linguistics and Literacies: Ideology in Discourses*. Falmer Press.

Gee, J. P. (2005). *An Introduction to Discourse Analysis: Theory and Method*. Routledge.

Gerring, J. (2004). What Is a Case Study and What is It Good For? *American Political Science Review*, *98*(2), 341–354. https://doi.org/10.1017/S0003055404001182

Gil, V., & Dueñas, P. M. (2023). Designing and Implementing a Professional Programme for ICLHE Teachers: Beyond Linguistic and Communicative Competence. *Journal of Language Teaching and Research*, *14*(4), 1013–1022. https://doi.org/10.17507/jltr.1404.19

Gillett, A. (2011). *Using English for Academic Purposes For Students in Higher Education*. http://www.uefap.com/

Gillett, A. (2022). *What is EAP?* http://www.uefap.com/bgnd/eap.htm

Goebel, D. J., Marshall, G. W., Locander, W. B., Mammen, A., Endrikat, J., Guenther, T. W., Titus, R., Angulo Estremera, C., Bellostas Perezgrueso, A. J., Lopez Arceiz, F. J., Rieg, R., Gruber, T., Reissig-Thust, S., Micic, I., Totic, I., Halilagic, A., Amalia, P. P., Mihaela, D., Ionuţ, P., … Kleczek, R. (2017). The Use of Value-based Management in Family Firms. *Accounting, Organizations and Society*, *27*(2), 115–147. https://doi.org/10.7203/CIRIEC-E.91.8223

González Ardeo, J. M. (2013). (In)compatibility of CLIL and ESP courses at university. *Language Value*, *5*(1), 24–47. https://doi.org/10.6035/languagev.2013.5.3

Goris, J., Denessen, E., & Verhoeven, L. (2017). The Contribution of CLIL to Learners' International Orientation and EFL Confidence. *The Language Learning Journal*. https://doi.org/10.1080/09571736.2016.1275034

Goris, J., Denessen, E., & Verhoeven, L. (2019). Effects of Content and Language Integrated Learning in Europe. A Systematic Review of Longitudinal Experimental Studies. *European Educational Research Journal*, *18*(6), 675–698. https://doi.org/10.1177/1474904119872426

Gosling, M., & Yang, W. (2022). Introducing Internationalisation at Home Learning satisfaction under the Content and Language Integrated Learning approach. *Learning and Teaching*, *15*(1), 46–66. https://doi.org/10.3167/latiss.2022.150104

Graham, P. (2007). Improving Teacher Effectiveness through Structured Collaboration: A Case Study of a Professional Learning Community. *RMLE Online*, *31*(1), 1–17. https://doi.org/10.1080/19404476.2007.11462044

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a Conceptual Framework for Mixed-Method Evaluation Designs. *Educational Evaluation and Policy Analysis*, *11*(3), 255–274. https://doi.org/10.3102/01623737011003255

Grimmett, P., & Crehan, P. (2013). The Nature of Collegiality in Teacher Development: The Case of Clinical Supervision. In M. Fullan & A. Hargreaves (Eds.), *Teacher Development and*

Educational Change (pp. 56–85). Routledge Journals, Taylor & Francis Group.

Grossman, P., Wineburg, S., & Woolworth, S. (2001). Toward a Theory of Teacher Community. *Teachers College Record*, *103*(6), 942–1012. https://doi.org/10.1111/0161-4681.00140

Gutierrez, K. (2000). Teaching and Learning in the 21st Century. *English Education*, *32*(4), 290–298. http://www.jstor.org/stable/40173039

Hackman, J. R., & Oldham, G. R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, *60*(2), 159–170. https://doi.org/10.1037/h0076546

Hadar, L., & Brody, D. (2010). From isolation to symphonic harmony: Building a professional development community among teacher educators. *Teaching and Teacher Education*, *26*(8), 1641–1651. https://doi.org/https://doi.org/10.1016/j.tate.2010.06.015

Hair, J. F. J., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer On Partial Least Squares Structural Equation Modeling (PLS-SEM)* (Second Edi). SAGE Publications, Inc.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *The Journal of Marketing Theory and Practice*, *19*(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to Use and How to Report the Results of PLS-SEM. In *European Business Review* (Vol. 31, Issue 1, pp. 2–24). Emerald Group Publishing Ltd. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An Assessment of the Use of Partial Least Squares Structural Equation Modeling in Marketing Research. *Journal of the Academy of Marketing Science*, *40*(3), 414–433. https://doi.org/10.1007/s11747-011-0261-6

Hair Jr, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (8th ed.). Cengage Learning EMEA.

Hargreaves, A. (2019). Teacher Collaboration: 30 Years of Research on Its Nature, Forms, Limitations and Effects. *Teachers and Teaching: Theory and Practice*, *25*(5), 603–621. https://doi.org/10.1080/13540602.2019.1639499

Hargreaves, A., & Dawe, R. (1990). Paths of Professional Development: Contrived Collegiality, Collaborative Culture, and the Case of Peer Coaching. *Teaching and Teacher Education*, *6*(3), 227–241. https://doi.org/https://doi.org/10.1016/0742-051X(90)90015-W

Hargreaves, A., & Tucker, E. (1991). Teaching and Guilt: Exploring the Feelings of Teaching. *Teaching and Teacher Education*, *7*(5–6), 491–505. https://doi.org/10.1016/0742-051X(91)90044-P

Harrop, E. (2012). Content and Language Integrated Learning (CLIL): Limitations and Possibilities. *Encuentro: Revista de Investigación e Inovación En La Clase de Idiomas*, *21*, 57–70.

Hartley, M. (2010). Reconcilable Differences: Conflict and Collegiality in a Unionized Community College Environment. *Community College Journal of Research and Practice*, *34*(4), 318–336. https://doi.org/10.1080/10668920701382427

Hartnett, J., Weed, R., McCoy, A., Theiss, D., & Nickens, N. (2013). Co-teaching: A New Partnership During Student Teaching. *SRATE Journal*, *23*(1), 5–12.

Haviland, D., Alleman, N. F., & Cliburn Allen, C. (2017). 'Separate but Not Quite Equal'': Collegiality Experiences of Full-Time Non-Tenure-Track Faculty Members.' *Journal of Higher Education*, *88*(4), 505–528. https://doi.org/10.1080/00221546.2016.1272321

He, Q. (1999). Knowledge Discovery Through Co-Word Analysis. *Library Trends*, *48*(1), 133–159.

Heitor, M., & Horta, H. (2014). Democratizing Higher Education and Access to Science: The Portuguese Reform 2006–2010. *Higher Education Policy*, *27*(2), 239–257. https://doi.org/10.1057/hep.2013.21

Hellawell, D., & Hancock, N. (2001). A Case Study of the Changing Role of the Academic Middle Manager in Higher Education: Between Hierarchical Control and Collegiality? *Research*

Papers in Education, *16*(2), 183–197. https://doi.org/10.1080/02671520110037438

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-based Structural Equation Modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hernandez-Maldonado, A., Lugo-Ibarra, E., Oviedo-Gonzalez, E., Murillo-Bracamontes, E., & Vazquez-Prieto, R. (2013). Collegiality Activity in Higher Education To Optimize the Management and Academic Achievement Applied in Engineering Area. In L. G. Chova, A. L. Martinez, & I. C. Torres (Eds.), *6Th International Conference of Education, Research and Innovation (Iceri 2013)* (pp. 4355–4364).

Hixon, E. (2014). Team--based Online Course Development : A Case Study of Collaboration Models. *Online Journal of Disance Education Learning Administration*, *XI*(IV), 1–14.

Hoffman, J., & Pearson, P. D. (2000). Reading Teacher Education in the Next Millennium: What Your Grandmother's Teacher Didn't Know That Your Granddaughter's Teacher Should. *Reading Research Quarterly*, *35*(1), 28–44.

Holsti, O. R. (1969). *Content Analysis for the Social Sciences and Humanities*. Addison-Wesley Pub. Co.

Hoyle, E., & John, P. D. (1995). *Professional Knowledge and Professional Practice*. Cassell.

Hoyle, R. H. (1995). The Structural Equation Modeling Approach: Basic Concepts and Fundamental Issues. In R. H. Hoyle (Ed.), *Structural Equation Modeling: Concepts, Issues, and Applications* (pp. 1–15). SAGE Publications.

Huang, J. (2005). Teacher Autonomy in Language Learning: A Review of the Research. In *Research studies in education* (Vol. 3, pp. 203–218). Faculty of Education, University of Hong Kong.

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic Management Journal*, *20*(2), 195–204.

Hung, K., & Law, R. (2011). An Overview of Internet-based Surveys in Hospitality and Tourism Journals. *Tourism Management*, *32*, 717–724. https://doi.org/10.1016/j.tourman.2010.05.027

Hurajová, A. (2015). An Overview of Models of Bilingual Education. *Mediterranean Journal of Social Sciences*, *6*(6), 186–190. https://doi.org/10.5901/mjss.2015.v6n6s1p186

Husband, R. E., & Short, P. M. (1994). Interdisciplinary Teams Lead to Greater Teacher Empowerment. *Middle School Journal*, *26*(2), 58–60. https://doi.org/10.1080/00940771.1994.11494412

Hyland, K. (2006). *English for Academic Purposes An Advanced Resource Book*. Routledge.

Hyland, K., & Hamp-Lyons, L. (2002). EAP: Issues and Directions. *Journal of English for Academic Purposes*, *1*(1), 1–12. https://doi.org/https://doi.org/10.1016/S1475-1585(02)00002-4

IBM Corp. (2021). *IBM SPSS Statistics for Macintosh*. https://www.ibm.com/de-de

Iida, A. (2009). Teacher Autonomy and Professional Teacher Development : Exploring the Necessities for Developing Teacher Autonomy in EFL Japanese Contexts. *Asian EFL Journal*, *35*, 47–65.

IPCB. (2008). *Estatutos do IPCB*.

Despacho N.º 112/17, (2017).

IPCB. (2017). *manual_de_gestao_versao_8_ass.pdf*.

IPCB. (2018). *Regulamento Interno Unidade de Investigação de Desenvolvimento em Serviços, Aplicações e Conteúdos Digitais*.

IPCB. (2019). *Plano Estratégico 2019-2022*.

IPCB. (2022). *Relatório de Atividades e Contas 2021*. http://www.inem.pt/files/2/documentos/20140806114337305065.pdf

IPCB. (2023). *Relatório de Atividades e Contas 2022*. https://www.ipcb.pt/sites/default/files/upload/sc/files/docs_gestao/relatorio_de_atividades_e_contas_2022_vf-6_signed_conselho_geral_0.pdf

Ivanova, I. N. (2016). Teacher Collaboration in CLIL Contexts: Challenges and Good Practices. *Studies in Linguistics, Culture, and FLT*, *1*(1), 78–89.

Iwaniec, J., & Halbach, A. (2021). Teachers' Views on Their Methodology and Their Profiles: In Search of The Possible Reasons for The Levelling Effect of CLIL. *Journal of Multilingual and Multicultural Development*, 1–15. https://doi.org/10.1080/01434632.2021.1946548

Jackson, K., & Bazeley, P. (2019). *Qualitative Data Analysis with NVivo* (Third Edit). SAGE Publications.

Jacobs, C. (2007). Towards a critical understanding of the teaching of discipline-specific academic literacies: making the tacit explicit. *Journal of Education*, *41*(1), 59–81. https://doi.org/10.10520/AJA0259479X_23

Jacobs, C. (2008). Mainstreaming academic literacy teaching: Implications for how academic development understands its work in higher education. *South African Journal of Higher Education*, *21*(7), 870–881. https://doi.org/10.4314/sajhe.v21i7.25748

Jarzabkowski, L. M. (2002). The Social Dimensions of Teacher Collegiality. *Journal of Educational Enquiry*, *3*(2), 1–20.

Jeannin, L. (2017). The Adaptation Process of International Lecturers in a South African University: The Centrality of Agency and Collegiality. *Journal of Research in International Education*, *16*(3), 236–247. https://doi.org/10.1177/1475240917746035

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, *1*(2), 112–133. https://doi.org/10.1177/1558689806298224

Johnston, L. (2006). Software and Method: Reflections on Teaching and Using QSR NVivo in Doctoral Research. *International Journal of Social Research Methodology*, *9*(5), 379–391. https://doi.org/10.1080/13645570600659433

Jordan, R. R. (1997). EAP and study skills: definitions and scope. In *English for Academic Purposes* (pp. 1–19). Cambridge University Press.

Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, *7*(4), 396–403. https://doi.org/10.9734/bjast/2015/14975

Kamii, C. (2000). *Young Children Reinvent Arithmetic: Implications of Piaget's Theory*. Teachers College Press.

Kassarjian, H. H. (1977). Content Analysis in Consumer Research. *Journal of Consumer Research*, *4*(1), 8–18.

Kelchtermans, G. (2006). Teacher Collaboration and Collegiality as Workplace Conditions. A Review. *Zeitschrift Fur Padagogik*, *52*(2), 220–237. https://doi.org/10.25656/01:4454

Kelly, J., & Cherkowski, S. (2015). Collaboration, Collegiality, and Collective Reflection: A Case Study of Professional Development for Teachers. *Canadian Journal of Educational Administration and Policy*, *169*, 1–27.

Kırkgöz, Y., & Dikilitaş, K. (2018). Recent Developments in ESP/ EAP/ EMI Contexts. In Y. Kırkgöz & K. Dikilitaş (Eds.), *Key issues in English for specific purposes in higher education* (Issue September 2020, p. 353). Springer International Publishing. https://doi.org/10.1007/978-3-319-70214-8

Knight, J. (2013). The Changing Landscape of Higher Education Internationalisation – For Better or Worse? *Perspectives: Policy and Practice in Higher Education*, *17*(3), 84–90. https://doi.org/10.1080/13603108.2012.753957

Knight, J. (2020). The internationalization of higher education scrutinized: international program and provider mobility. *Sociologias*, *54*, 176–199. https://doi.org/http://dx.doi.org/10.1590/15174522-97865 The

Kok, S. K., Douglas, A., & McClelland, B. (2009). Collegiality in Flux?: The Assimilation of New Management Paradigms and Focus in UK Universities. *International Journal of Learning*, *16*(10), 637–652. https://doi.org/10.18848/1447-9494/cgp/v16i10/46635

Kolbe, R. H., & Burnett, M. S. (1991). Content-Analysis Research: An Examination of Applications with Directives for Improving Research Reliability and Objectivity. *Journal of Consumer Research, Vol. 18, September*, *pp*, 243–250.

Koopman, G. J., Skeet, J., & de Graaff, R. (2014). Exploring content teachers' knowledge of language pedagogy: a report on a small-scale research project in a Dutch CLIL context. *The Language Learning Journal*, *42*(2), 123–136. https://doi.org/10.1080/09571736.2014.889974

Koris, R., & Pál, Á. (2021). Fostering learners' involvement in the assessment process during the COVID-19 pandemic: Perspectives of university language and communication teachers across the globe. *Journal of University Teaching and Learning Practice*, *18*(5). https://doi.org/10.53761/1.18.5.11

Koskenranta, M., Kuivila, H., Männistö, M., Kääriäinen, M., & Mikkonen, K. (2022). Collegiality Among Social- and Health Care Educators in Higher Education or Vocational Institutions: A Mixed-Method Systematic Review. *Nurse Education Today*, *114*. https://doi.org/10.1016/j.nedt.2022.105389

Koskenranta, M., Kuivila, H., Pramila-Savukoski, S., Männistö, M., & Mikkonen, K. (2022). Development and Testing of an Instrument to Measure the Collegiality Competence of Social and Health Care Educators. *Nurse Education Today*, *113*. https://doi.org/10.1016/j.nedt.2022.105388

Krammer, M., Rossmann, P., Gastager, A., & Gasteiger-Klicpera, B. (2018). Ways of Composing Teaching Teams and Their Impact on Teachers' Perceptions About Collaboration. *European Journal of Teacher Education*, *41*(4), 463–478. https://doi.org/10.1080/02619768.2018.1462331

Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman.

Krefting, L. (1991). Rigor in Qualitative Research: The Assessment of Trustworthiness. *The American Journal of Occupational Therapy*, *45*(3), 214–222. https://doi.org/10.5014/ajot.45.3.214

Kreis, K., & Brockopp, D. Y. (1986). Autonomy: A Component of Teacher Job Satisfaction. *Education*, *107*(1), 110.

Krippendorff, K. (1990). Models and Metaphors of Communication. *Communication*, 1–18.

Krippendorff, K. (2018). *Content Analysis An Introduction to Its Methodology* (4th ed.). SAGE Publications, Inc.

Kruseman, A. N. (2003). Preface. In C. Van Leeuwen & R. Wilkinson (Eds.), *Multilingual Approaches in University Education. Challenges and Practices* (pp. 7–10). Uitgeverij Valkhof Pers - Universiteit Maastricht.

Kruskal, W. H., & Wallis, W. A. (1952). Use of Ranks in One-Criterion Variance Analysis. *Journal of the American Statistical Association*, *47*(260), 583–621. https://doi.org/10.1080/01621459.1952.10483441

Kung, F.-W. (2018). ″English-only or Nothing″: Practitioners' Perspective on the Policy and Implementation of CLIL in Higher Education. *Education Journal*, *46*(1), 93–115.

Kwiek, M. (2015). The Unfading Power of Collegiality? University Governance in Poland in a European Comparative and Quantitative Perspective. *International Journal of Educational Development*, *43*, 77–89. https://doi.org/10.1016/j.ijedudev.2015.05.002

Laksov, K. B., Mann, S., & Dahlgren, L. O. (2008). Developing a Community of Practice Around Teaching: A Case Study. *Higher Education Research and Development*, *27*(2), 121–132. https://doi.org/10.1080/07294360701805259

Lamb, T. (2008). Learner Autonomy and Teacher Autonomy: Synthesising an Agenda. In T. Lamb & H. Reinders (Eds.), *Learner and Teacher Autonomy: Concepts, Realities and Responses*

(pp. 269–284). John Benjamin. https://doi.org/10.1075/aals.1.21lam

Lantolf, J. P. (2000). Introducing sociocultural theory. In J. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 1–26). Oxford University Press.

LaPointe Terosky, A., & Heasley, C. (2015). Supporting Online Faculty Through a Sense of Community and Collegiality. *Journal of Asynchronous Learning Network*, *19*(3).

Lasagabaster, D. (2009). The implementation of CLIL and attitudes towards trilingualism. *ITL – International Journal of Applied Linguistics*, 23–43.

Lasagabaster, D. (2011). English Achievement and Student Motivation in CLIL and EFL Settings. *Innovation in Language Learning and Teaching*, *5*(1), 3–18. https://doi.org/10.1080/17501229.2010.519030

Lasagabaster, D. (2018). Fostering Team Teaching: Mapping Out a Research Agenda for English-medium Instruction at University Level. *Language Teaching*, *51*(3), 400–416. https://doi.org/10.1017/S0261444818000113

Lasagabaster, D. (2019). Motivation in Content and Language Integrated Learning (CLIL) Research. In M. Lamb, K. Csizér, A. Henry, & S. Ryan (Eds.), *The Palgrave Handbook of Motivation for Language Learning* (pp. 347–366). Springer International Publishing. https://doi.org/10.1007/978-3-030-28380-3_17

Lasagabaster, D., & Doiz, A. (2016). CLIL students' perceptions of their language learning process: delving into self-perceived improvement and instructional preferences. *Language Awareness*, *25*(1–2), 110–126. https://doi.org/10.1080/09658416.2015.1122019

Lasagabaster, D., & Ruiz de Zarobe, Y. (2010). Ways Forward in CLIL: Provision Issues and Future Planning. In *CLIL in Spain: Implementation, Results and Teacher Training* (p. 278). Cambridge Scholars Publishing.

Lasagabaster, D., & Sierra, J. M. (2009). *Language Attitudes in CLIL and Traditional EFL Classes*. *1*(2).

Lauridsen, K. M. (2017). Professional Development of International Classroom Lecturers. In J. Valcke & R. Wilkinson (Eds.), *Integrating Content and Language in Higher Education: Perspectives on Professional Practice. Selected Papers from the IV International Conference Integrating Content and Language in Higher Education* (pp. 25–37). Peter Lang.

Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press.

Leaver, B. Lou, & Stryker, S. B. (1989). Content-Based Instruction for Foreign Language Classrooms. *Foreign Language Annals*, *22*(3), 269–275. https://doi.org/10.1111/j.1944-9720.1989.tb02746.x

Leonardi, V. (2015). Bridging the Gap Between Esp and Clil in the University Context. *Rivista Semestrale ISSN 2281-4582*, *5*, 18–26.

Lieberman, A. (2000). Shaping the Future of Teacher Development. *Journal of Teacher Education*, *51*(3), 221–227.

Likert, R. (1932). A Technique For the Measurement of Attitudes. *Archives of Psychology*, *22 140*, 55. https://doi.org/2731047

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. sage.

Little, D. (1995). Learning as Dialogue: The Dependence of Learner Autonomy on Teacher Autonomy. *System*, *23*(2), 175–181. https://doi.org/https://doi.org/10.1016/0346-251X(95)00006-6

Little, J. W., Gearhart, M., Curry, M., & Kafka, J. (2003). Looking at Student Work for Teacher Learning, Teacher Community, and School Reform. *Phi Delta Kappan*, *85*(3), 184–192. https://doi.org/10.1177/003172170308500305

Littlefair, D., Clifford Swan, J., & Hudson, K. (2019). Kinship and Collegiality: An Exploration of the Underpinning Characteristics of External Partnerships at a University Education Department. *Qualitative Research Journal*, *19*(4), 371–379. https://doi.org/10.1108/QRJ-02-

2019-0018

Ljalikova, A., Meristo, M., Alas, E., & Jung, M. (2021). Narrative analysis as a means of investigating clil teachers' meaningful experiences. *Qualitative Research in Education*, *10*(3), 228–259. https://doi.org/10.17583/qre.7511

Llinares, A., & Morton, T. (2012). Social Perspectives on Interaction and Language Learning in CLIL Classrooms. In E. Alcon Soler & P. Safont-Jorda (Eds.), *Discourse and language learning across L2 instructional settings* (Issue 24, pp. 105–131). Rodopi. https://doi.org/10.1163/9789401208598_007

Lo, Y. Y. (2020). Professional Development of CLIL Teachers. In *Professional Development of CLIL Teachers*. https://doi.org/10.1007/978-981-15-2425-7

Löfgren, H., & Karlsson, M. (2016). Emotional Aspects of Teacher Collegiality: A Narrative Approach. *Teaching and Teacher Education*, *60*, 270–280. https://doi.org/https://doi.org/10.1016/j.tate.2016.08.022

Lopriore, L. (2020). Reframing Teaching Knowledge in Content and Language Integrated Learning (CLIL): A European Perspective. *Language Teaching Research*, *24*(1), 94–104. https://doi.org/10.1177/1362168818777518

Lortie, D. C. (2002). *Schoolteacher: A Sociological Study*. University of Chicago Press.

Lourenço, M., & Mourão, S. (2017). Learning English in European Countries : Learning English in Portugal. *Language Issues*, *28*(2), 46–56.

Lourenço, M., & Pinto, S. (2019). Expatriate and Home Teachers' Beliefs About English-medium Instruction at a Portuguese University. *European Journal of Higher Education*, *9*(3), 252–267. https://doi.org/10.1080/21568235.2019.1597750

Luprichová, J., & Hurajová, L. (2017). CLIL – Potential Way of Enhancing Internationalization of Higher Education in Diverse Context. *ICT for Language Learning*, *November*. https://conference.pixel-online.net/ICT4LL/files/ict4ll/ed0010/FP/3016-CLIL2739-FP-ICT4LL10.pdf

Macaro, E., Curle, S., Pun, J., An, J., & Dearden, J. (2018). A Systematic Review of English Medium Instruction in Higher Education. *Language Teaching*, *51*(1), 36–76. https://doi.org/10.1017/S0261444817000350

Macaro, E., Jimènez-Muñoz, A., & Lasagabaster, D. (2019). The Importance of Certification of English Medium Instruction Teachers in Higher Education in Spain. *Porta Linguarum*, *2019*(32), 103–118.

Macaro, E., & Rose, H. (2023). Editorial: Introduction to the special issue on english medium instruction: Areas of research needing urgent attention. *Studies in Second Language Learning and Teaching*, *13*(2), 257–269. https://doi.org/10.14746/ssllt.38274

Macbeath, J. (2012). Future of Teaching Profession. In *Education International Research Institute*. Leadership for Learning - The Cambridge Network.

Macneil, J. (2016). On the Role of Collegiality, Civility and Collectivism in Shaping Academic Identity. *Labour and Industry*, *26*(3), 165–178. https://doi.org/10.1080/10301763.2016.1196158

Maggi, F., Cherubin, M., & Pascual, E. G. (2014). Using Web 2.0 Tools in CLIL. In S. Garton & K. Graves (Eds.), *International Perspectives on Materials in ELT* (pp. 198–215). Palgrave Macmillan UK. https://doi.org/10.1057/9781137023315_12

Maiz-Arevalo, C., & Domínguez Romero, E. (2013). Students' response to CLIL in tertiary education: the Case of Business administration and economics at Complutense University. *Revista de Lingüística y Lenguas Aplicadas*, *8*(0), 1–12. https://doi.org/10.4995/rlyla.2013.955

Mancho-Barés, G., & Arnó-Macià, E. (2017). Emi lecturer training programmes and academic literacies: A critical insight from ESP. *ESP Today*, *5*(2), 266–290. https://doi.org/10.18485/esptoday.2017.5.2.7

Mann, H. B., & Whitney, D. R. (1947). On a Test of Whether one of Two Random Variables is

Stochastically Larger than the Other. *The Annals of Mathematical Statistics*, *18*(1), 50–60. https://doi.org/10.1214/aoms/1177730491

Marácz, L., & Rosello, M. (2015). *Multilingual Europe, Multilingual Europeans*. Brill.

Margić, B. D., & Vodopija-Krstanović, I. (2015). Introducing EMI at a Croatian university: Can we bridge the gap between global emerging trends and local challenges? In S. Dimova, A. K. Hultgren, & C. Jensen (Eds.), *English-Medium Instruction in European Higher Education: English in Europe* (pp. 43–64). De Gruyter Mouton. https://doi.org/doi:10.1515/9781614515272-004

Marini, G., & Reale, E. (2016). How Does Collegiality Survive Managerially Led Universities? Evidence From a European Survey. *European Journal of Higher Education*, *6*(2), 111–127. https://doi.org/10.1080/21568235.2015.1070676

Marôco, J. (2010). *Análise de Equações Estruturais-Fundamentos Teóricos, Software & Aplicações*. Report Number, Lda.

Marsh, D. (1998). CLIL (Content and Language Integrated Learning) - A framework for implementing plurilingual education originating from models of bilingual education. *Living Together in Europe in the 21st Century: The Challenge of Plurilingual and Multicultural Communication and Dialogue*, 51–57.

Marsh, D. (2008). Language Awareness and CLIL. In J. Cenoz & N. H. Hornberger (Eds.), *Encyclopedia of Language and Education* (pp. 233–246). Springer US. https://doi.org/10.1007/978-0-387-30424-3_152

Marsh, D. (2017). Afterword. In *Media, Family Interaction and the Digitalization of Childhood* (pp. 203–208). Edward Elgar Publishing Ltd. https://doi.org/10.4324/9780203420324_afterword

Marsh, D., Mehisto, P., Wolff, D., & Frigols Martin, M. J. (2010). *European Framework for CLIL Teacher Education*. European Centre for Modern Languages.

Marshall, D., Conana, H., Maclons, R., Herbert, M., & Volkwyn, T. (2011). Learning as Accessing a Disciplinary Discourse: Integrating Academic Literacy into Introductory Physics Through Collaborative Partnership. *Across the Disciplines*, *8*(3), 1–9. https://doi.org/10.37514/atd-j.2011.8.3.15

Marshall, P. A. (2019). Teacher Autonomy on English Communication Courses in Japanese Universities. *International Journal of Curriculum and Instruction*, *11*(2).

Martí Arnándiz, O., Moliner, L., & Alegre, F. (2022). When CLIL is for all: Improving learner motivation through peer-tutoring in Mathematics. *System*, *106*. https://doi.org/https://doi.org/10.1016/j.system.2022.102773

Martín del Pozo, M. Á. (2016). An Approach to CLIL Teacher Language Awareness Using the Language Triptychh. *Pulso. Revista de Educación*, *39*, 141–157. https://doi.org/10.58265/pulso.5082

Martin, S. J., & Bradbeer, C. (2016). Creating Collaborative Effectiveness: One School's Approach. *Reseach Information for Teachers*, *2*, 48–52. https://doi.org/http://dx.doi.org/10.18296/set.0046

Martínez-Soto, T., & Prendes-Espinosa, P. (2023). A Systematic Review on the Role of ICT and CLIL in Compulsory Education. *Education Sciences*, *13*(1). https://doi.org/10.3390/educsci13010073

Martinez Agudo, J. de D. (Ed.). (2012). *Teaching and Learning English through Bilingual Education*. Cambridge Scholars Pub.

Matell, M. S., & Jacoby, J. (1971). Is There an Optimal Number of Alternatives For Likert Scale Items? Study I: Reliability and Validity. *Educational and Psychological Measurement*, *31*(3), 657–674. https://doi.org/10.1177/001316447103100307

Mauranen, A. (2012). *Exploring ELF: Academic English Shaped by Non-native Speakers*. Cambridge University Press.

Maurizio, C. (2016). Clil : Content and Language Integrated Learning , an approach to teach and learn using the subjects as a vehicle. *V Symposium at Tunis Unviersity*, 1–30.

McDougald, J. S. (2015). Teachers' Attitudes, Perceptions and Experiences in CLIL: A Look at Content and Language. *Colombian Applied Linguistics Journal*, *17*(1), 25–41. https://doi.org/10.14483/udistrital.jour.calj.2015.1.a02

McGrath, C., Roxå, T., & Bolander Laksov, K. (2019). Change in a Culture of Collegiality and Consensus-seeking: A Double-edged Sword. *Higher Education Research and Development*, *38*(5), 1001–1014. https://doi.org/10.1080/07294360.2019.1603203

Mcguinness, C. (1999). *From Thinking Skills to Thinking Classrooms : A review and evaluation of approaches for developing pupils ' thinking* (Issue April). https://doi.org/10.13140/RG.2.1.4000.1129

McKnight, P. E., & Najab, J. (2010). Mann-Whitney U Test. In I. B. Weiner & W. E. Craighead (Eds.), *The Corsini Encyclopedia of Psychology* (p. 1). John Wiley & Sons, Ltd. https://doi.org/https://doi.org/10.1002/9780470479216.corpsy0524

Mehisto, P. (2012). Criteria for producing CLIL learning material. *Encuentro Revista de Investigación e Innovación En La Clase de Idiomas*, *21*, 15–33.

Mehisto, P., Marsh, D., & Frigols, M. J. (2008). *Uncovering CLIL: Content and Language Integrated Learning in Bilingual and Multilingual Education*. Macmilan Publisher Limited.

Méndez García, M. D. C., & Casal Madinabeitia, S. (2018). Towards an Identification of Provisos For the Implementation of Plurilingualism in Higher Education. *Porta Linguarum*, *Monograph*, 47–60. https://doi.org/10.30827/digibug.54160

Merzlykin, O. V., Topolova, I. Y., & Tron, V. V. (2018). Developing of key competencies by means of augmented reality at CLIL lessons. *CEUR Workshop Proceedings*, *2257*, 41–52. https://doi.org/10.31812/pedag.v51i0.3656

Mestre-Segarra, M. Á., & Ruiz-Garrido, M. F. (2022). Examining Students' Reflections on a Collaborative Online International Learning Project in an ICLHE Context. *System*, *105*, 102714. https://doi.org/https://doi.org/10.1016/j.system.2021.102714

Met, M. (1978). Curriculum Decision-making in Content-based Language Teaching. In J. Cenoz & F. Genesee (Eds.), *Beyond Bilingualism: Multilingualism and Multilingual Education* (pp. 35–63). Multilingual Matters Ltd.

Meyer, O., & Coyle, D. (2017). Pluriliteracies Teaching for Learning: conceptualizing progression for deeper learning in literacies development. *European Journal of Applied Linguistics*, *5*(2), 199–222. https://doi.org/doi:10.1515/eujal-2017-0006

Meyer, O., Coyle, D., Halbach, A., Schuck, K., & Ting, T. (2015). A Pluriliteracies Approach to Content and Language Integrated Learning – Mapping Learner Progressions in Knowledge Construction and Meaning Making. *Language, Culture and Curriculum*, *28*(1), 41–57.

Meyer, O., Coyle, D., Imhof, M., & Connolly, T. (2018). Beyond CLIL: Fostering Student and Teacher Engagement for Personal Growth and Deeper Learning. In J. de D. Martínez Agudo (Ed.), *Emotions in Second Language Teaching: Theory, Research and Teacher Education* (pp. 277–297). Springer International Publishing. https://doi.org/10.1007/978-3-319-75438-3_16

Mignot-Gérard, S., Sponem, S., Chatelain-Ponroy, S., & Musselin, C. (2022). Kaleidoscopic Collegiality and the Use of Performance Research Metrics. The Case of French Universities. *Higher Education*. https://doi.org/10.1007/s10734-022-00871-3

Miles, M. P., David Shepherd, C., Rose, J. M., & Dibben, M. (2015). Collegiality in business schools development of a collegiality measure and evaluations of its implications. *International Journal of Educational Management*, *29*(3), 322–333. https://doi.org/10.1108/IJEM-02-2014-0022

Minett-Smith, C., & Davis, C. L. (2019). Widening the Discourse on Team-teaching in Higher Education. *Teaching in Higher Education*, *25*(5), 579–594. https://doi.org/10.1080/13562517.2019.1577814

Mohan, B., & Van Naerssen, M. (1997). Understanding cause-effect: learning through language. *Forum*, *35*(4).

Moncada-Comas, B., & Block, D. (2019). CLIL-ised EMI in practice: issues arising. *The Language*

Learning Journal. https://doi.org/10.1080/09571736.2019.1660704

Montoya, S. I., & Salamanca, C. (2017). CLIL Approach Used as a Curriculum Internationalization Strategy in a Colombian Higher Education Institution. *Latin American Journal of Content &Amp; Language Integrated Learning*, *10*(1). https://doi.org/10.5294/laclil.v10i1.7368

Moolenaar, N. M. (2010). *Ties with Potential: Nature, Antecedents, and Consequences of Social Networks in School Teams*. Universiteit van Amsterdam.

Moomaw, W. E. (2005). *Teacher-Perceived Autonomy: A Construct Validation of the Teacher Autonomy Scale*. University of West Florida.

Moore, E., & Dooly, M. (2010). "How Do the Apples Reproduce (Themselves)?" How Teacher Trainees Negotiate Language, Content, and Membership in a CLIL Science Education Classroom at a Multilingual University. *Journal of Language, Identity {&} Education*, *9*(October 2015), 58–79. https://doi.org/10.1080/15348450903523591

Moratinos-Johnston, S., Juan-Garau, M., & Salazar-Noguera, J. (2018). The Effects of English-medium Instruction in Higher Education on Students' Perceived Level and Self-confidence in ELF. In C. Perez Vidal, S. Lopez-Serrano, J. Ament, & D. Homas-Wilhelm (Eds.), *Learning Context Effects: Study Abroad, Formal iIstruction and International Immersion Classrooms* (pp. 75–99). Language Science Press.

Moreira, G. (2020). Towards Language-friendly Higher Education: Language Policy Development at the University of Aveiro, Portugal. *Revista Lusofona de Educacao*, *47*, 115–127. https://doi.org/10.24140/issn.1645-7250.rle47.08

Moreira, J. M. (2009). Quetionários: Teoria e Prática. In *Reimpressão da Edição de Outubro 2004* (Edições Al).

Morgado, M., Arau Ribeiro, M., Coelho, M., Gonçalves, A., Silva, M., & Chumbo, I. (2015a). Experiências de Inovação Didática no Ensino Superior. In *CLIL in Portuguese Higher Education – Building a Community of Practice and Learning* (pp. 65–79). Gabinete do Secretário de Estado do Ensino Superior. https://dspace.uevora.pt/rdpc/bitstream/10174/17272/1/Livro_MEC_Set 2015.pdf

Morgado, M., Arau Ribeiro, M. del C., Coelho, M., Gonçalves, A. C. dos S., Silva, M. M. da, & Chumbo, I. (2015b). CLIL in Portuguese Higher Education: building a community of practice and learning. *Experiências de Inovação Didática No Ensino Superior*, 65–79.

Morgado, M., & Coelho, M. (2013). CLIL vs English as the Medium of Instruction: the Portuguese Polytechnic Higher Education Context. *Egitania Sciencia*, 7(12), 123–145.

Morgado, M., & Coelho, M. (2014). Learning different subjects by using other languages… or the other way round? The relevance of the CLIL approach. In M. C. Arau Ribeiro & I. A. Chumbo (Eds.), *Communication without Borders – Selected Papers from the International Conference Languages 2011: X Meeting of Aprolínguas and II Meeting of ReCLes.pt.* (pp. 153–162). Instituto Politécnico da Guarda.

Morgado, M., Coelho, M., Ribeiro, M. C., Silva, M., & Gonçalves, A. (2016). CLIL no Ensino Superior português: uma experiência pedagógica inovadora. In C. M. (Coord. . H. S. Almeida, P. Fonseca, S. Gonçalves (Ed.), *Inovação no Ensino Superior. Colecção Estratégias de Ensino e Sucesso Académico: Boas Práticas no Ensino Superior, Vol. 2* (pp. 177–194). Centro de Inovação e Estudo da Pedagogia no Ensino Superior (CInEP).

Morgado, M., Coelho, M., Ribeiro, M. del C. A., Albuquerque, A., Silva, M. M. da, Chorão, G., Cunha, S., Gonçalves, A., Carvalho, A. I., Régio, M., Faria, S., & Chumbo, I. (2014). *CLIL Training Guide: Creating a CLIL Learning Community in Higher Education*.

Morgado, M., Garcia, L., Régio, M., Kovatane Loch, A., Agnes;, P., Zverinova, J., Stefl, M., Cisterova, E., Diaz, M., Hrebackova, M., McDonnell, D., Kapila, P., & Pavelkova, H. (2020). *Interdisciplinary learning and teaching. Digital collaborative methodological guidelines*. INCOLLAB (Erasmus+ Strategic Partnership Project (KA2). Project number: 2019-1-CZ01-KA203-061163.

Morgado, M., Gaspar, M., & Régio, M. (2018). Interdisciplinarity and Teacher Collaboration in Higher education Engineering Courses: Lean Thinking Applied to Teaching and Learning. *Journal of Education Culture and Society*, *9*(2), 179–186.

https://doi.org/10.15503/jecs20182.179.186

Morgado, M., Gaspar, M., & Régio, M. (2019). Ensino Integrado de Inglês e de Tópicos de Engenharia Industrial: Três Anos de Trabalho Colaborativo de Ensino. In J. J. Gonçalves, Susana; Costa (Ed.), *Diversidade no Ensino Superior* (pp. 199–221). CINEP/IPC.

Morgado, M., Régio, M., & Gaspar, M. (2017). Content, Language and Intercultural Challenges in Engineering Education: (E-)Strategies to Improve Instructional Design. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 153–161. https://doi.org/10.18844/prosoc.v4i8.3026

Morton, T. (2022). Using cognitive discourse functions and comparative judgement to build teachers' knowledge of content and language integration for assessment in a bilingual education program. *Journal of Immersion and Content-Based Language Education*, *10*(2), 302–322. https://doi.org/10.1075/jicb.21017.mor

Morton, T., & Nashaat-Sobhy, N. (2023). Exploring Bases of Achievement in Content and Language Integrated Assessment in a Bilingual Education Program. *TESOL Quarterly*. https://doi.org/https://doi.org/10.1002/tesq.3207

Murillo, M. D. (2019). The Internationalization of Spanish Higher Education: An Interdisciplinary Approach to Initial Teacher Education for CLIL. In K. Tsuchiya & M. D. Pérez Murillo (Eds.), *Content and Language Integrated Learning in Sapanish and Japanese Contexts* (pp. 339–371). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-27443-6

Murphy, T. (2019). Classifying the Management of the Blend: a Typology of the Management of Blended Learning Course Development. *Tertiary Education and Management*, *25*(3), 211–224. https://doi.org/10.1007/s11233-019-09032-1

Nan Lin, A. D., & Ensel, W. M. (Eds.). (1986). *Social Support, Life Events, and Depression*. Academic Press. https://doi.org/https://doi.org/10.1016/C2013-0-11093-8

Nancarrow, S. A., Booth, A., Ariss, S., Smith, T., Enderby, P., & Roots, A. (2013). Ten Principles of Good Interdisciplinary Team Work. *Human Resources for Health*, *11*, 19. https://doi.org/10.1186/1478-4491-11-19

Navarro-Pablo, M., & García, E. (2018). Are CLIL students more motivated?: an analysis of affective factors and their relation to language attainment. *Porta Linguarum: Revista Internacional de Didáctica de Las Lenguas Extranjeras*, *29*(3), 71–90.

Nelson, T. H., Deuel, A., Slavit, D., & Kennedy, A. (2010). Leading Deep Conversations in Collaborative Inquiry Groups. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *83*(5), 175–179. https://doi.org/10.1080/00098650903505498

Newson, J. (1993). Constructing the 'Post-Industrial' University: Institutional Budgeting and University Corporate Links. In B. Altbach, P. and Johnstone (Ed.), *The Funding of Higher Education: International Perspectives* (pp. 285–204).

Nikula, T. (2015). Hands-on tasks in CLIL science classrooms as sites for subject-specific language use and learning. *System*, *54*, 14–27. https://doi.org/10.1016/j.system.2015.04.003

Nikula, T., & Moore, P. (2019). Exploring translanguaging in CLIL. *International Journal of Bilingual Education and Bilingualism*, *22*(2), 237–249. https://doi.org/10.1080/13670050.2016.1254151

Novotná, J., Hadj-Moussová, Z., & Hofmannová, M. (2001). Teacher Training for CLIL: Competences of a CLIL Teacher. In M. Hejný & J. Novotná (Eds.), *Proceedings SEMT 01* (pp. 122–126). Univerzita Karlova v Praze, Pedagogická fakulta.

Nunes, S. (2019). O Impacto Económico do IPCB na Economia Regional. *IPCB CAMPUS: Revista Do Instituto Politécnico de Castelo Branco*, *8*(14), 31–33.

Nunnaly, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd Ed.). McGrawHill.

O'Connor, P., & White, K. (2011). Similarities and Differences in Collegiality/Managerialism in Irish and Australian Universities. *Gender and Education*, *23*(7), 903–919. https://doi.org/10.1080/09540253.2010.549109

O'Dowd, R. (2018). The Training and Accreditation of Teachers for English Medium Instruction: An Overview of Practice in European Universities. *International Journal of Bilingual Education and Bilingualism*, *21*(5), 553–563. https://doi.org/10.1080/13670050.2018.1491945

O'Dwyer, F., & de Boer, M. (2015). Approaches to Assessment in CLIL Classrooms: Two Case Studies. *Language Learning in Higher Education*, *5*(2), 397–421. https://doi.org/doi:10.1515/cercles-2015-0019

Ochs, E., & Schieffelin, B. (1984). *Language Acquisition and Socialization: Three Developmental Stories and Their Implications*.

Olaskoaga-Larrauri, J., González-Laskibar, X., Barrenetxea-Ayesta, M., & Díaz-De-Basurto-Uraga, P. (2019). The Sign of the New Millennium. Organisational Changes and Job Satisfaction at Spanish Public Universities. *European Journal of Education*, *54*(1), 137–150. https://doi.org/10.1111/ejed.12314

Oliveira, P., Alves, J., Bailôa, S., Basto, M., Cadima, R. A. C. D., Correia, F., Costa, V., Cunha, J., Daniel, A., Dominguinhos, P., & others. (2019). Polytechnic Institutes in Portugal: research on the impact of twelve institutes on the local economy. *EAIR 41st Annual ForumA in Leiden*, 1–12.

Olsen, D., Maple, S. A., & Stage, F. K. (1995). Women and Minority Faculty Job Satisfaction. *The Journal of Higher Education*, *66*(3), 267–293. https://doi.org/10.1080/00221546.1995.11774780

Omar, M. N., & Pereira, R. (2020). The Characterization of Management Processes in Higher Education Institutions in Mozambique. Collegiality, Managerialism and Other Conjugated Factors. *Janus.Net*, *11*(2), 199–219. https://doi.org/10.26619/1647-7251.11.2.12

Ostovar-Nameghi, S. A., & Sheikhahmadi, M. (2016). From Teacher Isolation to Teacher Collaboration: Theoretical Perspectives and Empirical Findings. *English Language Teaching*, *9*(5), 197–205. https://doi.org/10.5539/elt.v9n5p197

Otto, A. (2017). *Assessment issues in CLIL : What you've been wondering but were afraid to ask*. 1–13.

Pan, B. (2010). Online Travel Surveys and Response Patterns. In *Journal of Travel Research* (Vol. 49, pp. 121–135). https://doi.org/10.1177/0047287509336467

Parker, G. (Nee R. (2015). Teachers' Autonomy. *Research in Education*, *93*(1), 19–33. https://doi.org/10.7227/RIE.0008

Parker, R. (1985). The "Language across the Curriculum" Movement: A Brief Overview and Bibliography. *College Composition and Communication*, *36*(2), 173–177. https://doi.org/10.2307/357438

Paulus, T., Woods, M., Atkins, D. P., & Macklin, R. (2017). The Discourse of QDAS: Reporting Practices of ATLAS.ti and NVivo Users With Implications For Best Practices. *International Journal of Social Research Methodology: Theory & Practice*, *20*(1), 35–47. https://doi.org/10.1080/13645579.2015.1102454

Pavón Vázquez, V. (2014). Enhancing the Quality of CLIL: Making the Best of the Collaboration Between Language Teachers and Content Teachers. *Encuentro Revista de Investigación e Innovación En La Clase de Idiomas*, *23*, 115–127.

Pávon Vázquez, V., & Ellison, M. (2013). Examining Teacher Roles and Competences in Content and Language Integrated Learning (CLIL). *Linguarum Arena*, *4*, 65–78.

Pawlak, M. (2011). The Role of In-service Training for Language Teachers in The Domain of Language Competence. *Glottodidactica*, *38*, 21–30. https://doi.org/10.14746/gl.2011.38.2

Pearson, L. C., & Hall, B. W. (1993). Initial Construct Validation of the Teaching Autonomy Scale. *The Journal of Educational Research*, *86*(3), 172–178. https://doi.org/10.1080/00220671.1993.9941155

Pearson, L. C., & Moomaw, W. (2005). The Relationship between Teacher Autonomy and Stress, Work Satisfaction, Empowerment, and Professionalism. *Educational Research Quarterly*, *29*(1), 37–53.

Pearson, L. C., & Moomaw, W. (2006). Continuing Validation of the Teaching Autonomy Scale. *The Journal of Educational Research*, *100*(1), 44–51. https://doi.org/10.3200/JOER.100.1.44-51

Pecorari, D., & Malmström, H. (2018). At the Crossroads of TESOL and English Medium Instruction. *TESOL Quarterly*, *52*(3), 497–515. https://doi.org/https://doi.org/10.1002/tesq.470

Pellicer, S., Arnal-Bailera, A., Marco-Buzunariz, M. A., & Tomás-Aragonés, L. (2016). The CLIL approach in higher education: A Collaborative small-scale experience (with a focus on mathematics and psychology). *Encuentro*, *25*(December), 87–101. https://bit.ly/2QdYIUW

Peplau, L. A., Miceli, M., & Morasch, B. (1982). Loneliness and Self-Evaluation. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 135–151). John Wiley & Sons.

Pereira, C. M., Piquer-Píriz, A. M., & Zverinova, J. (2021). Promotion of Autonomy and Self-regulation in Higher Education Students: Construction of a Teaching and Learning Module Insert in the Project "Interdisciplinary Collaborative Approaches to Learning and Teaching. *Millenium - Journal of Education, Technologies, and Health*, *2*(15), 11–21. https://doi.org/10.29352/mill0215.23262

Pérez-Vidal, C. (2013). 4. Perspectives and Lessons from the Challenge of CLIL Experiences. In C. Abello-Contesse, P. M. Chandler, M. D. López-Jiménez, & R. Chacón-Beltrán (Eds.), *Building on Experience* (pp. 59–82). Multilingual Matters. https://doi.org/doi:10.21832/9781783090716-008

Pérez Cañado, M. L. (2012). CLIL Research in Europe: Past, Present, and Future. *International Journal of Bilingual Education and Bilingualism*, *15*(3), 315–341. https://doi.org/10.1080/13670050.2011.630064

Pérez Cañado, M. L. (2016a). Are Teachers Ready for CLIL? Evidence From a European Study. *European Journal of Teacher Education*, *39*(2), 202–221. https://doi.org/10.1080/02619768.2016.1138104

Pérez Cañado, M. L. (2016b). Teacher Training Needs for Bilingual Education: In-service Teacher Perceptions. *International Journal of Bilingual Education and Bilingualism*, *19*(3), 266–295. https://doi.org/10.1080/13670050.2014.980778

Pérez Cañado, M. L. (2018). Innovations and Challenges in CLIL Teacher Training. *Theory into Practice*, *57*(3), 1–10. https://doi.org/10.1080/00405841.2018.1492238

Pérez Cañado, M. L. (2020a). Addressing the Research Gap in Teacher Training for EMI: An Evidence-based Teacher Education Proposal in Monolingual Contexts. *Journal of English for Academic Purposes*, *48*. https://doi.org/https://doi.org/10.1016/j.jeap.2020.100927

Pérez Cañado, M. L. (2020b). Implementing Bilingual Education in Monolingual Contexts: Lessons Learned and Ways Forward. *Language Learning Journal*, *48*(1), 1–3. https://doi.org/10.1080/09571736.2020.1695622

Pérez Cañado, M. L. (2021). CLIL-ising EMI: An Analysis of Student and Teacher Training Needs in Monolingual Contexts. In C. Hemmi & D. L. Banegas (Eds.), *International Perspectives on CLIL* (pp. 171–191). Springer International Publishing. https://doi.org/10.1007/978-3-030-70095-9_9

Piccardo, E. (2018a). Plurilingualism: Vision, Conceptualization, and Practices. In P. P. Trifonas & T. Aravossitas (Eds.), *Handbook of Research and Practice in Heritage Language Education* (pp. 207–225). Springer International Publishing. https://doi.org/10.1007/978-3-319-44694-3_47

Piccardo, E. (2018b). "We are all (potential) plurilinguals": Plurilingualism as an Overarching, Holistic Concept. In *OLBI Working Papers* (Vol. 10, pp. 183–204). https://doi.org/10.18192/olbiwp.v10i0.3825

Piquer-Píriz, A. M. (2023). *E-learning in English Medium Instruction (EMI): Academic Language for University Students*. Peter Lang Verlag. https://doi.org/10.3726/b20195

Piquer-Píriz, A. M., & Castellano-Risco, I. O. (2021). Lecturers' Training Needs in EMI

Programmes: Beyond Language Competence. *Revista Alicantina de Estudios Ingleses*, *18055*(34), 83–105. https://doi.org/10.14198/raei.2021.34.05

Piquer-Píriz, A. M., Morgado, M., & Zverinova, J. (2021). Interdisciplinary collaborative approaches in Higher Education : Open Educational Resources for Subject and Language Lecturers. *Verbeia*, *V*(5), 81–126.

Pirrung, L. (2014). Investigating the Use of Code Switching in CLIL. *Conference Proceedings. ICT for Language Learning*.

Pitt, A. (2010). On Having One's Chance: Autonomy as Education's Limit. *Educational Theory*, *60*(1), 1–18. https://doi.org/https://doi.org/10.1111/j.1741-5446.2009.00342.x

Pons-Seguí, L. (2020). Are pre-service foreign language teachers ready for CLIL in Catalonia? A needs analysis from stakeholders' perspective. *Porta Linguarum*, *33*, 279–295. https://bit.ly/3lwWUSK

Popplewell, S., Martin, L., Kragler, S., & Hall, V. (1998). Collegiality in Higher Education: Taking the Risk and Making it Work. In B. Sturtevant, J. Dugan, P. Linder, & W. M. Linek (Eds.), *The Twentieth Yearbook A Peer Reviewed Publication of The College Reading Association 1998* (pp. 282–290). College Reading Association.

Preacher, K., & Hayes, A. (2008). Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models. *Behavior Research Methods, Instruments, & Computers : A Journal of the Psychonomic Society, Inc*, *36*, 717–731. https://doi.org/10.3758/BF03206553

Puranitee, P., Kaewpila, W., Heeneman, S., van Mook, W. N. K. A., & Busari, J. O. (2022). Promoting a Sense of Belonging, Engagement, and Collegiality to Reduce Burnout: A Mixed Methods Study Among Undergraduate Medical Students in a Non-Western, Asian Context. *BMC Medical Education*, *22*(1). https://doi.org/10.1186/s12909-022-03380-0

Régio, M., Gaspar, M., Farinha, L., & Morgado, M. (2017). Industry 4.0 and Telecollaboration to Promote Cooperation Networks: A Pilot Survey in the Portuguese Region of Castelo Branco. *International Journal of Mechatronics and Applied Mechanics*, *1*, 243–248.

Régio, M., Gaspar, M., & Morgado, M. (2019a). Instructional Design in Electrotechnical Engineering: A Case Study on Integrated Online Approaches. *Lecture Notes in Electrical Engineering*, *505*, 1125–1130. https://doi.org/10.1007/978-3-319-91334-6

Régio, M., Gaspar, M., & Morgado, M. (2019b). Modelos de Avaliação Colaborativa: Evolução Analógico/ Digital. In S. Gonçalves & C. Fidalgo (Eds.), *Pedagogia no Ensino Superior: Colectânea de Estudos* (pp. 240–255). CINEP/ IPC.

Reips, U. D. (2002). Standards for Internet-based Experimenting. *Experimental Psychology*, *49*, 243–256. https://doi.org/10.1026//1618-3169.49.4.243

Reljić, G., Ferring, D., & Martin, R. (2015). A Meta-Analysis on the Effectiveness of Bilingual Programs in Europe. *Review of Educational Research*, *85*(1), 92–128. https://doi.org/10.3102/0034654314548514

Renau Renau, M. L., & Mas Martí, S. (2019). A CLIL approach: Evolution and current situation in Europe and in Spain. *International Journal of Science and Research*, *8*(12), 1110–1119. https://doi.org/10.21275/ART20203503

Ribeiro, M. del C. A., & Coelho, M. (2019). Transference and transformation for internationalisation in higher education: A case study of Portugal. *European Journal of Language Policy*, *11*(1), 71–94. https://doi.org/https://doi.org/10.3828/ejlp.2019.5

Richards, J. C. (2010). Competence and Performance in Language Teaching. *RELC Journal*, *41*(2), 101–122. https://doi.org/10.1177/0033688210372953

Richards, L. (2020). *Handling Qualitative Data. A Practical Guide* (Fourth Edi). SAGE Publications.

Ringle, C. M., Wende, S., & Becker, J.-M. (2022). *SmartPLS 4. Boenningstedt: SmartPLS*.

Ritz, R., Saglamer, G., Brudermann, U., & Newton, J. (2011). *Follow-up Evaluation Report. Institutional Evaluation Programme*.

Roberts, P. (2013). Academic Dystopia: Knowledge, Performativity, and Tertiary Education. *Review of Education, Pedagogy, and Cultural Studies*, *35*(1), 27–43. https://doi.org/10.1080/10714413.2013.753757

Robertson, M. J. (2016). Team Modes and Power: Supervision of Doctoral Students. *Higher Education Research \& Development*, *36*(2), 358–371. https://doi.org/10.1080/07294360.2016.1208157

Romeu, T., Guitert, M., & Sangrà, A. (2015). Teacher collaboration network in Higher Education: reflective visions from praxis. *Innovations in Education and Teaching International*. https://doi.org/10.1080/14703297.2015.1025807

Ross, R. D. (1977). Faculty Qualifications and Collegiality: The Role of Influence in University Decision-making. *Research in Higher Education*, *6*(3), 201–214. https://doi.org/10.1007/BF00991286

Ruiz-Garrido, M., & Gómez, I. F. (2009). Needs analysis in a CLIL context: A Transfer from ESP. *CLIL Practice: Perspectives from the Field*, *January*, 179–188.

Ruiz-Madrid, M. N., & Fortanet-Gómez, I. (2022). Teacher Professional Development for the Integration of Content and Language in Higher Education. *Innovation in Language Learning and Teaching*, *16*(4–5), 277–280. https://doi.org/10.1080/17501229.2022.2123678

Ruiz-Madrid, N., & Fortanet-Gómez, I. (2023). Integrating content and language in higher education. *System*, *115*, 103073. https://doi.org/https://doi.org/10.1016/j.system.2023.103073

Ruiz de Zarobe, Y., & Lyster, R. (2018). Content and language integration in higher education: instructional practices and teacher development. *International Journal of Bilingual Education and Bilingualism*, *21*(5), 523–526. https://doi.org/10.1080/13670050.2018.1491950

Sacks, S. R., & Eisenstein, H. (1979). Feminism and Psychological Autonomy: A Study in Decision Making. *The Personnel and Guidance Journal*, *57*(8), 419–423. https://doi.org/https://doi.org/10.1002/j.2164-4918.1979.tb05426.x

Salaberri-Ramiro, M. S., & Sánchez-Pérez, M. D. M. (2018). Motivations of Higher Education Students to Enrol in Bilingual Courses. *Porta Linguarum*, *Monográfico III*, 61–74. https://doi.org/10.30827/digibug.54161

Salaberri-Ramiro, M. S., & Sánchez-Pérez, M. del M. (2022). Students' Perceptions of the Use of English in Higher-Education Bilingual Programs. *Latin American Journal of Content & Language Integrated Learning*, *14*(2), 263–291. https://doi.org/10.5294/laclil.2021.14.2.4

Sampaio, C., Régio, M., & Morgado, M. (2021). Implementing Integrated Content and Language in Higher Education in Accounting Classes: Implication for International Business Teaching. *Journal of Teaching in International Business*, *32*(3–4), 236–261. https://doi.org/10.1080/08975930.2022.2033668

San Isidro, X. (2018). Innovations and Challenges in CLIL Implementation in Europe. *Theory Into Practice*, *57*(3), 185–195. https://doi.org/10.1080/00405841.2018.1484038

Sanad, H. A., & Ahmed, M. (2017). Using Content and Language Integrated Learning (CLIL) to Develop EFL Reading Comprehension Skills, Vocabulary Skills and Retention among College Students. *Journal of Research in Curriculum Instruction and Educational Tecnology*, *3*(4), 101–131.

Sánchez-García, R., & Pavón-Vázquez, V. (2021). Students' Perceptions on the Use of Project-Based Learning in CLIL: Learning Outputs and Psycho-Affective Considerations. *Latin American Journal of Content &Amp; Language Integrated Learning*, *14*(1), 69–98. https://doi.org/10.5294/laclil.2021.14.1.3

Sandholtz, J. H. (2000). Interdisciplinary Team Teaching as a Form of Professional Development. *Teacher Education Quarterly*, *27*(3), 39–54.

Santiago, R., Carvalho, T., Amaral, A., & Meek, V. L. (2006). Changing Patterns in the Middle Management of Higher Education Institutions: The Case of Portugal. *Higher Education*,

52(2), 215–250. https://doi.org/10.1007/s10734-004-2747-3

Sarstedt, M., Hair, J. F., Cheah, J.-H., Becker, J.-M., & Ringle, C. M. (2019). How to Specify, Estimate, and Validate Higher-order Constructs in PLS-SEM. *Australasian Marketing Journal (AMJ)*, *June*. https://doi.org/10.1016/j.ausmj.2019.05.003

Scager, K., Boonstra, J., Peeters, T., Vulperhorst, J., & Wiegant, F. (2016). Collaborative Learning in Higher Education: Evoking Positive Interdependence. *CBE Life Sciences Education*, *15*(4). https://doi.org/10.1187/cbe.16-07-0219

Schecter, S. R., & Cummins, J. (2004). *Multilingual Education in Practice: Using Diversity as a Resource*. Pearson Education Canada.

Schleppegrell, M., & O'Hallaron, C. (2011). Teaching Academic Language in L2 Secondary Settings. *Annual Review of Applied Linguistics*, *31*, 3–18.

Schlichte, J., Yssel, N., & Merbler, J. (2005). Pathways to Burnout: Case Studies in Teacher Isolation and Alienation. *Preventing School Failure: Alternative Education for Children and Youth*, *50*(1), 35–40. https://doi.org/10.3200/psfl.50.1.35-40

Schwab, G. (2015). Teaching Methods and Approaches: Looking into a Unique CLIL Classroom in Germany. In C. J. Jenks & P. Seedhouse (Eds.), *International Perspectives on ELT Classroom Interaction* (pp. 10–27). Palgrave Macmillan UK. https://doi.org/10.1057/9781137340733_2

Scoles, J., Huxham, M., Sinclair, K., Lewis, C., Jung, J., & Dougall, E. (2021). The Other Side of a Magic Mirror: Exploring Collegiality in Student and Staff Partnership Work. *Teaching in Higher Education*, *26*(5), 712–727. https://doi.org/10.1080/13562517.2019.1677588

Sehrawat, J. (2014). Teacher Autonomy : Key to Teaching Success. *Bhartiyam International Journal of Education & Research.*, *4*(1), 1–8.

Sercu, L. (2006). The Foreign Language and Intercultural Competence Teacher: The Acquisition of a New Professional Identity. *Intercultural Education*, *17*(1), 55–72. https://doi.org/10.1080/14675980500502321

Shah, M. (2011). The Dimensionality of Teacher Collegiality and the Development of Teacher Collegiality Scale. *International Journal of Education*, *3*(2). https://doi.org/10.5296/ije.v3i2.958

Shaw, J. (2008). Team-teaching as Negotiating Autonomy and Shared Understandings of What We Are Doing. In T. Lamb & H. Reinders (Eds.), *Learner and teacher autonomy: Concepts, realities, and response* (pp. 187–204). John Benjamins Publishing Company.

Sherer, P., Shea, T., & Kristensen, E. (2003). Online Communities of Practice: A Catalyst for Faculty Development. *Innovative Higher Education*, *27*(3), 183–194. https://doi.org/10.1023/A:1022355226924

Shmueli, G., Ray, S., Velasquez Estrada, J. M., & Chatla, S. B. (2016). The elephant in the Room: Predictive Performance of PLS Models. *Journal of Business Research*, *69*(10), 4552–4564. https://doi.org/10.1016/j.jbusres.2016.03.049

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive Model Assessment in PLS-SEM: Guidelines for Using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Siccama, C. J., & Penna, S. (2008). Enhancing Validity of a Qualitative Dissertation Research Study by Using NVIVO. *Qualitative Research Journal*, *8*(2), 91–103. https://doi.org/10.3316/QRJ0802091

Silva, M., & Albuquerque, A. (2014). TerminoCLIL: A Terminology-based Approach to CLIL. *CLAVIER Workshop: LSP Research, Teaching and Translation Across Languages and Cultures*. https://doi.org/10.7359/791-2016-silv

Skinnari, K., & Nikula, T. (2017). Teachers' Perceptions on the Changing Role of Language in the Curriculum. *European Journal of Applied Linguistics*, *5*(2), 223–244. https://doi.org/doi:10.1515/eujal-2017-0005

Smit, U., & Dafouz, E. (2012). Integrating Content and Language in Higher Education. An Introduction to English-medium Policies , Conceptual Issues and Research Practices Across Europe. *AILA Review*, *25*(September 2015), 1–12. https://doi.org/10.1075/aila.25.01smi

Smith, R. (2000). Starting With ourselves: Teacher-Learner Autonomy in Language Learning. In B. Sinclair, I. McGrath, & T. Lamb (Eds.), *Learner autonomy, teacher autonomy: future directions* (pp. 89–99). Longman.

Smith, R. (2008). Teacher-learner Autonomy: Programme Goals and Student-teacher Contrusts. In T. Lamb & H. Reinders (Eds.), *Learner and Teacher Autonomy: Concept, Realities and Responses.* (pp. 83–101). John Benjamins Publishing Company.

Smyth, J. (1989). Collegiality as a Counter Discourse to the Intrusion of Corporate Management into Higher Education. *Journal of Tertiary Education Administration*, *11*(2), 143–155. https://doi.org/10.1080/0157603890110203

Smyth, J. (1991). International Perspectives on Teacher Collegiality: A Labour Process Discussion Based on the Concept of Teachers' Work. *British Journal of Sociology of Education*, *12*(3), 325–346. https://doi.org/10.1080/0142569910120304

Sokolova, N. (2012). Teacher Language Competence Description: Towards a New Framework of Evaluation. *Quality of Higher Education*, *9*, 75–97. https://doi.org/https://dx.doi.org/10.7720/1822-1645.9.3

Somers, T., & Llinares, A. (2018). Students' motivation for content and language integrated learning and the role of programme intensity. *International Journal of Bilingual Education and Bilingualism*, *24*(6), 839–854. https://doi.org/10.1080/13670050.2018.1517722

Sorcinelli, M. D., Austin, A. E., Eddy, P. L., & Beach, A. L. (2006). *Creating the Future of Faculty Development: Learning From the Past, Understanding the Present* (1st Editio). Jossey-Bass.

Sotiriadou, P., Brouwers, J., & Tuan-Anh, L. (2014). Choosing a Qualitative Data Analysis Tool: A Comparison of NVivo and Leximancer. *Annals of Leisure Research*, *17*(2), 218–234. https://doi.org/10.1080/11745398.2014.902292

Street, M. S., & Licata, J. W. (1989). Supervisor Expertise: Resolving the Dilemma Between Bureaucratic Control and Teacher Autonomy. *Planning and Changing*, *20*, 97–107.

Strong, L. E. G., & Yoshida, R. K. (2014). Teachers' Autonomy in Today's Educational Climate: Current Perceptions From an Acceptable Instrument. *Educational Studies*, *50*(2), 123–145. https://doi.org/10.1080/00131946.2014.880922

Stupnisky, R. H., Hall, N. C., Daniels, L. M., & Mensah, E. (2017). Testing a Model of Pretenure Faculty Members' Teaching and Research Success: Motivation as a Mediator of Balance, Expectations, and Collegiality. *Journal of Higher Education*, *88*(3), 376–400. https://doi.org/10.1080/00221546.2016.1272317

Su, S., & Baird, K. (2017). The impact of collegiality amongst Australian accounting academics on work-related attitudes and academic performance. *Studies in Higher Education*, *42*(3), 411–427. https://doi.org/10.1080/03075079.2015.1049142

Sulistiyo, U. (2016). English Language Teaching and EFL Teacher Competence in Indonesia. *Proceedings of the Fourth International Seminar OnEnglish Language and Teaching (ISELT-4)*, 396–406.

Suwannoppharat, K., & Chinokul, S. (2015). Applying CLIL to English Language Teaching in Thailand: Issues and Challenges. *Latin American Journal of Content &Amp; Language Integrated Learning*, *8*(2), 237–254. https://doi.org/10.5294/3163

Swain, M. (2000). The Output Hypothesis and Beyond: Mediating Acquisition Through Collaborative Dialogue. In J. P. Lantolf (Ed.), *Sociocultural Theory and Second Language Learning* (pp. 97–114). Oxford University Press.

Sylvén, L. K. (2013). CLIL in Sweden – why does it not work? A metaperspective on CLIL across contexts in Europe. *International Journal of Bilingual Education and Bilingualism*, *16*(3), 301–320. https://doi.org/10.1080/13670050.2013.777387

Sylvén, L., & Thompson, A. (2015). Language Learning Motivation and CLIL: Is There a

Connection? *Journal of Immersion and Content-Based Language Education*, *3*(1), 28–50. https://doi.org/https://doi.org/10.1075/jicb.3.1.02syl

Tannenbaum, P. H., & Greenberg, B. S. (1968). Mass Communication. *Annual Review of Psychology*, *19*(1), 351–386. https://doi.org/10.1146/annurev.ps.19.020168.002031

Teo, T., Tsai, L. T., & Yang, C.-C. (2013). Applying Structural Equation Modeling (SEM) in Educational Research: An Introduction. In M. S. Khine, L. C. Ping, & D. Cunningham (Eds.), *Application of Structural Equation Modeling in Educational Research and Practice* (pp. 3–21). Sense Publishers.

Thomson, A. M., Perry, J. L., & Miller, T. K. (2007). Conceptualizing and Measuring Collaboration. *Journal of Public Administration Research and Theory*, *19*(1), 23–56. https://doi.org/10.1093/jopart/mum036

Tight, M. (2014). Collegiality and Managerialism: A False Dichotomy? Evidence From the Higher Education Literature. *Tertiary Education and Management*, *20*(4), 294–306. https://doi.org/10.1080/13583883.2014.956788

Tompkins, F. L. (2022). Socioeconomic Status, English Exposure and CLIL Motivation in High and Low Exposure CLIL Groups. *CLIL Journal of Innovation and Research in Plurilingual and Pluricultural Education*, *5*(1), 41–52. https://doi.org/10.5565/rev/clil.67

Tort-Moloney, D. (1997). Teacher Autonomy: A Vygotskian Theoretical Framework. *CLCS Occasional Paper N.º 48*, *48*, 1–54. https://goo.gl/ow0ZuN

Tower, C. A., & Gallagher, A. S. (2008). Why Collegiality Matters. *The Chronicle of Higher Education*.

Trigwell, K. (2005). Teaching-research Relations, Cross-disciplinary Collegiality and Student Learning. *Higher Education*, *49*(3), 235–254. https://doi.org/10.1007/s10734-004-6665-1

Tsuchiya, K., & Pérez Murillo, M. D. (2015). Comparing the language policies and the students' perceptions of CLIL in tertiary education in Spain and Japan. *Latin American Journal of Content and Language Integrated Learning*, *8*(1), 25–35. https://doi.org/10.5294/laclil.2015.8.1.3

Uchiyama, K. P., & Radin, J. L. (2009). Curriculum Mapping in Higher Education: A Vehicle for Collaboration. *Innovative Higher Education*, *33*(4), 271–280. https://doi.org/10.1007/s10755-008-9078-8

Valcke, J., & Wilkinson, R. (2017). Introduction - ICLHE, Professional Practice, Disruption, and Quality. In *Integrating Content and Language in Higher Education* (pp. 15–24). Peter Lang.

Valdés, G., Poza, L., & Brooks, M. D. (2015). Language Acquisition in Bilingual Education. In W. Wright, S. Boun, & O. Garcia (Eds.), *The Handbook of Bilingual and Multilingual Education*. John Wiley & Sons, Ltd. https://doi.org/https://doi.org/10.1002/9781118533406.ch4

Van de Craen, P., Ceuleers, E., & Mondt, K. (2007). Cognitive development and bilingualism in primary schools: teaching maths in a CLIL environment. In D. Marsh & D. Wolff (Eds.), *Diverse Contexts – Converging Goals. CLIL in Europe* (pp. 185–200). Peter Lang.

Van Eck, N. J., & Waltman, L. (2010). *VOSViewer: Visualizing Scientific Landscapes [Software]* (1 .6.16).

van Ek, J. A. (1986). *Objectives for Foreign Language Learning* (Issue 1). Council of Europe.

van Kampen, E., Admiraal, W., & Berry, A. (2018). Content and Language Integrated Learning in the Netherlands: Teachers' Self-reported Pedagogical Practices. *International Journal of Bilingual Education and Bilingualism*, *21*(2), 222–236. https://doi.org/10.1080/13670050.2016.1154004

Vangrieken, K. (2018). *The Teacher or the Team? Towards an Inclusive Understanding of Individual and Collaborative Work*. Ku Leuven.

Vangrieken, K., Dochy, F., Raes, E., & Kyndt, E. (2015). Teacher Collaboration: A Systematic Review. *Educational Research Review*, *15*, 17–40. https://doi.org/https://doi.org/10.1016/j.edurev.2015.04.002

Vangrieken, K., Grosemans, I., Dochy, F., & Kyndt, E. (2017). Teacher Autonomy and Collaboration: A Paradox? Conceptualising and Measuring Teachers' Autonomy and Collaborative Attitude. *Teaching and Teacher Education*, *67*, 302–315. https://doi.org/https://doi.org/10.1016/j.tate.2017.06.021

VanWynsberghe, R., & Khan, S. (2007). Redefining Case Study. *International Journal of Qualitative Methods*, *6*(2), 80–94. https://doi.org/10.1177/160940690700600208

Vega, M., & Moscoso, M. (2019). Challenges in the Implementation of CLIL in Higher Education: From ESP to CLIL in the Tourism Classroom. *Latin American Journal of Content & Language Integrated Learning*, *12*(1), 144–176. https://doi.org/10.5294/laclil.2019.12.1.7

Verspoor, M., de Bot, K., & Xu, X. (2015). The effects of English bilingual education in the Netherlands. *Journal of Immersion and Content-Based Language Education*, *3*(1), 4–27. https://doi.org/https://doi.org/10.1075/jicb.3.1.02syl

Victorino, C., Nylund-Gibson, K., & Conley, S. (2018). Prosocial Behavior in the Professoriate: A Multi-level Analysis of Pretenured Faculty Collegiality and Job Satisfaction. *International Journal of Educational Management*, *32*(5), 783–798. https://doi.org/10.1108/IJEM-09-2017-0258

Vilkanciene, L. (2011). CLIL in Tertiary Education: Does it Have Anything to Offer? *Studies About Languages*, *0*(18), 111–116. https://doi.org/10.5755/j01.sal.0.18.418

Vilkancienė, L. (2011). CLIL in Tertiary Education: Does it Have Anything to Offer? *Studies About Languages*, *18*, 111–115. https://doi.org/http://dx.doi.org/10.5755/j01.sal.0.18.418

Villa, R. A., Thousand, J. S., & Nevin, A. I. (2008). *A Guide to Co-Teaching: New Lessons and Strategies to Facilitate Student Learning*. SAGE Publications.

Villabona, N., & Cenoz, J. (2022). The integration of content and language in CLIL: a challenge for content-driven and language-driven teachers. *Language, Culture and Curriculum*, *35*(1), 36–50. https://doi.org/10.1080/07908318.2021.1910703

Viskovic, A. (2006). Becoming a Tertiary Teacher: Learning in Communities of Practice. *Higher Education Research and Development*, *25*(4), 323–339. https://doi.org/10.1080/07294360600947285

Vlasenko, K., Chumak, O., Sitak, I., Kalashnykova, T., & Achkan, V. (2020). CLIL Method to Increase Students' Motivation in Studying Mathematics at Higher Technical School. *Universal Journal of Educational Research*, *8*(2), 362–370. https://doi.org/10.13189/ujer.2020.080205

Vo, T., Truong, D., & Nguyen, P. (2023). The impact of digital technology on content and language integrated learning in higher education: a systematic review of literature. *ICTE Conference Proceedings*, *3*, 137–147. https://doi.org/10.54855/ictep.23311

Volkwein, J. F., & Parmley, K. (2000). Comparing Administrative Satisfaction in Public and Private Universities. *Research in Higher Education*, *41*(1), 95–116. https://doi.org/10.1023/A:1007094429878

Vollmer, H. J. (2006). Language Across the Curriculum (Lac). *Languages of Schooling: Towards a Framework for Europe*. https://doi.org/10.52458/9789391842345.2022.tb

Vygotsky, L. S. (1978). *Mind in Society*. Harvard University Press.

Wächter, B., & Maiworm, F. (Eds.). (2014). *English-taught Programmes in European Higher Education: The State of Play in 2014*. Lemmens.

Wahyuningsih, N., Widiati, U., & Anugerahwati, M. (2016). Teachers' Attitudes Toward the Use of Clil in Esp Classes. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, *1*(9), 1853—1863-1863. https://doi.org/10.17977/jp.v1i9.6845

Wannagat, U. (2007). Learning through L2 – Content and Language Integrated Learning (CLIL) and English as Medium of Instruction (EMI). *International Journal of Bilingual Education and Bilingualism*, *10*(5), 663–682. https://doi.org/10.2167/beb465.0

Welsh, E. (2002). Dealing with Data: Using NVivo in the Qualitative Data Analysis Process. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *3*(2), 345–357.

https://doi.org/https://doi.org/10.17169/fqs-3.2.865

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press.

Wenger, E. (2000). Communities of Practice and Social Learning Systems. *Organization*, *7*(2), 225–246. https://doi.org/10.1177/135050840072002

Wenger, E. (2010). Communities of Practice and Social Learning Systems: The Career of a Concept. In *Social Learning Systems and Communities of Practice* (pp. 179–198). https://doi.org/10.1007/978-1-84996-133-2

Wenger, E. (2011). *Communities of Practice: A Brief Introduction* (pp. 1–6). http://wenger-trayner.com/Intro-to-CoPs/

Wilches, J. (2007). Teacher Autonomy: A Critical Review of the Research and Concept Beyond Applied Linguistics. *Íkala, Revista de Lenguaje y Cultura*, *12*(18), 245–275.

Wilkinson, R. (2013). English-medium Instruction at a Dutch University: Challenges and Pitfalls. In J. M. S. A. Doiz, D. Lasagabaster (Ed.), *English-medium Instruction at Universities. Global Challenges* (pp. 3–24). Multilingual Matters.

Wilkinson, R. (2018). Content and language integration at universities? Collaborative reflections. *International Journal of Bilingual Education and Bilingualism*, *21*(5), 607–615. https://doi.org/10.1080/13670050.2018.1491948

Willner, R. G. (1990). *Images of the Future Now: Autonomy, Professionalism, and Efficacy*. Fordham University.

Wolff, D. (2003). Integrating Language and Content in the Language Classroom: Are Transfer of Knowledge and of Language Ensured? *ASp*, *41–42*, 35–46. https://doi.org/10.4000/asp.1154

Wood, D. J., & Gray, B. (1991). Toward a Comprehensive Theory of Collaboration. *Journal of Applied Behavioral Science*, *27*(2), 139–162.

Wood, T., Cobb, P., & Yackel, E. (1991). Change in Teaching Mathematics: A Case Study. *American Educational Research Journal*, *28*(3), 587–616. https://doi.org/10.3102/00028312028003587

Woodland, R., Lee, M. K., & Randall, J. (2013). A Validation Study of the Teacher Collaboration Assessment Survey. *Educational Research and Evaluation*, *19*(5), 442–460. https://doi.org/10.1080/13803611.2013.795118

Woźniak, M., & Crean, F. (2021). ``How Do I Find the Limit?'': Risk Management in EMI and CLIL at University. In M. L. Carrió-Pastor & B. Bellés-Fortuño (Eds.), *Teaching Language and Content in Multicultural and Multilingual Classrooms: CLIL and EMI Approaches* (pp. 31–61). Springer International Publishing. https://doi.org/10.1007/978-3-030-56615-9_3

Wright, K. B. (2005). Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services. *Journal of Computer-Mediated Communication*, *10*(3), 0. https://doi.org/10.1111/j.1083-6101.2005.tb00259.x

Yang, W. (2015). Content and language integrated learning next in Asia: evidence of learners' achievement in CLIL education from a Taiwan tertiary degree programme. *International Journal of Bilingual Education and Bilingualism*, *18*(4), 361–382. https://doi.org/10.1080/13670050.2014.904840

Yang, W. (2016). ESP vs CLIL: A Coin of Two Sides or a Continuum of Two Extremes? *ESP Today Journal of English for Specific Purposes at Tertiary Level*, *4*(1), 43–68.

Yassine-Diab, N., & Monnier, N. (2013). Professional Autonomy of French Higher Education Language Teachers: at the Crossroads of Social Sciences and Humanities. *Societal Studies*, *5*(3), 837–848. https://doi.org/10.13165/sms-13-5-3-09

Yin, R. K. (2009). Case Study Research: Design and Methods. In *Essential Guide to Qualitative Methods in Organizational Research* (Vol. 24, Issue 3). https://doi.org/10.1080/09500790.2011.582317

Yin, R. K. (2013). Validity and Generalization in Future Case Study Evaluations. *Evaluation*, *19*(3), 321–332. https://doi.org/10.1177/1356389013497081

Yokoyama, K. (2006). The Effect of the Research Assessment Exercise on Organisational Culture in English Universities: Collegiality Versus Managerialism. *Tertiary Education and Management*, *12*(4), 311–322. https://doi.org/10.1007/s11233-006-9007-2

Zainal, Z. (2007). The Case Study as a Research Method. *Jurnal Kemanusiaan*, *9*.

Zanoni, F. (2021). Students' View on CLIL: Perceived Benefits and Limitations. *El.Le*, *10*(2), 261–278. https://doi.org/10.30687/elle/2280-6792/2021/02/005

Zappa-Hollman, S. (2018). Collaborations Between Language and Content University Instructors: Factors and Indicators of Positive Partnerships. *International Journal of Bilingual Education and Bilingualism*, *21*(5), 591–606. https://doi.org/10.1080/13670050.2018.1491946

Želvys, R., Leišytė, L., Pekşen, S., Bružienė, R., & Rose, A.-L. (2021a). From collegiality to managerialism in Lithuanian higher education [Nuo kolegialumo link vadybiškumo Lietuvos aukštajame moksle]. *Acta Paedagogica Vilnensia*, *46*, 27–42. https://doi.org/10.15388/ACTPAED.2021.46.2

Želvys, R., Leišytė, L., Pekşen, S., Bružienė, R., & Rose, A. L. (2021b). From Collegiality to Managerialism in Lithuanian Higher Education. *Acta Paedagogica Vilnensia*, *46*, 27–42. https://doi.org/10.15388/ACTPAED.2021.46.2

Zeng, Z. (2013). Pathways to Pre-service Teachers Professional Development:Insights from Teacher Autonomy. *International Academic Workshop on Social Science*. https://doi.org/10.2991/iaw-sc.2013.194

Zhang, X., Admiraal, W., & Saab, N. (2022). Teacher Autonomous Motivation for Continuous Professional Development: the Relationship with Perceived Workplace Conditions. *Teachers and Teaching*, *28*(8), 909–924. https://doi.org/10.1080/13540602.2022.2137128

Zimmerman, B. J. (2000). Attaining Self-Regulation: A Social Cognitive Perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of Self-Regulation* (pp. 13–39). Academic Press. https://doi.org/https://doi.org/10.1016/B978-012109890-2/50031-7

Zulkifly, N. A., Ismail, I. A., Asimiran, S., Alias, S. N., & Ismail, M. (2021). Working Together as Equals: Collegiality Expectations of Academics at a Public University in Malaysia. *International Journal of Leadership in Education*. https://doi.org/10.1080/13603124.2021.1969037

Zupic, I., & Čater, T. (2015). Bibliometric Methods in Management and Organization. *Organizational Research Methods*, *18*(3), 429–472. https://doi.org/10.1177/1094428114562629

Appendices

Appendix 1 Empirical studies on collegiality in higher education institutions

Document	Goal/description	Context and methods	Conclusions
(Clark, 2013)	Discusses the effects of incivility in individuals and organizations, particularly the impact of faculty-to-faculty incivility and strategies to foster collegiality.	558 nursing faculties from the United States of America (US). Survey including demographic items, quantitative items and open-ended questions asking respondents to describe an uncivil encounter and to provide ways tackling this type of issues.	Incivility has devastating effects on individuals, teams and organizations. Uncivil behaviours in faculties have strong distressing effects. Academic performance and satisfaction can be promoted by "learning to effectively communicate, collaborating as team mates and scholars, and hiring competent, skilled leaders to boldly address the insidious nature and related consequences of faculty-to-faculty incivility" (Clark, 2013).
(Kwiek, 2015)	Evaluates the applicability of a collegial model in Polish universities.	Data from eleven European countries, counting 8886 responses. Quantitative approach.	In opposition to other countries in Western Europe, Polish universities operate according to a traditional collegial model, defined as *community of scholars* The defining feature of the Polish academia is the power of collegial bodies. The power of external stakeholders over Polish universities is the lowest in Europe.
(O' Connor & White, 2011)	Document focusing on how appointments are conducted in universities, the gendering and the relevance of collegial/managerialist model in universities' governance.	44 qualitative interviews with senior manager-academics, men, and women, at Dean level and above. Conducted in Ireland and Australia.	Both Ireland and Australia present a model based on managerial model (President/Vice-Chancellor appears similar to a Chief Executive Officer), rather *primus inter pares.* Presidents/Vice-chancellor and Deans are able to affect gender profile of senior managers.
(Trigwell, 2005)	Explores the experience of cross-disciplinary collegiality and interaction between students and teachers. Questions how students experience collegiality in college, the extent to which they academically mix with students from another discipline, and the students' approach to learning, outcomes of learning and the overall satisfaction with the engagement in collegial activities.	Qualitative and quantitative methods: - Qualitative study – interview with 28 undergraduate students to support the quantitative study. - Quantitative data obtained using a survey sent to all the students at the University of Oxford, regarding students' experience of learning through collegiality and analysed using the SPSS software. 2330 students returned the survey.	Students define collegiality as incorporating a sense of commitment and as a set of interactions with others. Interactions between students from different disciplinary areas are common. Interactions between students from different disciplines and between students and research-active teaching staff are reported as being beneficial to learning.
(Haviland et al., 2017)	Seeks to describe the experiences with collegiality of full-time non-tenure-track faculty members.	Qualitative interviews with 38 full-time non-tenure-track faculty members, including members from humanities, science, technology, engineering and mathematics in a public university and in a religiously affiliated research university. Interviews guided by a semi structured protocol. Data processed using Nvivo software for coding analysis.	Full-time non-tenure-track faculty members experiences regarding collegiality present several shortcomings, being conditional or deficient. Substantial ambiguity is found in interactions between colleges and between institutional structure. Maintaining full-time non-tenure-track faculty members, apart from collegiality and the collegium, compromises the vitality and health of the faculty body and the ability to achieve the academic goals.

Document	Goal/description	Context and methods	Conclusions
(Stupnisky et al., 2017)	Develops a model of pre-tenured faculty success for teaching and research. Suggests that balance, clear expectations, and collegiality supports autonomy, competence, and relatedness, which promotes intrinsic motivation and success for teaching and research, ultimately predicting success.	Model evaluated through a path-analysis, using 105 survey responses. Pre-tenured faculty members from two research universities from US Midwest were surveyed using a Likert type scale of 5, 7 and 10 points, according to the scale constructs.	Collegiality benefits were mediated by relatedness. Research success and the advantages of good balance were mediated by autonomy and competence. Intrinsic motivation, which leads to greater perceived and expected success, is positively predicted by collegiality benefits, research success and the advantages of good balance.
(Su & Baird, 2017)	Seeks to deliver insights into the collegiality of accounting academics in Australia and association of collegiality and working attitudes on academic performance.	Data collected using a five-item Likert type scale, sent to accounting teachers from 39 universities from Australia. 267 responses were used in the analysis. Data was computed using AMOS 22 software.	Results show that the level of collegiality among Australian accounting academics is moderate. The level of collegiality is positively associated with the level of employee organizational commitment. The level of employee organizational commitment is positively related with teaching and community service performance. Job stress and propensity to remain were associated with research performance. Provides strong support for the merits of collegiality. Universities should maintain and encourage collegiality among the organizational departments.
(McGrath et al., 2019)	Explores the effects of training for the role of collegial leaders and how it affects their decisions regarding the process of change.	Data: interviews (semi-structured) to collegial leaders from two research-intensive higher education institutions, that received educational leadership training. 14 leaders were interviewed, six men and eight women.	Leaders face several challenges, including leading, but are to a large extent autodidacts, based on a notion of collegiality and consensus-seeking. Data analysis outlined five themes: • Leadership roles in conflict. • Negotiation and sometimes giving up. • Time of change. • Catalysing change. Obscure Theory (i.e., three elements found, two of which were seemingly incompatible).
(Miles et al., 2015)	Develops a scale to measure collegiality at departmental level in universities/faculties and tests it to assess and understand the implications of collegiality within a department of a business school.	Scale construction process: • Defines the construct's domain. • Generates the scale's items. • Assesses the psychometric characteristics of the scale (reliability and validity). • Responses: 252 marketing and entrepreneurship academics (US). • Likert type scale with 5 points.	Scale exhibiting adequate psychometric properties. Assessment of department-level collegiality is associated with budgets, performance evaluation processes, and workload allocations. Factors from the scale indicate that collegiality is a highly relevant determinant of satisfaction among academics.
(Congdon & French, 1995)	Evaluates the process of integration and identifies the conditions that improve developing collegial relationships among members of the nursing group, during a new collaboration, to develop a combined curriculum in a higher education institution.	Case study approach. Analyses data collected through an unstructured interview, with five lectures, recorded on video. Thematic analysis.	During a process of transition, individual nurse educators and their managers must attend to problems such as "'ingroupism', nursing the students, perceived difference between nurse academics and other academics, and expectations of power-relationships."(p. 748)

Document	Goal/description	Context and methods	Conclusions
(Alleman & Haviland, 2017)	Evaluates non-tenure-track faculty (NTTF), the collegial expectations and experiences.	Data: 38 full-time, NTTF members. Study conducted in a private, religiously affiliated research university and in a public comprehensive university. Qualitative study. Data collection focused on both expectations for and experiences with collegiality. Interviews conducted using a semi-structured questionnaire.	Respondents show a desire for parity despite differentiation. Three main dimensions of collegiality were found: sense of social engagement; working collectively toward a common goal; and to have formal and informal voice in their departments.
(Bell & Thomson, 2018)	Evaluates the experiences of four Associate Deans of Learning and Teaching at a research-intensive university in Australia.	Research-intensive university in Australia. Uses a semi-structured interview (with four deans). Qualitative analysis.	Results show three approaches (focus) to support peer observation of teaching: the benefits of observing; collegiality and conversations among the teaching staff; autonomy of choice for teachers. Three motives why leaders take these approaches: personal experiences; disciplinary differences; and institutional pressures.
(LaPointe Terosky & Heasley, 2015)	Examines the experiences of tenure-track and non-tenure track online faculty concerning their sense of community and collegiality about online course development and teaching.	Qualitative study, using data from a narrative inquiry to seven academics from a private Metropolitan University (located in a major metropolitan area).	Lacking development and teaching sense of community and collegiality around online courses. Participants were primarily focused on technical support. Participants desired a greater sense of community and collegiality for concerns with the medium of online teaching.
(Victorino et al., 2018)	Conceptualizes college and university collegiality as a set of prosocial behaviours as it assesses the relationship between collegiality and job satisfaction.	Quantitative analysis. Data: 4,454 surveys from pre-tenured faculty members. Uses a Multilevel Structural Equation Model (ML-SEM). Software: PASW Statistics 18 to assess multivariate normality. Mplus version 7.4 software to evaluate the structural model.	Collegiality was found to be highly related to job satisfaction at the individual level, as well as at the institutional level. Interactions among faculty pre-tenures and tenured faculty members were found to be related to individual perceptions of faculty collegiality.
(Chong et al., 2018)	Addresses the topics of managerialism and collegiality in universities over a period of change.	Qualitative analysis, consisting of documentary evidence, namely: policy statements, minutes of meetings, private letters and other public and private documents. Case study of a New Zealand university from 1985 to 2010. Uses interviews with 75 relevant participants, current or past members of the university staff. NVIVO software with supplement latent coding.	The study concludes that views of university staff about the concepts of managerialism and collegiality are influenced by the personal values of the Vice-Chancellor. Concludes that university staff views about managerialism and collegiality are influenced by the personal values. Identifies an increased managerialism in the form of processes change, executive manager and performance assessment against targets in both researching and teaching.
(Scoles et al., 2021)	Assesses the idealistic nature of collegiality in higher education by emphasizing how collegiality can be performed in student-staff partnership work.	Qualitative analysis. Data: 18 responses from students (students were invited to participate and asked to state three positive personal outcomes resulting from student-staff partnership work). 4 focus groups with students and staff member to collect additional information. Six written reflective diaries and 15 interviews were completed.	Results show four key themes depict collegiality: building relationships, emerging moments of professionalism and responsibility, mutual support and collective benefit, and disruption of social roles.

Document	Goal/description	Context and methods	Conclusions
(Koskenranta, Kuivila, Pramila-Savukoski, et al., 2022)	Develops a new collegiality competence scale (CollegialityComp) for social and health care educators to self-evaluate their competence in collegiality.	Data: 243 responses to a survey, collected in winter 2020-2021, including ten vocational institutions in Finland. Face content assessed by questioning seven experts. Structural validity assessed through an Exploratory Factor Analysis (EFA). Alfa of Cronbach used to assess internal consistency. Software: IBM SPSS Statistics 26.	Scale measuring collegiality competence includes 35 items and five constructs (factors): Individual-centered collaboration. Educator action and fairness. Collaboration among colleagues. Collaboration outside the organization. Communication and trust. Due to the scale's psychometric characteristics, it can be used to measure collegiality competence of social health care educators in vocational and higher education context.
(Mignot-Gérard et al., 2022)	Evaluates the links between the collegiality dimensions and performance metrics regarding research activities and outputs, which are viewed as managerial practices and adverse to collegiality.	Quantitative analysis including all French public universities. 1,334 responses were analysed from academic leaders and members from elected university bodies. Seven-point Likert type scale. SmartPLS 3 software was used to assess the scale reliability, convergent validity and discriminant validity.	The use of performance metrics regarding research activities and outputs was found to be negatively linked with professional autonomy, yet compatible with faculty participation decision making and organizational citizenship. Academic unit's reputation enhances the positive link between performance metrics regarding research activities and outputs and faculty participation. Nevertheless, it has negative effects on organizational citizenship and academic units' decision-making power. Faculty participation in decision-making was found to be the only aspect resisting managerialism.
(Puranitee et al., 2022)	Study exploring the relationship between burnout, sense of belonging and work engagement. Seeks to identify the most relevant elements perceived as positively contributing to collegiality, engagement, and sense of belonging.	Uses mixed-methods, quantitative and qualitative. Uses questionnaires and semi-structured individual interviews among undergraduate medical students at a university in Thailand (Mahidol University). 20 undergraduate medical students participated in the qualitative study, evaluated through thematic analysis. AMOS® version 18.0 and SPSS Statistics were used to perform a confirmatory factor analysis and Spearman's correlation coefficient.	Results show that burnout has weak inverse association with engagement and basic psychological needs satisfaction. Sense of belonging shows to have a weak inverse relationship with burnout. Qualitative analysis presented themes emerging such as relevant tasks and learning activities, safety in learning environment, pear interaction, program design factors, dynamics of collegiality while progressing, and personal stance and social skills.
(Zulkifly et al., 2021)	Evaluates collegiality expectations of 12 full-time academics.	Qualitative study through a case study approach. The participants were 12 full-time, tenured academics from a Malaysian public research university. Interviews made using a semi-structured questionnaire.	Participants linked collegiality to social engagement, sense of collectivism, and autonomy, with less emphasis on rank and authority. Participants defined collegiality dimensions under themes such as social engagement, sense of collectivism, degree of autonomy, and authority. Academics further expected to be treated as equals among the organizations' people.
(Littlefair et al., 2019)	Analyses how external partnerships are crucial to universities. Explores the nature and different types of partnerships among people in initial teacher education, to continuing professional development to international partnerships.	Qualitative study focused on the perspectives of partners, colleges and university as a corporate entity. Semi-structured questionnaire submitted using an online tool ("Survey Monkey").	Institutional reputation does not seem to be the main driver for external partnerships. Partners base their decision regarding partnerships upon the relationship and discussions with the person they deal with. People from the university education department see university as an inhibitor and constraint to partnerships. Collegiality and common goals are key elements to successful external relationships.

Document	Goal/description	Context and methods	Conclusions
(Jeannin, 2017)	Explores international lectures' perceptions regarding the adaptation process in a South African university.	Qualitative analysis based on a face-to-face unstructured questionnaire with two questions with lectures (five participants) - 30 to 50 minutes recorded and transcribed. Emailed unstructured questionnaire with two questions with lectures (one lecture). Option to respond by email was offered to participants as a way to reduce the time burden of face-to-face interviews. Participants selection criteria: *"being non-South African; having taught for at least 10 months in the university; and having taught in another country before coming to South Africa"*.	Results show that teachers' agency and collegiality are interrelated aspects of adaptation. Collegiality and agency fostered information sharing and taking decisions about changes in pedagogical practices.
(Hellawell & Hancock, 2001)	To assess what are the academics and middle managers perceptions about their roles in newer universities and the extent to which collegiality is a significant factor in the university internal decision making.	Qualitative study based on fourteen interviews with academic and middle managers from newer UK universities. Semi-structured questionnaire. Fourteen academic middle managers in one of the newer universities were interviewed to assess their perceptions of their roles. From three of the nine faculties of one of the `newer' UK universities.	Staff resistance to change was pointed as a major drawback regarding collegial decisions when trying to pursue new initiatives, which justify why collegial processes are often bypassed or subverted. Those above the head of department level seem to be more prone to act in new collegial ways. Collegiality was mentioned as the most appropriate form of decision making in Higher Education once it is a tool to win the hearts and minds of staff.
(Yokoyama, 2006)	Evaluates the effect of the research assessment exercise (year 2001) on the balance between collegiality and managerialism in English universities.	Case study approach. Four English universities. Methods involved collecting data, including documentation at system and institutional level and semi-structured interviews at unit and institutional levels, including several department heads and universities' top heads.	The balance between collegiality and managerialism differs across universities. Research assessment exercise from year 2001 brought cultural change to be more managerial and research oriented.
(Marini & Reale, 2016)	Discusses the main clash between managerialism and collegialism and potential coexistence between both in universities.	Uses data form 26 research universities from eight European countries. Data collected using questionnaires submitted to governing bodies of universities (middle managers). 697 usable responses. Uses a Likert scale. Scale reliability assessed using Cronbach's Alpha.	There are positive correlations between collegial and managerial cultures at individual level institutions. In more managerial universities, collegial culture increases when middle managers believe that quality assurance and evaluation have had positive impacts. Even in more managerial institutions, collegiality can thrive.
(Clarke & Reid, 2013)	Discusses the effectiveness of non-accredited foundational courses for new academic staff.	Qualitative study performed through a manual analysis methodology. Study conducted in an Australian university. Semi-structured Interviews with 11 academics from several scientific areas (economics and law, linguistics, biology, accounting, academic development and communication), audio recorded.	Results delivered evidence a redesigned academic foundation programme that considers aspects such as flexible mentoring, discipline specific strategies, and targeted resource development.

Document	Goal/description	Context and methods	Conclusions
(Ross, 1977)	Examines "the effect of qualifications of faculty and decentralization of authority on faculty influence over general educational policy and appointments."	Three sources of data are used in this analysis: an interview with administrative officials at the sample institutions, a mailed questionnaire to a sample of faculty members, and published information from the American Council of Education. Uses a multiple regression analysis to analysed data.	Highly qualified faculties are allowed to have more influence in decision, mostly exercised through the formally constituted decision-making bodies of faculty.
(Hartley, 2010)	Examines the system of governance in an urban community college in US (Eris Community College).	Qualitative study, based on a case study approach. Data: 16 people were interviewed over a period of six months. Semi-structured interviews.	Results show that sometimes relationships between people are contentious, nevertheless several levels of conflict are present. There are factors that mitigate it allowing collegial decision making such as utilizing personal ties between members of the administration and the union, sharing data openly and working together, and establishing a norm that values finding solutions than scoring political points.
(Dawson et al., 2022)	Review, promotion, and tenure processes at universities and its dimensions (research, teaching, service, and collegiality).	Qualitative study based on the analysis of a survey and 864 documents obtained from 129 universities from the US and Canada.	Collegiality references in analysed documents are mostly briefly mentioned. Collegiality is more commonly mentioned in documents of doctoral research-universities. Survey results show that individuals from research-universities are more prone to perceive collegiality a relevant factor in review, promotion, and tenure processes. Among the additional factors relevant for review, promotion, and tenure, collegiality was the most common additional factor.
(Želvys et al., 2021a)	Focus on the development and academics' perceptions of managerialism in the Lithuanian higher education entities. Investigates historical changes in governance of higher education institutions.	Descriptive analysis of academics' perceived level of managerialism in the Lithuanian higher education system. Variables: Level of managerialism (survey type Likert of 5 points). Other variables named *level managerialism* (binary), *low level of managerialism* and *high level of managerialism*. Evaluates the correlation between the level of managerialism, gender, academic career position, and discipline using a Chi-Square.	Major finding show that almost half of the respondents indicate that there is collegiality in decision-making process. More than half of the respondents argue that university has a top-down management style. Almost half of the respondents argue that there is lack of good communication among management and academics.
(Omar & Pereira, 2020)	Discusses the transposition of principles usually adopted by business management to higher education entities, i.e., discusses the influence posited by managerialism in the structural foundations of higher education institutions.	Qualitative analysis using data from 9 higher education institutions (Mozambique). Two types of interviews, one with Institutions' directors and teachers and the other one with students.	Higher education institution communities show some degree of resistance to the introduction of managerialism and are more favourable to collegiality and democracy. Some minority actors recognize managerialism in achieving objectives. Respondents propose a hybrid model that associates collegiality and managerialism. Results show some degree of deficit in the participation in decision making by the education community.

Document	Goal/description	Context and methods	Conclusions
(Kok et al., 2009)	Seeks to highlight some prevalent issues regarding collegial management and the adoption of commercialized and management practices.	Qualitative data collected in UK universities. Semi-structured interviews with staff members from universities. Interviews were recorded and transcribed into Microsoft Word. Nvivo software was used, and interviews were encoded in the software package.	Highlights the role of financial considerations and commercialisation of university education. Identifies a strong adherence of scholarly integrity and altruistic tendencies. Identifies a growing managerial paradigm, yet, a substructural application of collegiality principles, embedded in institutional and individual cultures. Respondents indicate that academia should remain within the domain and control of academics.

Document	Goal/description	Context and methods	Conclusions
(Kok et al., 2009)	Seeks to highlight some prevalent issues regarding collegial management and the adoption of commercialized and management practices.	Qualitative data collected in UK universities. Semi-structured interviews with staff members from universities.	Highlights the role of financial considerations and commercialisation of university education. Identifies a strong adherence of scholarly integrity and altruistic tendencies. Identifies a growing managerial paradigm, yet, a

Appendix 2 IPCB Ethical Commission Authorisation

Instituto Politécnico
de Castelo Branco
Comissão de Ética

PARECER N.º 73 CE-IPCB/2022

PARECER

Título do projeto:	FROM ESP TO ICLHE: TEACHER COLLABORATION IN ENGINEERING IN A PORTUGUESE HIGHER EDUCATION POLYTECHNIC
Área científica:	Humanidades - Línguas e Literaturas Estrangeiras
Investigador principal	Mónica Martins de Andrade Régio
Equipe de investigação	
Orientador (se aplicável) Co-Orientador (se aplicável)	Ana María Piquer Piriz Maria Margarida Afonso de Passos Morgado
Local do estudo	ESALD
Tipo de estudo	Hipotético-dedutivo
Submissão completa	01/06/2022
Reunião e/ou reuniões de avaliação	N.º 7, 13/07/2022 N.º 9, 13/09/2022
Relatores	– Alexandre José Marques Pereira – Carlos Costa Gomes

RELATÓRIO

Elaborado nos termos do nº 7 do artigo 11º do Reg.IPCB.CE.01.02 – Regulamento da Comissão de Ética do IPCB

DELIBERAÇÃO

Parecer: Positivo*

* Assim que o projeto esteja concluído, o investigador deverá enviar o estudo final para arquivo na pasta do projeto existente nesta Comissão.

Data de deliberação em reunião n.º 9: Castelo Branco, 13 de setembro de 2022
Membros presentes: Alexandre José Marques Pereira, Arnandina Maria Abrantes de Loureiro, Fernando Reinaldo da Silva Garcia Ribeiro, Isabel Maria de Sousa Lourenço, José Pedro Rebola Ferreira de Sousa, Maria Teresa Pita Pegado Gonçalves Rodrigues Coelho e Sara Margarida Araújo Ferreira.

Relator
Carlos Costa Gomes

Relator
ALEXANDRE JOSÉ MARQUES PEREIRA

DN: C=PT, O=Cartão de Cidadão, OU=Assinatura Qualificada do Cidadão, OU=Cidadão Português, SN=MARQUES PEREIRA, G=ALEXANDRE JOSÉ, SERIALNUMBER=BI112680720, CN=ALEXANDRE JOSÉ MARQUES PEREIRA
Reason:
Date: 2022-09-21 21:26:29

Instituto Politécnico
de Castelo Branco
Comissão de Ética

PARECER N.º 73 CE-IPCB/2022

Presidente da Comissão de Ética

Assinado por : **ISABEL MARIA DE SOUSA LOURENÇO**
Num. de Identificação: 04242187
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CARTÃO DE CIDADÃO
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Appendix 3 UEx Ethical Commission Authorisation

VICERRECTORADO DE INVESTIGACIÓN Y TRANSFERENCIA

Campus Universitario
Avda de Elvas, s/n
06006 - BADAJOZ

Tel.: 924 28 93 05
Fax: 924 27 29 83

NºRegistro: 123//2022

D. JOÃO NUNO MEIRELES DA SILVA GONÇALVES RIBEIRO, SECRETARIO DE LA COMISIÓN DE BIOÉTICA Y BIOSEGURIDAD DE LA UNIVERSIDAD DE EXTREMADURA

INFORMA: Que una vez analizada por esta Comisión, en su sesión celebrada el 16/06/2022, la solicitud de Proyecto de Tesis titulado **"Integrating Content and Language in Higher Education: Teacher collaboration in a Portuguese Higher Education Polytechnic"**, cuya Directora es Dña. Ana María Piquer Piriz y cuya Investigadora Principal es Dña. Mónica Martins de Andrade Régio, ha decidido por unanimidad, valorar positivamente el precitado proyecto por considerar que se ajusta a las normas éticas esenciales cumpliendo con la normativa vigente al efecto.

Y para que conste y surta los efectos oportunos firmo el presente informe.

MEIRELES DA SILVA GONCALVES RIBEIRO JUAN NUNO - 08844642S

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Fecha: 2022.06.17 12:44:54 +02'00'

DE FRANCISCO MORCILLO JAVIER - 28946338X

Firmado digitalmente por DE FRANCISCO MORCILLO JAVIER - 28946338X
Nombre de reconocimiento (DN): c=ES, serialNumber=IDCES-28946338X, givenName=JAVIER, sn=DE FRANCISCO MORCILLO, cn=DE FRANCISCO MORCILLO JAVIER - 28946338X
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V.º B.º

Fdo.: Javier de Francisco Morcillo
Presidente por delegación de la Comisión de Bioética y Bioseguridad

Appendix 4 Submitted questionnaire

N.º order	Question	Item code
	Section 1 – Informed Consent	
1	Informed consent: Please, read the following information before continuing and sign it if you agree participating in this study. All the gathered information is confidential and no personal information able to identify you will be requested or saved	
	Section 2 – Personal Information	
2	Gender:	
3	Age: 20-29 30-39 40-49 50-59 More than 60	
4	Affiliation School: Escola Superior Agrária Escola Superior de Artes Aplicadas Escola Superior de Educação Escola Superior de Gestão Escola Superior de Saúde Dr. Lopes Dias Escola Superior de Tecnologia	
5	Years teaching: Less than 5 5-10 10-15 15-20 More than 20	
6	Type of contract: Full (permanent) Full (temporary with or without exclusivity) Part-time	
	Section 3 – Teachers' Autonomy	
7	In my teaching, I use my own guidelines and procedures.	TA1
8	In my situation, I can change or adapt the content and skills that are selected for teaching.	TA2
9	My teaching focuses on those goals and objectives I select myself.	TA3
10	What I teach in my class is determined for the most part by myself.	TA4
11	The materials I use in my class are chosen for the most part by me.	TA5
12	The content and skills taught in my class are those I select.	TA6
13	The selection of student-learning activities in my class is under my control.	TA7
14	I follow my own guidelines on instruction.	TA8
15	In my situation, I have autonomy on how to solve major problems.	TA9
16	In my class, I have full control over how classroom space is used.	TA10
17	The evaluation and assessment activities used in my class are selected by me.	TA11
18	I select the teaching methods and strategies I use with my students.	TA12
19	I decide over the scheduling of use of time in my classroom.	TA13
	Section 4 – Teachers' Collegiality	
20	Professional interactions among teachers are cooperative and supportive.	TC1
21	There is a feeling of trust and confidence among teachers.	TC2
22	I can count on most of my colleagues to help me out anywhere, anytime even though it may not be part of their official assignment.	TC3
23	Teachers consider their colleagues as their friends.	TC4
24	Teachers in this school respect the professional competence of their colleagues.	TC5
25	Teachers invite other teachers to observe their teaching.	TC6
26	Teachers in this school do not mind being observed by their colleagues while teaching.	TC7
27	I believe it to be beneficial for my teaching to be open with colleagues about my successes and challenges.	TC8
28	Feedback received by the colleagues is considered and responded to appropriately	TC9
29	Cooperation and collaboration exist across departments.	TC10

30	Teachers jointly plan and prepare teaching strategies and procedures.	TC11
31	Teachers make collective agreements to test an idea or new approach in teaching.	TC12
32	Teachers jointly accredit new programs and practices.	TC13
33	My colleagues and I collectively analyse our teaching practice.	TC14
34	Teachers often argue over educational theories, philosophies, or approaches.	TC15
35	Teachers encourage each other to contribute ideas and suggestions.	TC16
36	Teachers often ask each other about classroom management ideas and suggestions.	TC17
37	Teachers in this school often ask for suggestions to specific content/ subject problems.	TC18
38	Teachers discuss frequently about school improvement strategies.	TC19
39	Teachers often teach each other informally.	TC20
40	Teachers in this school enjoy teaching in teams.	TC21
41	Teachers feel part of a learning community which values shared responsibility for ongoing learning.	TC22
42	Teachers give demonstrations on how to use new models or strategies.	TC23
43	Teachers in this school like to share what they have learned or want to learn.	TC24
44	Most teachers in this school contribute actively to making decisions about curriculum.	TC25
45	I find time to work with my colleagues on curriculum during a regular work day.	TC26
46	Teachers in this school usually ask for help on specific instructional problems.	TC27
47	My colleagues and I share materials related to my subject teaching.	TC28
48	Teachers in this school often lend and borrow materials and resources.	TC29
49	Teachers often share journal articles and materials.	TC30

Section 5 – Teachers' Collaboration

50	Team meetings are consistently attended by ALL members.	COL1
51	Agenda for team dialogue is pre-planned, written, and accessible to all in advance of meeting.	COL2
52	Team meetings are purposefully facilitated and employ the use of protocols to structure and guide dialogue.	COL3
53	A thoughtful, thorough and accurate account of team dialogue, decisions and intended actions is recorded.	COL4
54	Inter-professional disagreements occur regularly – these disagreements are welcomed, openly addressed and lead to new shared understandings.	COL5
55	My department regularly makes decisions about what instructional practices to initiate, maintain, develop, or discontinue.	COL6
56	The process for making any decision is transparent and adhered to	COL7
57	The decisions the department makes are clearly and directly related to the improvement of instructional practice and the improvement of student learning.	COL8
58	Department members regularly identify specific instructional practices that they will initiate or maintain to increase student learning.	COL9
59	Department members regularly identify strategies they will change or discontinue.	COL10
60	My department regularly determines what information about instructional practice and student learning needs to be obtained.	COL11
61	Each department member takes actions related to individual/team learning as a result of team decision making.	COL12
62	As a result of department decision making, each one of us makes meaningful (pedagogically complex) adjustments to our instructional practice.	COL13
63	Each member of the department knows what actions (related to learning) to take next at the end of the meeting.	COL14
64	Department member actions are coordinated and interdependent.	COL15
65	Each individual teacher employs specific instructional strategies that will increase student learning.	COL16
66	Each individual teacher discontinues less effective strategies.	COL17
67	Actions that are taken after or between meetings are distributed equitably among team members.	COL18
68	Each department member can name some aspect of instruction that we have stopped/started or changed as a result of the group decision making.	COL19
69	Each member of the department commits to carrying out team actions.	COL20

70	As a department we regularly collect and analyse quantitative data (e.g., numbers, statistics, scores) about member teaching practices.	COL21
71	As a department we regularly collect and analyse qualitative data (e.g., open-ended responses, interviews, comments) about member teaching practices.	COL22
72	As a department we regularly collect and analyse quantitative data (e.g., numbers, statistics, scores) about student learning.	COL23
73	As a department we regularly collect and analyse qualitative data (e.g., open-ended responses, interviews, comments) about student learning.	COL24
74	Our department uses student performance data to evaluate the merit of our instructional practices.	COL25
75	We regularly share evaluation data on the effect of our instruction in our department colleagues.	COL26
	Section 6 – Language Competence	
76	I have the necessary English listening skills.	LC1
77	I have the required English-speaking competences.	LC2
78	I have the needed English reading comprehension skills.	LC3
79	I have the necessary English writing competences.	LC4
80	I have satisfactory English specific academic vocabulary knowledge in my areas of expertise.	LC5
81	I have generic English expressions knowledge to communicate and interact with my students.	LC6
82	My students have satisfactory English listening skills.	LC7
83	My students have adequate English-speaking competences.	LC8
84	My students have reasonable English reading skills.	LC9
85	My students have suitable English writing competences.	LC10
86	My students have adequate academic English skills.	LC11

Source: Own elaboration

Appendix 5 Semi-structured interview

Protocolo de Entrevista (Pérez Cañado, 2020a)

Identificação do inquirido

Nome
Área de formação
Docente de
Instituição
Data

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1. Fundamentos teóricos e informação sobre o ensino bilingue

- Quando utiliza várias línguas para ensinar, sabe que tipo de bilinguismo utiliza?
- Saberia descrever as caraterísticas da abordagem bilingue que utiliza, quando comparada com outras (por ex: ensino por meio de um LE (em inglês EMI) vs. CLIL (Integração de conteúdo e língua)
- Conhece alguns resultados de estudos empíricos sobre o ensino bilingue?
- Conhece falsos mitos sobre o ensino bilingue que podemos ajudar a clarificar?
- Ser-lhe-ía útil ter mais informação acerca do ensino bilingue?
- Considera importante que existam incentivos à aplicação de novas metodologias de ensino, nomeadamente aquelas que promovem o ensino bilingue?

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2. Competência linguística

- Considera que o seu nível de inglês é adequado para ensinar em inglês?
- Que papel atribui à língua inglesa quando a usa para ensinar? Presta atenção à forma? Centra-se em questões muito específicas como a terminologia específica da sua área? Foca-se em estruturas sintáticas específicas?
- Ao utilizar o inglês para ensinar, há algum aspeto em concreto que considere mais difícil ou não tem nada a destacar? Existe algum aspeto linguístico em concreto para o qual necessecitaria de ajuda?
- Qual a percentagem de utilização da língua inglesa nas suas aulas? Quando ensina em inglês, em que situações utiliza o português?
- Pensa que o nível de língua dos estudantes condiciona a sua aprendizagem, chegando mesmo a dificultar a compreensão dos conteúdos, ou normalmente os alunos são capazes de acompanhar uma aula em inglês sem grandes problemas?
- Identificou potenciais problemas linguísticos com que se debatem os estudantes e que deveríamos analisar?
- Identifica problemas de participação dos alunos nas aulas por o seu nível linguístico não ser, por vezes, suficiente? Como tenta incentivar a participação dos alunos de modo que a língua não se converta num obstáculo? Como gostaría que se ajudassem os alunos a ultrapassar os problemas linguísticos que normalmente encontra na(s) sua(s) disciplina(s)?

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3. Metodologia e tipos de grupo

- Que metodologias, tipo de trabalhos e atividades utiliza nas suas aulas? Diria que são tradicionais ou inovadores?/ Centrados no(a) professor(a) ou centrados no(as) aluno(as)?/ Que mobilizam processos cognitivos de baixo nível ou mais complexos?
- Ensina da mesma forma em inglês e em português? Quais as principais diferenças que encontra?

EXEMPLOS:
Aula expositiva
Aprendizagem baseada em tarefas
Aprendizagem baseada em projetos
Aprendizagem cooperativa
Apresentações orais
Trabalho com todos os alunos
Trabalhos de grupo
Trabalhos em pares

Trabalho autónomo
Atividades abertas vs. de resposta única
Atividades que implicam memorizar, compreender e aplicar vs. analisar, avaliar e criar

4. Materiais e recursos

- Que materiais e recursos utiliza nas suas aulas quando ensina em inglês?
- Utiliza alguns recursos em português?
- Que papel têm as novas tecnologias quando usa o inglês para ensinar?
- Está satisfeito(a) com os materiais utilizados?

5. Avaliação

- Como faz a avaliação das aulas?
- Que instrumentos e critérios utiliza? A avaliação é diversificada e contínua?
- Que importância dá aos aspetos linguísticos e aos conteúdos programáticos? Que aspetos contam mais para a classificação? Em que percentagem contam uns e outros?
- Está satisfeito(a) com a avaliação da disciplina quando utiliza o inglês para ensinar?

6. Formação contínua, mobilidade e incentivos

- Considera que tem formação adequada para ensinar em inglês?
- Em que iniciativas de formação/ mobilidade desta natureza participou?
- Em quais acha que seria benéfico participar?
- Em que aspetos considera que necessita mais formação?
- Seria útil para si ter acompanhamento/ feedback durante o desenvolvimento de metodologias bilingues, i.e. quando usa o inglês para ensinar?

7. Apreciação global

- Considera que participar em iniciativas de ensino bilingue aumenta o seu volume de trabalho?
- Valeu a pena?
- Quais as principais dificuldades que encontrou ao participar em inicativas de ensino bilingue?
- E as principais vantagens?
- Qual a sua avaliação global dessas iniciativas?
- Gostaria de referir algo mais?

Source: Own elaboration adapted from (Pérez Cañado, 2020a)