



Language and Teaching Methodology Features of CLIL in University Classrooms: A Research Synthesis

Características del lenguaje y metodologías de enseñanza de AICLE en las aulas universitarias: una síntesis de investigación

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Abstract

Content and language integrated learning (CLIL) is a dual focus educational approach widely used in European primary, secondary and tertiary education institutions in which content subjects included in the mainstream curriculum are taught through a foreign language, usually English. This paper presents a systematic review on relevant existing literature on the application of the CLIL approach in university classrooms. A total of 22 studies were identified and chosen for further analysis; the categories emerged from the analysis itself. These studies, which focused on language and methodological features, were explored to determine the research trends in terms of location, methodology, participants, data collection instruments, focus, teaching methodology and language focus. The results of the review show a trend to examine classroom discourses and the development of pragmatic competence in CLIL classrooms. As a result of the review, the paper offers suggestions for future research on the CLIL approach in university classrooms as more tertiary education institutions around the globe are adopting English as the language of instruction.

Keywords: CLIL, content and cognition, language, teaching methods, tertiary education

Resumen

El aprendizaje integrado de contenido y lenguas extranjeras (AICLE) es un enfoque educativo dual que se usa ampliamente en las instituciones europeas de educación primaria, secundaria y superior, en el que las asignaturas incluidas en el currículo se imparten a través de un idioma extranjero, generalmente inglés. Se revisó sistemáticamente la literatura existente relevante sobre la aplicación del enfoque AICLE en las aulas universitarias, y se identificaron 22 estudios empíricos para su posterior análisis. Estos estudios, que se centraron en las características de lenguaje y metodologías de enseñanza, se exploraron para determinar las tendencias de investigación en términos de ubicación, metodología de investigación, participantes, instrumentos de recolección de datos, enfoque, metodología de enseñanza y enfoque del lenguaje. Este trabajo concluye que hay una tendencia a examinar el discurso y el desarrollo de la competencia pragmática en el aula donde se aplica el AICLE. Asimismo, el artículo ofrece sugerencias para futuras

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investigaciones sobre el enfoque AICLE en las aulas universitarias ya que más instituciones de educación superior de todo el mundo están adoptando el inglés como idioma de instrucción.

Palabras clave: AICLE, contenido y cognición, lenguaje, métodos de enseñanza, educación superior

Introduction

Content and language integrated learning (CLIL) is a dual-focused approach where curricular content is taught through a foreign language (Marsh, 2002; Wolf, 2009; Dalton-Puffer, 2011). It is currently part of educational systems across Europe (Wolff, 2009) and other parts of the world, such as Latin America and Asia (McDougald, 2015). It originated in the early 1990s as a result of the triple pressure of integration, expansion and modernisation that the European Union was experiencing, and it has since been perceived as a facilitator of European integration (Marsh & Frigols Martín, 2013).

The use of a foreign language in the teaching of content subjects, usually by content—not language—teachers, has been a common practice in European educational systems for over two decades. It has been mostly implemented in elementary and secondary schools and, more recently, in university programmes. According to Coleman (2006), English-medium teaching in European higher institutions has grown considerably in masters and undergraduate programmes since 1991.

Due to CLIL's growing popularity, research focused on this matter has increased. There are studies, conference published proceedings and entire peer-reviewed journals dedicated to CLIL publications, which have highlighted its potential and its many benefits in terms of language learning and content learning, claiming that CLIL fosters the acquisition of foreign language competence and develops higher-order thinking skills. Content and language domains have been studied within CLIL; hence, this paper aims to identify the language and methodological features that have been studied in existing research examining CLIL at the tertiary

level as more universities around the world have shown their interest in offering degrees using the CLIL approach.

The following section offers an overview of the literature that supports CLIL to contextualise this systematic revision and the organisation of the data that will be presented.

Content and Language Integrated Learning in University Classrooms

The term CLIL was coined by David Marsh to 'refer to any dual-focused educational context in which an additional language, thus not usually the first language of the learners involved, is used as a medium in the teaching and learning of non-language content' (Marsh, 2002, p. 2). CLIL was also defined as a dual-educational environment 'where curricular content is taught through the medium of a foreign language, typically, to students participating in some form of mainstream education at the primary, secondary, or tertiary level' (Dalton-Puffer, 2011, p. 183). CLIL has emanated from the Canadian Immersion programme, implemented across Canada in 1960, with the purpose of promoting bilingualism and biliteracy (Cummins, 2013).

A CLIL programme is different from other language learning programmes, such as English as a second language or immersion programmes, because it uses a foreign language, mainly English, and not a second language as in the case of French immersion in Canada (Lasagabaster & Sierra, 2010). In CLIL, the language used for instruction is listened to and spoken only in the classroom. Teachers in a CLIL context are not, typically, native speakers of the foreign language or language teachers; they are experts in content subjects from academic and scientific disciplines who use the foreign language to teach. CLIL programmes have been traditionally implemented once learners have acquired literacy skills in their first language (L1) and are able to transfer these skills to the acquisition of a new language. In an educational environment like CLIL, where there is continuous language input, naturalistic language learning takes place (Cummins, 2013).

Content is a major component of CLIL; thus, it has been compared with other content-language approaches, such as Content-Based Instruction (CBI) and English for Academic Purposes (EAP). Whilst CBI is ‘an umbrella term referring to instructional approaches that make a dual, though not necessarily equal, commitment to language and content-learning objectives’ (Stoller, 2008, p. 59), ESP focuses on teaching a foreign language and has as its main components, namely, the teaching of the target language applied to a specific profession or vocation, an analysis of the communication needs of the students, and the use of content that will be likely applied in the workplace (Fortanet-Gómez & Bellés-Fortuño, 2008; Gonzalez, 2015). CLIL, however, is a dual-focused approach that teaches content subjects (included in the curriculum) with and through the target (foreign) language (Ball, Kelly, & Clegg, 2015), giving equal importance to content and language. Additionally, ‘CLIL lessons at school are usually scheduled as content-lessons (e.g. Biology, Music, Geography) while the target language also continues as a subject in its own right in the shape of foreign language lessons taught by language specialists’ (Dalton-Puffer, Nikula, & Smit, 2010, p. 3).

CLIL’s main characteristic is its dual-focused approach that includes teaching-learning processes that emphasise equally on content and language. Wolff (2009) stated, ‘the experience (of CLIL) shows that both linguistic and content subject competence can be promoted within this integrated concept more effectively than when content and language are taught in isolation’ (p. 560). Existing research has shown that well-implemented CLIL programmes could be highly effective for learning content and language because strong target language skills are developed at no cost to students’ knowledge of curriculum content (Cummins, 2013).

The nature of CLIL is interdisciplinary because it is not based on single evidence or a theory. According to Marsh and Frigols Martín (2013), several fields apply to the language component of the CLIL approach and others to education in general. Regarding the language component, CLIL can be linked to language awareness, whose proponents ‘attempted to seek the commonality of

interest between those involved with first and second language teaching and promote the curricular concept of languages across the curriculum’ (p. 2), the theories of second language acquisition, psycholinguistics and foreign language learning. Concerning education in general, CLIL is connected to the learning theories of constructivism and cognitivism (Marsh & Frigols Martín, 2013).

On the basis of these theoretical foundations, Coyle (2007) designed the 4Cs framework of CLIL which supports the development of CLIL pedagogies and provides a basis to the integration of its components. It emphasises on content (subject matter), communication (language), cognition (learning and thinking) and culture (social awareness of self and otherness).

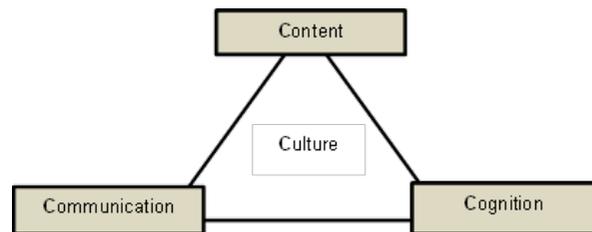


Figure 1. CLIL 4Cs Framework (Adapted from Coyle, 2009).

Coyle (2009) explained her framework arguing the following: Effective CLIL requires progression in knowledge, skills and understanding of the content; engagement in associated cognitive processing, such as thinking skills, which has an impact on learning; interaction in the communicative context and development of appropriate language knowledge and skills; and a deepening intercultural understanding which permeates all Cs and is integral to learning through the positioning of self and otherness based on attitudes and values. (p. 110)

Programmes that are developed within this framework seek to achieve goals that are directly and indirectly related to language development. Ruiz de Zarobe (2011) presented several aims as the most important for designing and developing CLIL programmes: develop intercultural communication skills, prepare for internationalisation, provide opportunities to study content through different perspectives, access subject-specific target language terminology, improve overall target language

competence, develop oral communication skills, diversify methods and forms of classroom practice and increase learner motivation.

Research on CLIL has mainly concentrated on the benefits of the programme in primary and secondary education in terms of language development and content learning. However, more recently, there has been a growing interest in CLIL programmes at the tertiary level, especially in Europe with the objectives of fostering and promoting the mobility of university students and professors (Stern, 1964; Coleman, 1997, 1998; 2004d; and Teichler, 1997 as cited in Coleman, 2006). Consequently, more universities across this continent are teaching courses and offering entire degrees where content is taught through a foreign language, generally English (Pavón Vázquez & Gaustad, 2013; Ritzen, 2004). For instance, in Spain, English has been implemented as the second or third language of instruction in the higher education system where multilingual policies have been developed including CLIL as the approach applied (Fortanet-Gomez, 2013). The recent implementation of CLIL programmes at the tertiary level provides an extensive area for language research. Vilkančiene (2011) suggested that the possibility for students to use the content of their academic area as a context for learning a foreign language can be a motivating learning factor.

For a deeper understanding of existing research, this synthesis of empirical studies aims to examine the language and methodological features that have been investigated to identify gaps in the existing literature which can be potential opportunities for future research.

Analysis of Language and Methodological Features of CLIL in University Classrooms as Reported in Existing Research Purpose

This research aims to systematically review primary research studies on CLIL in higher education to better understand the general state of knowledge, without emphasising in any geographical context, in the field and find research gaps that could guide potential empirical work.

Methods

Retrieval and analysis of relevant studies

According to Norris and Ortega (2006), when planning a research synthesis, concentrating on the identification, selection and characterisation of studies and explaining how the relevant literature was searched are imperative. Therefore, a set of parameters for searching studies were decided on the basis of the following criteria to remain loyal to the definition of research synthesis. Firstly, they had to be empirical studies (exploratory, descriptive or mixed-methods) on CLIL at the university level. No other content-language approach, namely, CBI or EAP, could be included because of the differences between the programmes aforementioned. Secondly, they had to be published, peer-reviewed journal articles (not exclusively included in Journal Citation Reports), book chapters and/or books written in English. Thirdly, studies had to be published between 2004 and 2017 because although CLIL has been studied for more than two decades, research reports at the tertiary level started to emerge in 2004 (Costa and Coleman 2010 as cited in González & Barbero, 2013; Fernández 2009; Wilkinson, 2004; & Wilkinson and Zegers 2007, 2008). Fourthly, only CLIL studies in which the English language was used as the medium of instruction were selected.

Table 1. Criteria for the Selection of Studies

	Inclusion Criteria
1	Empirical studies (exploratory, descriptive or mixed-methods)
2	CLIL at the university level
3	Published, peer-reviewed journal articles written in English
4	Books and book chapters written in English
5	Studies published between 2004 and 2007
6	Studies on CLIL: English as the medium of instruction

Grounding on these parameters and typing CLIL programmes, university CLIL, content and language, English as the language for instruction and language as means for instruction as keywords, studies on two journal databases (ERIC and ProQuest educational journals) and on two specialised journals (the International CLIL Research Journal and the

Latin American Journal of Content and Language Integrated Learning, LACLIL) were searched for. Additionally, we conducted systematic searches in the University of Toronto's library search engine, Google Scholar and Ebrary Academic International. The list of references of the studies found was also reviewed to identify further published studies that comply with the selection criteria aforementioned. This search process resulted in the selection of 38 preliminary studies.

Table 2. Research on CLIL at the University Level

Main Focus	Studies
Language	20
Teaching methodology	2
Teachers and students' attitudes and perceptions	8
Other	8

Table 2 exhibits that 20 studies examined language features at the university level, two observed methodological features, eight focused on students' and teachers' perceptions and attitudes towards CLIL programmes and eight studies were grouped under the category 'other' because they focused on various aspects, such as the effectiveness and implementation of CLIL programmes, language policies and material design (the main focus of each study is presented in Appendix A).

A coding scheme was developed to portray the substantive features of the 22 studies selected for the synthesis and classify them in terms of their theoretical and methodological characteristics. The aspects that were included in the coding sheet, and later analysed in the findings, were chosen to collect information common to as many studies as possible so that further synthesis and analysis were possible. The drafts of the coding sheet were piloted with several studies until the final version that included eight categories was developed.

The 20 studies that focused on language were further coded. From the analysis, the language features that were described in the majority of the studies were language proficiency, language skills, vocabulary development and pragmatic competence; hence, these categories are described in the analysis below.

To guarantee the validity and reliability of the results, the three researchers individually coded all of the studies included in this review. The coding sheets of the independent coders were compared, and an inter-coder reliability percentage was calculated, dividing the number of observations agreed upon by the total number of observations, following Orwin's (1994) agreement rate (AR) formula. The result was then multiplied by 100 to obtain a simple percentage. The AR between the coders was 96% after the first round of coding. Disagreements were then resolved through discussion about the items in the coding sheets. The final inter-coder reliability was then calculated, obtaining an AR of 99% in the total of possible observations after the second round of coding.

AR = $\frac{\text{number of observations agreed upon}}{\text{total number of observations}}$	
First round of coding: AR = $\frac{169}{176}$ AR = 0.96 * 100 AR = 96%	Second round of coding: AR = $\frac{175}{176}$ AR = 0.99 * 100 AR = 99%

Figure 2. Agreement Rate Calculations

Location

CLIL programmes began and became popular in the European context, but today, they are spreading all over the world, especially showing a growing interest for its implementation in Asia and Latin

Table 3. Coding Scheme

Research Method	Main Purpose	Topic	Participants	Location (Country)	Name of University	Data Collection Instruments	Relevant Information

America. In relation to this, Table 4 shows that 18 studies took place in Europe, three in Asia, and only one in Latin America. Although CLIL programmes have been established since 2005 mainly in Argentina, Colombia, Chile, Venezuela and, more recently, in Bolivia and Ecuador, researchers have mainly examined classroom practices, the initial results of programme evaluation processes and the development of materials instead of the language or teaching methodological features, which are the subject of the analysis of this synthesis.

From the data, only one Latin American study took place in Colombia. Torres Martinez (2013) study was about the use of lexical bundles. The author suggested that giving importance to the teaching and learning of lexical bundles within the framework of CLIL could lead to the improvement of the production of content appropriate discourse in academic English in different fields in Colombian universities. Torres also defined lexical bundles as multiword segments that can be stored and retrieved for oral and written production, facilitating encoding and decoding processes that result in the fluent production of discourse. Furthermore, he argued that 'lexical bundles provide learners with a down-to-earth characterisation of discourse based not only on the frequency of occurrence, but also on their intrinsic learnability' (p. 40). The author concluded that using this approach provides a more solid integration of content and language which is the main focus of CLIL classrooms. This study suggests that efforts are being made in the Latin American context to start using CLIL as an approach to learn academic content through English in universities

as a way to provide students with opportunities to access more information sources relevant to their academic journeys.

Research methodology used in the studies

CLIL in university settings is a relatively new research arena that must be explored and observed extensively. From the analysis of the data, it seems that researchers have mainly chosen a qualitative approach to gain ideas and insights about how language learning takes place in CLIL contexts. Table 5 confirms this claim by showing that 59.09% of the studies analysed are qualitative, 27.27% quantitative and 13.63% mixed-methods (qualitative and quantitative).

For instance, González and Barbero (2013) conducted a qualitative research on the basis of in-depth interviews to identify the important elements of a CLIL-based methodology on the basis of teachers' self-perceptions and attitudes towards the programme. The participants of the study were primary and secondary native and non-native English-speaking CLIL teachers from public and state subsidised schools who provided their insights into the most important elements of CLIL as applied in primary and secondary schools and how these could be extended to university classrooms. The results indicated that the answers from the participants agreed with the existing literature on CLIL methodology and its implementation. Teachers reported their language proficiency level according to the Common European Framework and expressed a high level of satisfaction in

Table 4. Location of Empirical Studies

Author/Year	Continent	N	%
Hou (2013); Jackson (2012); Watanabe (2013)	Asia	3	13.64
Braga Riera & Dominguez Romero (2010); Carloni (2012); Chostelidou & Griva (2014); Dafouz Milne & Nuñez Perucha (2010); Dafouz E. (2007); Dafouz & Sanchez Garcia (2013); Dafouz, Nuñez, & Sancho (2007); Fernandez-Santiago (2011); González & Barbero (2013); Hellekjaer (2010); Hewitt (2011); Klimova (2013); Ljosland (2010); Moore & Dooly (2010); Morgado & Coelho (2013); Smit (2007); Smit (2010); Thogersen (2013)	Europe	18	81.81
Torres Martinez (2013)	Latin America	1	4.55
Total		22	100

Table 5. Research Methodology of Empirical Studies

Author/Year	Type	N	%
Braga Riera & Dominguez Romero (2010); Carloni (2012); Dafouz Milne & Nuñez Perucha (2010); Dafouz E. (2007); González & Barbero (2013); Jackson (2012); Klimova (2013); Ljosland (2010); Moore & Dooly (2010); Morgado & Coelho (2013); Smit (2007); Smit (2010); Torres Martinez (2013)	Qualitative	13	59.09
Dafouz & Sanchez Garcia (2013); Dafouz, Nuñez, & Sancho (2007); Fernandez-Santiago (2011); Hellekjaer (2010); Hewitt (2011); Watanabe(2013)	Quantitative	6	27.27
Chostelidou & Griva (2014); Hou (2013); Thogersen (2013)	Mixed-methods	3	9.10
Total		22	100

Table 6. Participants of Empirical Studies

Author/Year	Participants	N	%
Carloni (2012); Chostelidou & Griva (2014); Hellekjaer (2010); Hewitt (2011); Jackson (2012); Klimova (2013); Moore & Dooly (2010)	Students	7	31.82
Braga Riera & Dominguez Romero (2010); Dafouz Milne & Nuñez Perucha (2010); Dafouz E. (2007); Dafouz & Sanchez Garcia (2013); Fernandez-Santiago (2011); González & Barbero (2013); Morgado & Coelho (2013); Thogersen (2013); Torres Martinez (2013); Watanabe(2013)	Professors	10	45.46
Dafouz, Nuñez, & Sancho (2007); Hou (2013); Ljosland (2010); Smit (2007); Smit (2010)	Both	5	22.72
Total		22	100

regard to their CLIL programme. However, they complained about the workload and their prestige as CLIL teachers because in the educational system in Spain, being a CLIL teacher is not considered an attractive option due to the amount of work and the pay which is the same as other non-CLIL teachers with less responsibilities.

The preference for qualitative studies could be attributed to the necessity to know in-depth the realities of CLIL classrooms through analysing the perspectives of professors and students.

Participants of the studies

According to Norris and Ortega (2006), sampling and describing the participants are the key aspects of any research study. In CLIL classrooms, professors and students have been selected as research participants because in CLIL contexts, the language used for instruction is a foreign language for learners and usually for instructors.

Table 6 indicates the preference towards studying students and professors separately rather than in jointly interactions. Studies that have examined students' performance represent 31.82% of the data. They include studies on vocabulary development (Carloni, 2012), learning styles (Fernandez-Santiago, 2011), language proficiency (Klimova, 2013), language skills (Chostelidou & Griva, 2014; Hellekjaer, 2010; Hewitt, 2011; Jackson, 2012) and pragmatic competence (Moore & Dooly, 2010; Smit, 2010). Approximately, 46% of the studies observed professors' pragmatic competence (Braga Riera & Dominguez Romero, 2010; Dafouz E. , 2007; Dafouz Milne & Nuñez Perucha, 2010; Dafouz & Sanchez Garcia, 2013; Thogersen, 2013; Torres Martinez, 2013), language proficiency (Morgado & Coelho, 2013), vocabulary development (Watanabe, 2013) and teaching methodology (Fernandez-Santiago, 2011; González & Barbero, 2013). Five studies (22.72%) have examined interactions between professors and students particularly focusing on pragmatic competence (Dafouz, Nuñez, & Sancho,

2007; Ljosland, 2010; Smit, 2007, 2010) and language proficiency (Hou, 2013). From this analysis, it seems that research has given more importance to the role instructors play in CLIL classrooms as they are also users of the foreign language, in this case English. Knowing their own trajectories as second or foreign language learners elucidates how they navigate through the teaching process.

Data collection instruments used in the studies

The several existing data elicitation measures are used depending on the research question(s) asked, and the theoretical framework within which each research study is conducted. Therefore, it cannot be said that one instrument is better than another but appropriate or not for the nature of the study. Although there is a variety of data collection instruments in the analysed studies, it is salient that the transcriptions of naturally occurring languages are the most used.

Table 7 shows that more than 50% of the studies analysed transcriptions from classroom interactions and lectures. This percentage matches the findings on research methodology discussed above where close to 60% of the studies were conducted within an exploratory approach. The transcripts of class observations and audio or video recordings are part of the data collection methods for qualitative research.

For instance, Braga Riera and Dominguez Romero (2010), in their study of source language interference in CLIL lectures in Spain, used transcripts from eight lectures given in an engineering programme (four lectures) and a master programme in Nuclear Fusion Science (four lectures). Through the analysis of the transcripts, they found that there was frequent interference of the L1 in the lectures. This interference was revealed by the presence of lexical, morphological and syntactic calques. They argued that 'CLIL lecturers choose L2 words and structures which show a striking resemblance with words and structures existing in their L1' (p. 6). Similarly, Dafouz and Sanchez Garcia (2013) used transcripts from three videotaped lectures from three different universities in Madrid. The transcripts were used to analyse 'teacher discourse and, more specifically, teacher questions as fundamental tools that articulate classroom talk and prime strategies that promote interaction and co-construct meanings' (p. 129).

Main purpose of the studies

Earlier in this paper, it was stated that the main purpose of the study was to identify the language and methodological features that research in CLIL at the university level has examined. From the data, two (9.09%) studies focused on teaching methodologies and 20 (90.91%) on language features.

Table 7. Data Collection Instruments of Empirical Studies

Author/Year	Methods	N	%
Hellekjaer (2010); Morgado & Coelho (2013)	Questionnaires	2	9.10
Fernandez-Santiago (2011); González & Barbero (2013); Ljosland (2010)	Interviews	3	13.63
Braga Riera & Dominguez Romero (2010); Carloni (2012); Dafouz Milne & Nuñez Perucha (2010); Dafouz E. (2007); Dafouz & Sanchez Garcia (2013); Dafouz, Nuñez, & Sancho (2007); Moore & Dooly (2010); Smit (2007); Smit (2010); Thogersen (2013); Torres Martinez (2013); Watanabe (2013)	Transcripts (classroom interaction/lectures)	12	54.54
Hewitt (2011)	Surveys	1	4.55
Chostelidou & Griva (2014); Hou (2013); Jackson (2012); Klimova (2013)	Test (pre and post)	4	18.18
Total		22	100

Table 8. Main Purpose of Empirical Studies

Author/Year	Main focus	N	%
Braga Riera & Dominguez Romero (2010); Carloni (2012); Chostelidou & Griva (2014); Dafouz Milne & Nuñez Perucha (2010); Dafouz E. (2007); Dafouz & Sanchez Garcia (2013); Dafouz, Nuñez, & Sancho (2007); Hellekjaer (2010); Hewitt (2011); Hou (2013); Jackson (2012); Klimova (2013); Ljosland (2010); Moore & Dooly (2010); Morgado & Coelho (2013); Smit (2007); Smit (2010); Thogersen (2013); Torres Martinez (2013); Watanabe (2013)	Language features	20	90.91
Fernandez-Santiago (2011); González & Barbero (2013)	Teaching methodology	2	9.09
Total		22	100

Table 9. Languages Features Observed in Empirical Studies

Author/Year	Features	N	%
Hewitt (2011); Hou (2013); Klimova (2013); Morgado & Coelho (2013)	Language proficiency	4	20
Chostelidou & Griva (2014); Hellekjaer (2010); Jackson (2012)	Language skills	3	15
Carloni (2012); Watanabe (2013)	Vocabulary development	2	10
Braga Riera & Dominguez Romero (2010); Dafouz Milne & Nuñez Perucha (2010); Dafouz E. (2007); Dafouz & Sanchez Garcia (2013); Dafouz, Nuñez, & Sancho (2007); Ljosland (2010); Moore & Dooly (2010); Smit (2007); Smit (2010); Thogersen (2013); Torres Martinez (2013)	Pragmatic competence	11	55
Total		20	100

Studies focused on teaching methodologies

Fernandez-Santiago (2011) and González and Barbero (2013) analysed the different teaching methodologies that could be effectively implemented in CLIL environments. The former is a descriptive study that states that teaching methodologies should be related to language skills, training learners on academic reading comprehension, speaking for formal presentation of scientific content, writing academic articles in a formal and objective style and listening comprehension of specific and relevant information. The latter is an exploratory study in which the researchers state that CLIL teaching methodologies should include communication, scaffolding, a reference lexical corpus per task and ICTs. Instructors should use a student-centred approach, proper assessment (content should be a priority over language) and various assessment instruments (self-assessment, peer assessment, rubrics and language and content portfolios). Additionally, instructors should repeat and

consolidate information, plan the lessons carefully and turn problems into learning opportunities.

Studies focused on language

Twenty studies from the data focused on language, specifically, on language proficiency, language skills, vocabulary development, syntax and pragmatic competence. Table 9 indicates that 11 (55%) studies explored the issues related to pragmatic competence, which indicates that there is particular interest on how language is used in context.

Pragmatic competence is known as the ability to comprehend and produce language for communication. It is the major influence behind the speakers' choices for using language in socially appropriate ways because it includes knowing the rules of a language and how to apply them correctly (Bialystok, 1993; LoCastro, 2012). CLIL classrooms offer students many opportunities to develop their

pragmatic competence as they provide authentic input and continuous use of the target language. CLIL researchers have argued that when the target language is used as the medium of instruction, acquisition takes place naturally, and the ability to communicate appropriately through that language develops more easily than in formal language teaching (Nikula, 2008).

Five of the studies on pragmatic competence focused on the role that the first language plays in professors' and learner's discourse. Braga Riera and Dominguez Romero (2010) explored the role of first language and translation as tools in CLIL lectures. They explicitly focused on the presence of structural calques in the professors' production. Similarly, Moore and Dooly (2010) explored how learners used their available verbal and non-verbal resources (multilingual repertoire, posture, gesture and gaze) to construct their discourse. Dafouz Milne and Nuñez Perucha (2010) and Thogersen (2013) compared the stylistic differences and metadiscursive devices that lectures used in their L1 and L2. Both studies shared a similar conclusion in that English lectures appear to be more formal than the ones in the first language, resembling written academic prose and paper presenting styles. Additionally, Ljosland (2010) examined the ways in which English interacts with the learners' first languages. The researcher concluded that interacting in different languages creates a favourable framework for performing various activities that enrich the learning process. Four studies analysed more specific components of pragmatic competence. Dafouz and Sanchez Garcia (2013) focused on teacher discourse. They examined how teacher questions become tools to encourage classroom talk, promote interaction and co-construct meanings. Dafouz, Nuñez and Sancho (2007) and Dafouz (2007) also concentrated on university lectures by non-native speakers exploring the use of pronouns and modal verbs in their discourse. The results of both studies showed that 'we' was the most frequently used pronoun because it worked as a solidarity mechanism to establish common ground. Furthermore, Torres Martinez (2013), as mentioned earlier in this paper, examined lexical bundles as a tool to support the fluent production of discourse. The last two studies coded as pragmatic competence (Smit, 2007, 2010) are

discourse pragmatic ethnographies of classroom interaction between professors and students. The former study explored interactional repair patterns, and the latter focused on 'interactive explaining' as a central discourse function of educational discourse.

With notable lower percentages, the remaining studies enquired into different issues related to language. Firstly, the studies by Hewitt (2011), Hou (2013), Klimova (2013) and Morgado and Coelho (2013), which represent 20% of the data, investigated the overall language proficiency of students and professors. These studies argued that CLIL improves language proficiency and supports the acquisition of content knowledge. Secondly, language skills were examined by 15% of the studies. Hellekjaer (2010) examined listening comprehension and the difficulties learners' encounter when listening to CLIL lectures. Jackson (2012) observed the effect that CLIL combined with genre process writing can have on students' development of writing skills, and Chostelidou and Griva (2014) studied the development of reading skills and content knowledge. Thirdly, Carloni (2012) and Watanabe (2013) examined the development of academic language and content specific vocabulary as key factors to achieve success in language and content learning. Carloni focused on learners, whilst Watanabe observed the words used by professors during diverse forms of instruction.

Conclusions and Implications for Future Research

This research synthesis focused on examining empirical studies that concentrated on language and methodological features in CLIL classrooms at the tertiary level to provide a detailed analysis of existing research. According to the analysis, there has been a tendency to examine the development of pragmatic competence. It seems that CLIL classrooms are environments that foster the development of pragmatic competence because they provide large amounts of meaningful input and countless opportunities for learners to produce language which is in agreement with CLIL classroom description offered by Nikula (2008) and the results of the studies that focused on pragmatic

competence (Braga Riera & Dominguez Romero, 2010; Dafouz, 2007; Dafouz Milne & Nuñez Perucha, 2010; Dafouz, Nuñez, & Sancho, 2007; Dafouz & Sanchez Garcia, 2013; Ljosland, 2010; Moore & Dooly, 2010; Smit, 2007, 2010; Thogersen, 2013; Torres Martinez, 2013). The study of classroom discourse and its complexities could provide a better understanding of how pragmatic competence takes place in CLIL classrooms.

Other important aspects of existing research were analysed in the attempt to identify gaps in the literature and opportunities for future research. As it was observed in the data analysis, CLIL at the university level is a relatively new area where many important aspects of language acquisition and learning could be researched. It would be important to increase the existing research by examining the language features mentioned in this study, including others as pronunciation, academic writing, acquisition of academic vocabulary and assessment (although content is the component that is mostly evaluated) just to name a few. According to the data, there has been a preference for qualitative studies that have observed professors' and learners' behaviours and language use. Quantitative or mixed-methods studies, however, could offer a more precise view of the outcomes of CLIL programmes as they will consider not only perceptions and behaviours but also performance and more objective results.

Additionally, most research has concentrated on the European context; nonetheless, due to the growing popularity of CLIL in Latin America and Asia, more studies must be conducted there. The Latin American countries where CLIL has been implemented are looking for ways to improve their university educational systems by adopting English as the means for instruction to strengthen their research culture. Thus, an important area of expansion for CLIL research is the Latin American context, where the feasibility for implementing this approach and different aspects of language development could be examined.

As per limitations, this review is limited by the parameters and limitations of the synthesis itself. The main identified limitation is that the studies chosen for analysis were not reviewed in terms

of the quality of their designs, methodology or conclusions. Future research should consider these aspects and adopt more theoretically and conceptually relevant inclusion or exclusion criteria to obtain more revealing and significant results.

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Asterisked items are the 22 empirical studies included in the analysis.

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Appendix A

Preliminary studies: main focus

	Author/Year	Main Study Focus	Synthesis Code
1	Aguilar & Rodriguez (2012)	Students' and lectures' perceptions on CLIL	Ss/Ts attitudes/perceptions
2	Braga Riera & Dominguez Romero (2010)	L1 interference	Language
3	Carloni (2012)	Academic vocabulary	Language
4	Costa & Coleman (2010)	Programme effectiveness	Other
5	Chostelidou & Griva (2014)	Reading skills and content learning	Language
6	Dafouz Milne & Nuñez Perucha (2010)	Metadiscursive devices L1/L2	Language
7	Dafouz, Nuñez, & Sancho (2007)	Analysing stance (personal pronouns)	Language
8	Dafouz E. (2007)	Spoken production	Language
9	Dafouz & Sanchez Garcia (2013)	Discourse	Language
10	Fernandez-Santiago (2011)	Methodological approaches	Methodology
11	Fornaciari, Cignoni, & Fornaciari (2010)	Programme effectiveness	Other
12	González & Barbero (2013)	Teaching methodologies	Methodology
13	Hellekjaer (2010)	L1/L2 comprehension	Language
14	Hewitt (2011)	Language skills	Language
15	Hou (2013)	Language proficiency	Language
16	Hu, Li, & Lei (2014)	Language policies	Other
17	Jackson (2012)	Writing skills	Language
18	Johnson (2012)	Lecture's beliefs	Ss/Ts attitudes/perceptions
19	Klimova (2013)	Language proficiency	Language
20	Ljosland (2010)	Code switching	Language
21	Moore (2016)	Language policies	Other
22	Moore & Dooly (2010)	Code switching	Language
23	Morgado & Coelho (2013)	Language proficiency	Language
24	Nuñez Asomoza (2015)	Students' perceptions	Ss/Ts attitudes/perceptions
25	O'Dwyer & Boer (2015)	Assessment	Other
26	Papaja (2012)	Students' attitudes	Ss/Ts attitudes/perceptions
27	Rubtcova & Kaisarova	Students' attitudes	Ss/Ts attitudes/perceptions
28	Sancho Guinda (2013)	Teachers' perceptions	Ss/Ts attitudes/perceptions
29	Smit (2010)	Terms and expressions	Language
30	Smit (2007)	Interactional repairs	Language
31	Spies (2012)	Programme implementation	Other
32	Tatzl (2011)	Programme effectiveness	Other
33	Thogersen (2013)	L1/L2 register	Language
34	Torres Martinez (2013)	Teacher discourse	Language
35	Vilkanciene (2011)	Students' attitudes	Ss/Ts attitudes/perceptions
36	Watanabe (2013)	Lexical features	Language
37	Wozniak (2013)	Lectures' perspectives	Ss/Ts attitudes/perceptions
38	Zegers (2008)	Material design	Other