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Content-based Language Learning in Multilingual Educational Environments

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who instilled in us a love for words and learning

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Introduction: The Relevance of CLIL Education in Achieving Multilingualism on the Global Stage

Maria Juan-Garau and Joana Salazar-Noguera

1 Introduction

In an increasingly globalised context with worldwide movement of people, goods and ideas, there is a growing need to be able to communicate in various languages, and hence a great demand for mainstream education to improve language-learning opportunities and linguistic educational outcomes. Based on the fact that foreign language learning achievement in school settings is frequently regarded as unsatisfactory, the notion of turning classrooms into more of a naturalistic environment where the target language can be picked up incidentally, not just deliberately, has gradually gained momentum from the 1970s onwards, with various educational approaches (e.g. immersion, bilingual education, multilingual education, sheltered instruction, language showers and enriched language programmes) seeking to maximise exposure to additional languages so as to promote functional fluency in them. Thus, we encounter a combination of simultaneous grassroots, bottom-up initiatives and top-down policies to convert a language problem into language potential.

Although using a second language to teach content is no newcomer on the education scene,[1] content-based language teaching (CBLT), which integrates language teaching and subject learning, stands out as a highly successful and efficient way of channelling resources towards language acquisition without putting more pressure on an already hefty school curriculum (Lyster 2007). It is a dual-focused form of instruction which combines language teaching and subject learning by eliminating the separation between curricular development and the study of the target language.

[1] In fact, it is as old as education itself and was a feature of European schooling in medieval times.

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This 'two-for-one' approach increases exposure to the target language by embedding it within interesting content (subject matter) in appropriate language-dependent activities, thereby extending the experience of learning a language and providing a motivational basis for purposeful communication to take place.

Since the Canadian experience in Quebec in the mid-1960s, CBLT has spread throughout Canada, the United States, the European Union and much of the rest of the world, becoming particularly visible in the early 1990s. In fact, for members of linguistic minorities, receiving all or most of their formal education through a language other than their native language is common practice all over the world nowadays.

In Europe, where a variety of languages coexist, the move towards economic unity and cohesion has led to a need for higher levels of multilingualism. Better access to language teaching and learning methods is now crucial in many communities. To that end, different proactive forces converge to point the way ahead in functional language learning. In this continent, we simultaneously find families wanting their children to have competence in at least one foreign language, governments looking to improve language education for socio-economic advantages, the European Commission seeking to lay a foundation for greater inclusion, mobility and economic growth through language learning and education policy makers trying to further the integration of language education with that of other curricular subjects.

CBLT continues to evolve and influence language instruction and acquisition all over the world, and is considered to cover a whole gamut of possibilities ranging from content-driven (e.g. total immersion) to language-driven (e.g. classes focusing on language that use content for language practice) programmes arranged along a continuum where the boundaries between related content-based approaches blur (Met 1998; Lyster and Ballinger 2011). There are many instances where language teaching is content-driven to a certain extent. For instance, a task-based approach—focusing on purposeful and contextualised activities—at post-secondary level in Japan has shown considerable promise for teaching courses in comparative culture (Lingley 2006), while school-based language immersion programmes have been successfully used to promote the learning of a second official language as in the case of French in Canada (e.g. Lazuruk 2007), Swedish in Finland (e.g. Södergård 2008), Catalan in Spain (e.g. Arnau 2000), Basque in Spain (e.g. Cenoz 2008, 2009; Ruiz de Zarobe 2010) and Irish in Ireland (e.g. Ó Baoill 2007). Regional and indigenous languages such as Breton and Occitan in France (Rogers and McLeod 2006), Maori in New Zealand (Reedy 2000) and Hawaiian in the USA (Luning and Yamauchi 2010) have also benefited from school-based CBLT programmes in which at least half the curriculum is delivered through these languages. Two-way immersion programmes have also been used to integrate first and second language users of two different target languages (e.g. Spanish and English) to provide curricular instruction in both languages (Lindholm-Leary 2001).

Many expressions have appeared to describe these different CBLT approaches. 'Sheltered instruction', for example, is a specific term to describe integrated language and content instruction widely used in the USA when teaching a second or foreign language through several other topics in the curriculum. In Europe, the preferred term is 'Content and Language Integrated Learning' (CLIL). It was launched in 1994 as an umbrella term encompassing different forms of combined

language immersion and content-based instruction by a group of experts from different backgrounds, including educational administrators, researchers, and practitioners (Coyle 2002; Marsh 2002; Dalton-Puffer 2007; Coyle et al. 2010). CLIL was coined to represent this amalgam of language and subject learning in which a non-language subject is taught through a foreign language, and as such its adoption throughout the entire European Union was recommended. As opposed to sheltered instruction in which students are generally second language learners and the main goal is to increase language proficiency in English—or some other language—without compromising subject matter, CLIL is an integration of foreign language and non-linguistic content teaching in which language and content play a joint role (Pérez-Vidal 2009). "Content based instruction" (CBI) is yet another term that has gained more popularity in the United States and Canada but, as Ruiz de Zarobe (2008) points out, it can be considered synonymous to CLIL in many respects.

European countries often have to deal with a variety of languages and cultures vying for room and attention within their curriculums (as is our case in Catalonia and the Balearic Islands), which has possibly led to a more limited type of immersion in Europe, with teachers not always being native or native-like speakers of the target language. However, with the adoption of CLIL models following European multilingual policies, current research indicates that a great deal can be achieved even with this type of immersion, which is often partial (Ruiz de Zarobe and Jiménez Catalán 2009; Lasagabaster and Ruiz de Zarobe 2010; Pérez-Vidal 2013). Some scholars have analysed the differences between CLIL and immersion (e.g. Pérez-Cañado 2012), including the goals of each approach, students' and teachers' profiles, the target languages involved—with the focus of CLIL being on foreign languages (Lasagabaster and Sierra 2010), mostly English—the balance between content and language instruction, and other pedagogical issues (Cenoz et al. 2014). Nevertheless, in some respects, CLIL and immersion programmes are similar insofar as both aim to integrate content and language instruction (Lyster and Ballinger 2011; Pérez-Vidal 2011).

Content-based approaches encompass a wide range of international contexts and instructional settings including English for academic purposes at secondary and post-secondary levels and language training in the workplace and have proved beneficial to all sorts of second/foreign language learners across a wide range of abilities and levels, from primary, through secondary and even higher education (Coleman 2006; Lyster and Ballinger 2011). Not surprisingly, such integrated approaches, and CLIL in particular, are growing exponentially. Thus, the broad application and adaptability to a variety of cultures and contexts that CLIL affords makes it a particularly interesting and relevant approach that is of interest on the global stage due to the valuable educational outcomes achieved. Accordingly, in this volume related to content-based learning in multilingual environments, in many chapters, we have mostly opted for the more European term associated with CBLT or CBI, namely CLIL, as an umbrella term broadly covering the central part of this continuum between content-driven and language-driven teaching approaches.

Educational theorists tend to agree that the ability to think in different languages, albeit to a modest extent, can have a positive impact on content learning. Hence, not only does CLIL promote linguistic competence but it also serves to stimulate cognitive flexibility and thereby further cognitive development. This is one of the main

reasons why this educational approach has become so popular across all types of schools, countries and continents. Furthermore, by actively involving learners in intellectually demanding work, a genuine need is created for them to acquire the appropriate language (Smith and Patterson 1998). However, its full potential might not yet have been reached as there may be some need to contextualise and thoroughly categorise this approach as regards diverse national frameworks, taking into account teacher education programmes as well as exposure to a foreign/second language outside of school (Sylvén 2013).

Therefore, in order to learn from experience and continue to hone this combined educational approach, which equips learners with knowledge suitable for an integrated world in a global age, there is a widespread need to continue to investigate and reflect on different content-based learning contexts and programmes. One way of ensuring best practice is to study a variety of scenarios where content and language integrated learning is already being implemented. Different questions may arise in this seemingly paradoxical endeavour of teaching an additional language through non-linguistic curricular content in an integrated fashion. For instance:

- In what ways do different age groups benefit from following a content-based language teaching programme?
- Does the coexistence of other languages help or hinder language acquisition?
- Are all language skills developed in the same way?
- To what extent is lexico-grammatical competence developed?
- How does content-based language teaching impinge on affective factors such as learner attitudes, beliefs, motivation and willingness to communicate?

In this book, we aim to address some of these questions through data-based research findings that will provide new insights into this holistic way of raising overall levels of language proficiency by teaching learners to overcome linguistic shortcomings while promoting equal access to education for all school-aged students.

The chapters in this book provide an overview of the state of the art in CLIL research, mainly, but not exclusively, from a European perspective, with a brief outline of its evolution from inception to current practice, while focusing on multilingual educational environments. This overview is combined with new evidence from a challenging and innovative research project, and in-depth discussion about the instruments used, the statistical findings and the conclusions which can be drawn, thereby addressing the paucity of empirical data to date in this area. Thus, the aim of this volume, which is divided into two parts, is to make a significant contribution to the research field of CLIL.

2 Towards Multilingualism Through CLIL

Part I of the volume consists of five chapters which explore the role of CLIL in fostering multilingualism. The first chapter of this part (Chapter "Different Educational Approaches to Bi- or Multilingualism and Their Effect on Language Attitudes"), by

Lasagabaster, is a welcome study of terminology-related problems such as, for instance, assuming bilingual and multilingual education are synonymous. The concept of multilingualism is analysed on a global scale, firstly by clarifying the current terminological amalgam concerning bi/multilingual programmes. The author looks at different types of educational approaches implemented in different parts of the world, focusing particularly on contexts in which the local language coexists with a national and an international language—mainly English—and the effects these contexts have on language attitudes and on the burgeoning worldwide trend towards multilingualism.

In Chapter "Languages for All in Education: CLIL and ICLHE at the Crossroads of Multilingualism, Mobility and Internationalisation", Pérez-Vidal discusses the relevance of languages as an asset for all students alike. She analyses the outcomes of CLIL programmes intended to meet the language demands of secondary education and pave the way for those set in higher education. The challenges of one of the major goals at secondary and tertiary education levels, namely, internationalisation through mobility programmes are also discussed, along with the foreseeable objective of internationalisation at home. This chapter sets the scene for what will be presented in the following chapters in the volume, since CLIL is presented as an approach that empowers learners, especially in multilingual academic settings.

Ruiz de Zarobe, in Chapter "The Effects of Implementing CLIL in Education", provides a comprehensive review of recent research on content-based instruction in order to analyse the implications of acquiring both content and language knowledge through a foreign language, thus providing new insights into the effects of CLIL instruction. This chapter explores the impact of CLIL on subject content learning outcomes, language learning results and pedagogic practices/classroom outcomes (e.g. tools for learning, strategies, and motivation). These are viewed from three angles: the effect of bilingual programmes on foreign language competence; differences between subject content learning outcomes in the first and the second language, especially when the students' home language is different and the possible effect of CLIL instruction on the acquisition of the first language.

In Chapter "Influences of Previously Learned Languages on the Learning and Use of Additional Languages", Jarvis explores the influence of previously learned languages on the learning and use of an additional language—a welcome introduction to the CLIL field. The author considers both the cognitive consequences of bi or multilingualism (the effect of simply knowing more than one language, whatever it may be) and cross-linguistic influence (the effects of the specific language known). Special emphasis is placed on these effects in classroom-based language learning in different Spanish multilingual regions. The author offers interpretations regarding how to enhance the positive effects of prior language knowledge while minimising its potential negative effects.

Chapter "Time and Timing in CLIL: A Comparative Approach to Language Gains" concludes Part I by tackling the pertinent question as to the best time and duration of instruction for CLIL through the revision of empirical studies with a quantitative approach to language gains. Muñoz reviews and compares CLIL outcomes under different starting age and exposure conditions and contrasts these with

outcomes from intensive language teaching programmes. The debate continues as to the best age and timing for CLIL, but some useful conclusions are drawn (e.g. older learners benefit from already developed cognitive-academic skills, and more conceptually demanding tasks may push language development further) and questions are asked to guide future research.

3 Research on CLIL Education in Multilingual Settings

Part II of the present volume responds to the need for further research, which is empirical and longitudinal in nature to provide a fuller picture of the effects of CLIL. It draws on findings from the COLE (Combination of Contexts for Learning) project, which provides empirical data regarding issues related to content-based language teaching in multilingual settings (see Chapter "Learning English and Learning Through English: Insights from Secondary Education" by Juan-Garau and Salazar-Noguera 2015 for a thorough account of the project). In this ambitious state-funded research project based in Catalonia and the Balearic Islands (Spain)—two officially Catalan/Spanish bilingual territories where a myriad of languages coexist—authentic content-based language teaching contexts are compared with non-CLIL classrooms. Longitudinal data collected from a sample of secondary education students are examined. The COLE project aims at comparing three language learning contexts—i.e. formal instruction (FI), CLIL, and study abroad (SA) in countries where the target language is spoken—so as to learn about their differential impact on the acquisition of English as an additional language. In this volume, we will specifically report on the contrast between CLIL and FI learning contexts in secondary education settings.[2] Thus, in Part II, evidence is provided of the effectiveness of CLIL in enhancing linguistic benefits and fostering multilingualism in the international arena. In short, COLE research, due to the systematicity of the data collection and the comparative nature of the data between CLIL and non-CLIL groups, can be relevant to other content-based learning contexts.

Chapter "Learning English and Learning Through English: Insights from Secondary Education" presents background information about COLE project research, on which the findings presented in the 8th through 14th chapters are based. Juan-Garau and Salazar-Noguera first give an account of the multilingual education policies implemented in the Balearic Islands and Catalonia, in the light of the strategies deployed in the rest of Spain and Europe, to subsequently acquaint readers with the research conducted within the COLE project, with a particular focus on the implementation of CLIL programmes in secondary education.

The 8th to 11th chapters present the findings of longitudinal empirical data regarding the receptive skills, writing, oral fluency and pronunciation, and lexico-grammatical development of CLIL learners when compared with non-CLIL learners.

[2] COLE project results as regards the SA context of acquisition in comparison with FI at the tertiary education level have recently appeared in another edited volume (Pérez-Vidal 2014).

All four chapters follow a rigorous formula of presenting previous studies in the field, clarifying the research methods and tools used, presenting statistical analyses of the data, and discussing findings in an accessible and critical way. Each chapter provides pertinent reading for all researchers in CLIL and may be of particular interest to other scholars to carry out quantitative research in the field of CLIL.

In Chapter "Testing Progress on Receptive Skills in CLIL and Non-CLIL Contexts", Prieto-Arranz, Rallo-Fabra, Calafat-Ripoll and Catrain-González report on the development of reading and listening comprehension skills in L3-English in compulsory secondary education. Performance is measured over a 3-year span and improvement is found in relation to both skills, with the CLIL group outperforming non-CLIL learners in both general and specialised reading comprehension.

The general aim of Gené-Gil, Juan-Garau and Salazar-Noguera in Chapter "Writing Development Under CLIL Provision" is to examine whether or not content-based language teaching has a positive effect on developing EFL written competence. Results point to a significant improvement in complexity, accuracy and fluency (CAF) over the 3-year period considered.

Chapter "Does CLIL Enhance Oral Skills? Fluency and Pronunciation Errors by Spanish-Catalan Learners of English" shows the uniformity of CLIL and non-CLIL learners in terms of fluency and proposes that these outcomes might be attributed, at least in part, to task effects. Rallo-Fabra and Jacob's study shows a marginal significant effect of CLIL on pause duration and frequency.

Lexico-grammatical development is seen to improve in content-based language settings, but increased attention to form and integration of language and content is postulated by Juan-Garau, Prieto-Arranz and Salazar-Noguera in Chapter "Lexico-Grammatical Development in Secondary Education CLIL Learners".

In Chapter "Exploring Affective Factors in L3 Learning: CLIL vs Non-CLIL", Amengual-Pizarro and Prieto-Arranz explore affective factors (attitudes, beliefs, motivation and interest in the target language) in L3 learning due to their acknowledged significant importance in second and foreign language acquisition. The authors show a positive effect of CLIL programmes on foreign language learning in general and on the learning of English in particular, in a study conducted over a 3-year period, along with a neutralisation of gender-related differences regarding motivational variables.

With the aim of broadening the range of studies in the field of willingness to communicate (WTC), in Chapter "English Learners' Willingness to Communicate and Achievement in CLIL and Formal Instruction Contexts", Menezes and Juan-Garau examine the relationship between WTC and achievement in FI and CLIL learning contexts. They find greater WTC in the latter. The authors provide an interesting take on what makes learners communicate in lessons and draw some helpful conclusions. Data gathering tools are described in detail and the pedagogical implications of these results are discussed.

The book concludes with a final Chapter "CLIL in Context: Profiling Language Abilities" that includes an overview of the impact of CLIL on learner language abilities, focusing on both productive and receptive skills. Evidence is given of the different effects of a CLIL approach as opposed to traditional FI in English as a

foreign language. Pérez-Vidal and Roquet use a range of instruments including written compositions, reading tasks, sentence formation tasks and grammatical judgement tasks (also measuring lexico-grammatical ability) in a series of tests taken at different data collection times to examine longitudinal development. The study generally confirms the effectiveness of CLIL approach in terms of linguistic progress found by other researchers. However, this fine-tuned study reveals that improvement does not occur to the same extent in all areas of competence.

4 Final Remarks

Content-based approaches have a far-reaching potential in language acquisition. They are inclusive and adaptable to suit the cultural demands of all those involved: learners, teachers and communities all over the world. This volume brings together existing research while providing new evidence regarding specific contexts through in-depth discussion about the instruments used, the statistical findings and the conclusions which can be drawn. Some of the concerns that have been expressed as regards the effectiveness and merit of content-based approaches on the global scale (Bruton 2011) are addressed in this volume, which offers much needed empirical insight into the understanding of one such approach, CLIL. The research conducted in multilingual educational environments presented herein, and especially the results put forward, can enlighten current debate on the relative efficacy of different content-based language teaching programmes by encouraging evidence-based practice in multilingual settings.

The studies included in Part II are of particular interest and encouragement to other scholars to carry out quantitative research in the field of CLIL and may constitute suitable reading for researchers in CLIL since they provide much needed longitudinal empirical data. They also intend to provide a more comprehensive assessment of student outcomes in CLIL contexts than has been customary to date, and represent a shift from celebration to a critical examination of CLIL, to better identify its strengths and weaknesses in different learning contexts—as called for by Cenoz et al. (2014)—by using classroom-based research to examine how teaching content works in CLIL settings and how this can be improved. The significant findings from the COLE project, along with the review of research and data collection tools used, offer much that can be of value for any reader interested in CLIL—from research design and tools, to findings and suggestions for further study.

This book is addressed to those involved or interested in CBLT and CBI on a global scale: practitioners, education administrators, second language acquisition students, applied linguists, and the CLIL research community that follow content-based approaches in Europe and beyond. It will also be of interest to those working in teacher education programmes and university programmes (TESOL, TEFL, SLA, applied linguistics, language learning, immersion/bilingual language learning, multilingualism, CLIL theory and practice, language learning theories and so on). Thus, we hope this volume will be enticing to international readers interested in language learning at large and in the integration of language and content learning in particular.

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Part I
Towards Multilingualism Through CLIL

Different Educational Approaches to Bi- or Multilingualism and Their Effect on Language Attitudes

David Lasagabaster

1 Introduction

A review of the history of humankind reveals that multilingualism has been a constant. In her enlightening article on the history of multilingualism, Franceschini (2013) explains that as early as ca. 2600 BC, the Sumerians already needed to train multilingual civil servants to respond to the challenges posed by their large empire, a preoccupation also shared by the Hittite and Egyptian empires. Similarly, in the Roman period, key institutions were multilingual. During the Middle Ages multilingualism was also commonplace, the merchants being among the most multilingual people (the Hanseatic League represents a remarkable example). Multilingual skills were part of many people's everyday life and Franceschini (2013: 5) concludes that "[w]e can assume that functional multilingualism was seen as the norm, and that non-ideological, pragmatic attitudes prevailed." Therefore, it can be affirmed that multilingual educational practices have existed for millennia, although a radical change took place from the fourteenth century onwards.

The Renaissance (from the fourteenth to the seventeenth centuries) became a turning point and the blossoming nationalist ideology led to the spread of a monolingual mindset in the belief that multilingualism could endanger national cohesion. In the case of education, these prejudices stemming from vested interests created the myth of the overcrowded school curriculum that had no space for any language other than the national language, presupposing that learning another language would detract from national-language literacy (Clyne 2005). In this period, purist attitudes started to emerge and there was an interest in homogenising societies. This trend was reinforced during the nineteenth century with the formation of nation states which forced the transformation of multilingual societies into a monolingual community, a time

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when nationalism became one of the leading forces in the spread of monolingualism. Since then, the dominant European ideology has inextricably linked the notions of nation, language and identity (Franceschini 2013), and regional or indigenous languages have been regarded as a threat to national unity for decades, their teaching being prohibited at school. In the early twentieth century, methodologically unsound research undertaken among economically deprived children also aimed to undermine multilingual practices and concluded that multilingualism had pernicious effects on children's cognitive development. A side effect of this unfortunate and biased conclusion was the boost of negative attitudes towards multilingualism.

Nevertheless, and despite all these pro-uniformity attempts, societies the world over have remained multilingual due to the impact of globalisation, the ever increasing flows of people, the burgeoning desire to maintain local languages and the spread of English as a global *lingua franca*. As a result of these intertwined processes, multilingualism is still the norm rather than the exception, despite the relentless pressure exerted by the aforementioned homogenising ideology in many parts of the world. In fact, it is currently estimated that there are between 6,000 and 7,000 languages spoken on the planet and the majority of the world population is bilingual or multilingual. But how is multilingualism defined nowadays? In the following section we will attempt to answer this question.

2 The Terms Bilingualism and Multilingualism

This section is devoted to analysing the terms *bilingualism* and *multilingualism*, a distinction that will pave the way for the following section in which I intend to examine how this terminological clarification bears on different types of bilingual and multilingual education models.

Multilingualism is traditionally used as an umbrella term that includes bilingualism. The Oxford dictionary, however, defines a bilingual as the person who is able to speak two languages equally well, whereas a multilingual person is described as the person able to speak or use many languages. Based on these definitions, two main conclusions could be drawn. Firstly, we can conclude that bilingualism refers to two languages and multilingualism to many. In fact, the dictionary includes an entry that leads the reader to "compare bilingual, monolingual" and the word *compare* implies that the terms "bilingual" and "multilingual" are not used as synonyms. Moreover, the Latin prefixes "bi" and "multi" literally mean "two" and "many" respectively, which would underpin our first conclusion. Secondly, our attention is drawn to the fact that whereas the bilingual person is supposed to speak or use both languages "equally well", this adverbial phrase is obliterated in the case of the multilingual. One could also infer that it is quite habitual to speak two languages equally well, but that this is a much convoluted task when three or more languages are involved. This latter idea is closely linked to the concept of multicompetence (for further information, see Cook 2006), which unfortunately falls beyond the scope of this chapter. I will focus then on the first conclusion in the following lines.

It could be advocated that researchers should attempt to avoid using both bilingualism and multilingualism interchangeably, as this lack of precision may lead to misinterpretations of research data. A second reason to propose this distinction is based on empirical research. Those researchers (Jessner 2006; De Angelis 2007; Aronin and Hufeisen 2009; Cenoz 2009; Dewaele 2010) who actively work on multilingualism have highlighted that there are significant differences between the acquisition of a second language and the acquisition of third or additional languages. De Angelis (2007), for example, provides abundant evidence illustrating the existing differences between L2 and multilingual acquisition. Jessner (2006: 13) happens to be very assertive and concludes that "nowadays it is known that learning a second language differs in many respects from learning a third language." This conclusion is also valid for bilingual and multilingual education and both terms should preferably be distinguished.

3 Bilingual and Multilingual Education

A review of the literature leads us to conclude that there is currently a terminological confusion concerning bilingual and multilingual programmes that undoubtedly needs to be clarified (Fortune and Tedick 2008), as terminological ambiguity may hamper the coherent design and implementation of such programmes. Darquennes (2013) distinguishes four main types of multilingual education: (a) multilingual education aimed primarily at the majority population; (b) multilingual education aimed primarily at the indigenous minority population; (c) multilingual education aimed primarily at the immigrant population within a state and (d) multilingual education aimed at an affluent international audience. The latter category encompasses those schools attended by children of diplomats, officials working for international organizations and expatriates working for multinational companies. This type of multilingual education would nicely fit into elitist multilingualism and therefore will not be of concern in this chapter. Taking into account the remaining chapters gathered in this volume, nor will this introductory chapter focus on the case of the immigrant population, but rather on the much more popular types (a) and (b) programmes mentioned above.

The classification put forward by Darquennes turns out to be problematic if applied to Spain (among other contexts). The main reason for this lies in the fact that in the six officially bilingual communities (Balearic Islands, Catalonia, Galicia, Navarre, Valencian Community, the Basque Country) in Spain, students attending bilingual programmes are not usually separated according to their mother tongue and, therefore, the same multilingual programme is aimed at both majority and indigenous minority populations. For example, in model D programmes implemented in the Basque Country and in which Basque is the language of instruction, both L1 = Spanish and L1 = Basque students are enrolled in the same group (as is also the case of two-way double immersion programmes in North America). This is just one example of how difficult it becomes to make generalisations concerning multilingual

education. In addition, this classification does not consider the number of languages involved, and bilingual and multilingual programmes are encompassed within the multilingual label.

The distinction between bilingual and multilingual education seems to demand further elaboration. García (2009) defines bilingual education as the use of two or more languages in the instruction and assessment of learners, on the condition that the languages are used as a medium of instruction and not simply taught as an additional language. Cummins (2011: 161) also coincides in this definition and refers to the use of "two (or more) languages of instruction". Once again bilingual and multilingual programmes are not distinguished.

In this chapter, *bilingual education* will be referred to when the education model concerned uses two languages as media of instruction and/or the objective is to reach bilingualism. Thus, schools in which a foreign language is only taught as a subject will not be regarded as bilingual models, as the results obtained in most parts of the world confirm that in these cases students' level of proficiency in the L2 leaves much to be desired. The objective of other programmes (despite being preceded by the label *bilingual*) is not to develop proficiency in both languages. Cummins (2011), for example, underscores that during the last four decades *transitional bilingual education* in the United States has only been aimed at promoting students' English proficiency. This type of programmes is encompassed in the so-called *weak forms* of education for bilingualism, as the actual language outcome is monolingualism. In contrast, *strong forms* of bilingual education such as immersion aim to produce bilingual and biliterate students (Baker 2011). It is worth considering that the Basque and Catalan education systems prove that bilingual communicative competence and biliteracy can be achieved only by using the minority language (Basque/Catalan) as language of instruction, as the majority language's (Spanish) vitality makes up for its use only as a subject. Research undertaken in the Catalan education system and the Basque model D confirms that balanced bilingualism can be reached without using the majority language as medium of instruction. The objective of these programmes is to reach bilingualism.

Among strong forms of bilingual education, Fortune and Tedick (2008) distinguish three immersion models that have distinct features: (a) one-way foreign language immersion: this model serves a majority language group in the process of acquiring the same second language (e.g. Swedish immersion in Finland; in the United States, this model exists in 18 different languages); (b) two-way bilingual immersion; this model caters for speakers of the two languages of instruction who are in the process of acquiring the partner language (e.g. in the US Spanish = L1 and English = L1 students enrolled in the same class). This model is a good example of the current proliferation of labels, as it is also referred to as "two-way bilingual immersion", "two-way immersion", "dual language" and "dual language immersion"; and (c) indigenous language immersion: this model is dedicated to the cultural and linguistic revitalization for Native or Aboriginal groups around the world (e.g. Maori immersion in New Zealand). The common objective of these three models is additive bilingualism and biliteracy. Due to the different local needs, sociolinguistic contexts, status of the languages concerned and other idiosyncratic

features, from an international perspective all these programmes are usually included in a single "bilingual education" label. In any case, it has to be acknowledged that there is such variation in how these models are put into practice not only in the macro context (each country), but also in the meso context (each region/autonomous community/state/province) and even in the micro context (each specific school), that scholars are inevitably forced to fall back on working model definitions. Just a comparison of the definitions adopted at national level reveals very different situations and illustrates the complexity of trying to provide definitions suitable to the various contexts where immersion is currently being implemented.

Multilingualism, as understood in this chapter, goes a step further in its linguistic objective, which is why the label *multilingual education* will only be used if the educational model concerned uses three languages as media of instruction and/or the objective is to reach at least trilingualism. The Basque experimental programme called *Framework for Trilingual Education* would be encompassed in this category, as Basque, Spanish and English are used as means of instruction in the 118 schools involved in this experience. Genesee (2008) reports that trilingual school programmes also exist in North America: in Montreal some English-speaking Jewish students attend Hebrew/French/English immersion programmes, and students of Mohawk take part in a Mohawk/English/French programme. However, the use of more than two languages as media of instruction is rather complicated and not very widespread, which is why those education systems whose objective is to develop trilingualism are also included in this category.

The presentation of a typology of multilingual education is beyond the reach of this chapter due to the many challenges it poses and the complexity brought about by different programme designs, diverse sociolinguistic contexts and the variety of languages involved. However, the reader interested in a tool especially designed to describe any situation of multilingual education can rely on the *Continua of Multilingual Education* proposed by Cenoz (2009: 34).

Apart from the difficulties concerning the definition of multilingual education, an additional hurdle is to be found in the lack of continuity of multilingual education at all levels, especially in the case of indigenous minority languages. In many parts of the world, multilingual education is rarely found on all rungs of the educational ladder, especially at university level (see Doiz et al. 2013a).

Many different contexts are usually quoted in the literature as examples of purportedly multilingual educational contexts, but I will focus on just a few due to space constraints. There is no doubt that Asia and Africa (together with Latin America) are the most multilingual continents. A paradigmatic example in the Asian continent would be the case of India, a country with two official languages (Hindi and English) at the federal level and 22 constitutionally recognized official languages. Mohanty (2006: 268) asserts that "attitudes of mutual acceptance, and a 'true' multilingual worldview are seen as very characteristic of Indian multilingualism", but this traditional coexistence has been put into jeopardy by the powerful presence of English. However, the Indian people are still required to develop oral and written skills in many languages, which led to the establishment of the so-called "three-language formula" in 1957. Since then, this formula includes the regional or

mother tongue as the first teaching language, Hindi as the second language and English as the third language. Mohanty (2006) underscores that the lack of a uniform language policy perspective has entailed that the three-language formula simply embodies a political and ideological statement that maintains little connection with actual practices and asserts that it is not common to have three languages as media of instruction. Mohanty (2006: 279) concludes that education in India is multilingual only on the surface, while it remains mainly monolingual at an underlying level.

In Hong Kong a similar situation can be found. For over 150 years, Hong Kong was a British colony and English was the sole official language, until Chinese became co-official after a strong bottom-up social movement in 1974 (Li 2013). The general education policy is of biliteracy and trilingual abilities due to the fact that English is valued for maintaining and boosting economic vitality. Putonghua (Mandarin) represents the national language and *lingua franca* among dialect speakers in Greater China, and Cantonese is the identity language used as language of instruction in primary and secondary education (gradually substituted by Putonghua). Controversy surrounds this multilingual language policy, as "one perennial problem is that for average Cantonese-dominant Hong Kongers, neither English nor Putonghua is easy to learn" (Li 2013: 81). Moreover, Cantonese shares the official status with Putonghua and English only in name but not in spirit (Lee and Leung 2012). Last but not least, English-medium instruction is not as successful as expected and has in fact sometimes become an insurmountable stumbling block for students who "are not achieving gains in content learning equivalent to those of students in mainstream mother tongue education" (Hoare and Kong 2008: 257).

In Africa, the linguistic situation of South Africa could also be mentioned. Despite being one of the handful of countries in the world that recognises more than two languages (11 to be precise) as official, African languages are only used in the first 3 years of education. At higher levels of education, only English and to a lesser degree Afrikaans are used as media of instruction, which entails that most of school and university students are taught in a language "in which they may not have developed adequate proficiency for academic study" (van der Walt and Kidd 2013: 27). This is the outcome of colonial and post-colonial political decisions that have negatively impacted on attitudes towards African languages (Jones 2012) and fuelled the belief that colonial languages are vital.

Despite the increasing demand for multilingualism, all the previous examples illustrate that multilingual education is not an easy enterprise and that often only lip service is paid to its implementation. In contrast, Luxembourg's multilingual educational system provides a particularly successful example, worth mentioning at least briefly. The Luxembourg language law of 1984 recognises three languages (Luxembourgish, French and German) in the country and all of them are used as means of instruction, English representing the fourth language in the curriculum. Horner and Weber (2008) indicate that Luxembourg's trilingualism is regarded as a symbolic pillar of national cohesion and as an asset in the job market. As a matter of fact, a multilingual spirit is very much embedded among the Luxembourg population and, for example, the place of French, German and English literatures in schools and cultural life are taken for granted and students are not likely to call these

literatures foreign. This would thus be a good case in point of multilingualism viewed as a unified entity, as languages are considered from a holistic and integrated perspective. However, as Clyne (2005) underscores, this is an unusual state of affairs in Europe for most European educational systems do not espouse this strict version of multilingualism.

4 Content and Language Integrated Learning (CLIL)

As for the broad European context, European institutions are promoting the spread of multilingual education, as it is expected that all European citizens should have practical skills in two languages in addition to the mother tongue. This top-down approach to multilingualism is also supported by national, regional and local education authorities, as there is widespread belief that Europe's future must be multilingual. This language policy has fostered the implementation of CLIL (Content and Language Integrated Learning), to which I will briefly refer due to its paramount role in different chapters of this volume. Most CLIL programmes are taking place in bilingual programmes, whereas multilingual programmes are mainly found in education systems with an indigenous minority language. It is estimated that there are approximately 60 indigenous minority languages in the European Union and 150 in the whole of Europe (Darquennes 2013), but only a few of them are included in multilingual school programmes.

Coyle (2007: 545) defines CLIL as "an integrated approach where both language and content are conceptualized on a continuum without an implied preference for either." In this chapter CLIL is about using a foreign language, not an L2 or indigenous minority language (see below). This term is very popular in Europe, but its use is spreading over many other parts of the world (Asia and South America), except across the North American context where CBI (Content-based instruction) is preferred (for more information on this, see Tedick and Cammarata 2012). CLIL has become a fast developing phenomenon in Europe. According to Eurydice (2006) (a network that provides information on European education systems and policies which is co-ordinated and managed by the European Union's Education, Audiovisual and Culture Executive Agency), CLIL programmes are offered to between 3 and 30 % of pupils at primary and/or secondary education level, although there are sharp contrasts between the 31 countries analysed. As for trilingual programmes, this report asserts that:

> Seven countries (Estonia, Spain, Latvia, Luxembourg, the Netherlands, Austria and Sweden) provide scope for trilingual CLIL provision combining the national language and two foreign languages (Spain and Latvia), or the national language, a foreign language and a minority language (Estonia, Spain, Latvia, the Netherlands, Austria and Sweden) (Eurydice 2006: 19).

As CLIL syllabuses are usually developed to meet local needs, there is huge variation in its implementation, but there is also a common denominator: most of the programmes are carried out in English, a language which has established itself

to a greater extent than Latin, French and other dominant languages in earlier times and its perceived importance has made it the preeminent foreign language in CLIL contexts. In bilingual settings this entails the presence of multilingual practices, which is why the use of the term L3 or third language is more and more common in the literature (Jessner 2006; De Angelis 2007; Cenoz 2009) and "can be regarded as a specific aspect of the study of multilingualism" (Cenoz 2013: 72). This is leading to a world context in which, as Ricento (2013: 138) puts it, "[f]rom a global perspective, the number of people who use English as their first or native language is decreasing, while the number of people who use it as a second or *third language* for various purposes—in local, translocal, or transnational contexts—is increasing" (my emphasis). Spain is one of the countries significantly affected by this global trend.

The lack of precision when it comes to the use of terminology can also be observed in the description of CLIL programmes. The confusion between CLIL and immersion creates problems for those willing to become better acquainted with these approaches, as these terms are used interchangeably in the literature. This is the case of the aforementioned Eurydice (2006) report, in which the CLIL label becomes a generic term to describe all types of provision in which a second language (irrespective of it being a foreign, regional or minority language and/or another official state language) is used to teach certain subjects in the curriculum other than language lessons themselves. However, and despite the obvious similarities between CLIL and immersion, several important dissimilarities (teacher training, teaching materials, the sociolinguistic context, methodological aspects and linguistic objectives) should serve as the argument in favour of a clear distinction between these two types of programmes (see Lasagabaster and Sierra 2010 for further discussion). In this chapter, the label CLIL will only be utilised to refer to programmes in which the L2 or Lx is a foreign language.

5 Multilingual Education in Spain

Christian (2008) points out that there are currently about 600 immersion schools in the United States which account for well over 100,000 thousand students. These are significant figures on their own, but far below other contexts such as Spain, whose population (44 million) is much smaller than that of the United States (ca. 310 million), but where there are more students involved in immersion programmes than in the United States as a whole. The presence of co-official languages (Basque, Catalan and Galician) in different autonomous communities has led to the spread of bilingual education programmes. Moreover, as Coyle (2010: viii) points out CLIL is clearly on the increase:

> Spain is rapidly becoming one of the European leaders in CLIL practice and research. The richness of its cultural and linguistic diversity has led to a wide variety of CLIL policies and practices which provide us with many examples of CLIL in different stages of development that are applicable to contexts both within and beyond Spain.

This diagnosis is also shared by Johnstone (2009: v), who affirms that the desire to maintain and foster the co-official languages is complemented by the burgeoning of CLIL programmes:

> Spain is rapidly becoming a leading country in the world of early bilingual education (EBE)—well-known for several years for its first-language maintenance and second-language immersion programs in Basque and Catalan, but in recent years accompanied by an increase in EBE for English that is breathtaking in its scope and its speed of implementation, and laudably intended for ordinary children in state schools rather than restricted to privileged elites.

This means that in the Spanish bilingual communities the incorporation of (mainly) CLIL in English is making some autonomous communities implement multilingual education programmes. Nevertheless, some schools offer a multilingual educational system as bait to boost their enrolment figures, a trend that is increasingly popular. Consequently, the concept of multilingual education runs the risk of being watered down, as many schools claim to implement multilingual programmes just because they teach a few different languages as subjects. The strict view of multilingualism would point out that the hearing of different languages in the playground and the corridors (for example, due to the presence of immigrant students), and their use in some scattered posters on the walls are not enough to make a school multilingual (despite the obvious benefits of making these other languages visible). In accordance with the strict view of multilingualism advocated in this chapter, I will use the term *multilingual education* to refer only to schools in which more than two languages are used as means of instruction or in which trilingualism (and triliteracy) is a clearly stated objective (see the previous section).

Although the Spanish State ensures the basic unity of the education system, the 17 autonomous communities that make up Spain have assumed powers based on their respective Statutes of Autonomy. These powers allow them to organise and administer the education system within their own territory. The case of the officially bilingual regions aforementioned is worth underscoring, as they have implemented innovative programmes that boost the use of English as language of instruction while also maintaining and promoting teaching in their respective minority language. Consequently, multilingual programmes can be found in all the Spanish bilingual autonomous communities (see Lasagabaster and Ruiz de Zarobe 2010), albeit to different degrees of development. Although several aspects of CLIL are currently being researched, in the next two sections I will focus on studies on language attitudes due to their enormous impact in the language learning process.

6 Language Attitudes

The term *attitude* can be defined as a positive or negative feeling about some person, object or issue acquired through social interaction. Since language is the main form of human communication and interaction, language attitudes have the potential to influence such interaction to a great degree. Much attention has been paid to

language attitude research during the last decades and this interest has contributed enormously to the development of this field of research. In second language acquisition, attitude studies have focused on many different areas such as speakers of the L2, L2 learning, parental attitudes, language use, language learning preferences, language policy, minority languages, English as a *lingua franca* and bilingual education among others.

The affective-attitudinal component plays a paramount role in language learning (Jessner 2006; Garrett 2010), as *mutatis mutandis* positive attitudes are very likely to facilitate the learning of another language. Students' attitudes towards the L2 or Lx are crucial to language learning success, although research studies have also demonstrated that language achievement can bring about more positive attitudes: "for some learners the initial motivation to learn a language does not come from internally or externally generated self images but rather from successful engagement with the actual language learning process" (Dörnyei 2009: 29). Research studies undertaken in very different contexts have demonstrated that the attitudes and motivation to learn a foreign language can vary not only from language to language—even within the same group of learners—but also within different age groups. It has also been observed (Davies and Brember 2001) that there is a general decline in positive attitudes towards school subjects as academic years go by, indicating that the more years students spend studying a subject, the more disenchanted they become with it. In this vein, the study by Heining-Boynton and Haitema (2007) reported the attitudes of students towards a foreign language (French or Spanish) over a 10 year period in North Carolina (the United States) and the results revealed that students' enthusiasm declined among both boys and girls (although girls harboured more positive attitudes). These authors conclude that attitude formation toward language learning is a critical component of early schooling.

In any case, the close relationship between L2 or Lx language learning and attitude has drawn researchers' interest and produced a considerable amount of data, applied research, methodological sophistication and development of theoretical ideas. According to Baker (1992), there are three main reasons why attitude is a central explanatory variable: It is a term in common usage beyond the limited scope of specialists; it provides an indicator of learners' thoughts, beliefs and preferences; it has maintained an influential position in L2 learning theories for over 70 years.

However, and although attitudes are relatively stable within speech communities (Dewaele 2010), they can be characterised as dynamic rather than static, since they may change due to the effect of different individual (e.g. dislike of a teacher) or social factors (e.g. war against the country where the language concerned is spoken). Language attitudes can hence be affected by different agents, and among these, institutions such as schools are powerful influences. Every individual develops in a social context and in today's world many people spend a considerable part of their lives attending education establishments (Lasagabaster 2013).

Attitudes towards languages are manifestly affected and motivated by the languages' presence and their role in education. Many indigenous languages have been stigmatised in the educational domain, as a result of which attitudes towards them tend to be negative even among their own speakers, whereas more powerful

and international languages happen to be very positively rated. The success of language policies and education-related initiatives cannot be properly assessed without reference to language attitudes, which has led to a recent trend to analyse them in both bilingual and multilingual education contexts.

7 Language Attitudes, Bilingual and Multilingual Education

This section tackles the effects of different bilingual and multilingual programmes on language attitudes and how they may affect the spread of multilingual education models and, consequently, of multilingualism. Due to space constraints the discussion will be mainly focused on the Basque Country in Spain, but connections will be made to international contexts.

If a particular language has high status in the eyes of the students enrolled in bilingual education programmes, they will harbour more favourable attitudes towards it. In such contexts the political dimension comes to the fore and the psychological merges with the political, so that attitudes become part of a multilayered and dynamic scenario related to identity construction and language ideologies which has individual, group and societal dimensions. Nowadays there is no doubt that the political dimension of language learning has to be considered when it comes to examining language attitudes.

Nevertheless, language attitudes are also of the utmost importance not only at the macro (political) level but also at the micro (class) level. In fact, one of the crucial roles of teachers is to foster positive language attitudes amongst students. In Spain, for example, reversing negative attitudes and the low status of languages such as Basque, Catalan and Galician was one of the main objectives of the bilingual programmes implemented during the early 1980s. Doubtless, bilingual education has played a paramount role in this scenario and research studies have recurrently confirmed that students enrolled in programmes in which the minority language is used as means of instruction hold significantly more positive attitudes than those who only had Basque, Catalan or Galician as a school subject. This increasing importance of the minority languages in the school system (among other factors) has also enormously contributed to their more positive attitudinal stance in society in general, as attested by the different sociolinguistic surveys carried out in bilingual regions such as Catalonia, Galicia and the Basque Country.

The introduction of CLIL as a way to boost multilingual education involves using the foreign language within an existing bilingual language ecology. Although there are good reasons to implement CLIL, there is a need to examine how this introduction bears on the other languages and their speakers. It is in this context when the study of language attitudes should come to the fore, as it becomes especially crucial in multilingual education contexts in which a minority language is being revitalised. The vast majority of studies on language attitudes have been undertaken in monolingual or bilingual contexts, whereas multilingual contexts have traditionally been overlooked. This gap needs to be filled, since the European

Union's promotion of the "mother tongue + two other languages" policy for all citizens in the European Commission's Action Plan for Language Learning will lead to an increase in school multilingual programmes.

In the Basque Country, Lasagabaster and Sierra (2009) report that some voices claim that the ever increasing presence of English will bring about undesirable and destabilising negative effects on language competence and attitudes towards Basque as the minority language. The main concern is that the time allotted to English as medium of instruction detracts from Basque, negatively affecting the minority language. After all the efforts spent on reversing Basque's situation, this ominous prognosis is understandable but shows that research done in this area needs to reach a wider public. With these critical standpoints in mind, Lasagabaster and Sierra conducted a study to analyse whether secondary education CLIL students held similar attitudes to the three languages in the curriculum (Basque, Spanish and English) to those of non-CLIL students who had more subjects taught in Basque and none in English (except the English language class). The results revealed that CLIL students held significantly more positive attitudes not only towards English (see also Amengual-Pizarro and Prieto-Arranz 2015) but also towards Spanish and Basque. The authors underscore that one of the dimensions considered in the introduction of CLIL programmes was closely related to the belief that this approach would positively affect the development of plurilingual attitudes and interests. Their results tallied with the purported benefits for students of the CLIL approach and indicated that the presence of English as medium of instruction should not be automatically linked to more negative attitudes towards the other two languages, especially towards Basque as the weak link of the language chain. However, the authors acknowledge that longitudinal studies are needed in order to shed more light on this issue and analyse whether these positive attitudes are maintained throughout compulsory education and beyond, as it is necessary to track changes in language attitudes among multilingual students over time in a more systematic way.

Nevertheless, the influence of multilingual education programmes on language attitudes is not always so rewarding and salutary. In Hong Kong (see also Ruiz de Zarobe 2015), the "biliterate and trilingual ability" policy mentioned above has generated much controversy in the Chinese University of Hong Kong (Li 2013). This higher education institution declared Chinese the principal language of instruction, but English has often been used in many disciplines. However, a linguistic storm was unleashed in 2004 when the newly appointed Vice-Chancellor decided to offer more courses in English to foster internationally recognised excellence in research. This decision provoked a prolonged dispute between the university management on the one hand, and quite a few academics, students and alumni associations on the other who considered that English was being conferred special status at the expense of Cantonese and written Chinese (Putonghua/Mandarin). After 4 years of struggle and three legal battles, three different courts reached the same verdict and declared that from a legal perspective English can be the main language of instruction. Hence, this conflict shows that a legally based language policy (in this case the use of English as main language of instruction) may provoke much controversy if is it not in consonance with society's language attitudes and beliefs.

The recent Malaysian experience represents a different illustrative example of what could be described as faulty multilingual education. Multilingualism is taken for granted in Malaysia, as three large ethnic groups coexist in the country: Malays (50.4 %), Chinese (23.7 %) and Indians – mostly Tamils from South India – (7.1 %). Education in different languages is widely accepted in the country (Tan 2005), but most schools have traditionally used only one language of instruction and are usually referred to as Malay- or Chinese- or Tamil-medium schools. In 2003, a bilingual education policy was implemented that envisaged that maths and science would be taught in English. This Malay-English bilingual model coexisted with Mandarin-English and Tamil-English bilingual options that included Malay as a subject, which is called the "three-language solution" and whose aim is to appease ethnic sensitivities. Due to several reasons (the dearth of teachers, the gap between rural and urban schools, the undermining of students' proficiency in Malay, the poor results obtained in a year-long assessment and very negative attitudes verified in public consultations), in 2009 the government decided that generalised English-medium instruction would be phased out from 2012. The 6 year period in which English-medium instruction was implemented sparked a bitter and heated debate that aggravated extreme language attitudes, two irreconcilable groups being clearly distinguished: those who called it a lost opportunity to connect Malay to the global economy and were very favourably disposed towards English, and those who favoured the promotion of Malay identity and held very negative attitudes towards English and the Anglophone colonial past. This is a clear example of how a loosely planned education initiative aimed at bolstering multilingualism can trigger exacerbated language attitudes and confirms that language attitudes may influence the success or failure of entire language planning strategies (Jones 2012).

Last but not least, I would like to make reference to a holistic approach to language attitudes. Many scholars (Cook 2006; Jessner 2006; De Angelis 2007; Cenoz 2009; Dewaele 2010) endorse the idea that research on multilingualism cannot revolve around monolingual and bilingual parameters and that it deserves to be considered on its own. The central idea is that languages do not reside in separate compartments, but instead they are inter-related and constitute a single and holistic system. In accordance with the concepts of multilingualism and multilingual education as understood in this chapter, some authors (Baker 1992; Lasagabaster 2005, 2009) have proposed that the traditional fractional perspective on language attitudes, whereby they are analysed as separate units by asking the participants about each of the languages independently, should be reconsidered. These authors argue that this holistic approach to multilingualism should be applied to the examination of language attitudes and monolingual parameters replaced by multilingual parameters.

Taking multilingual parameters as a basis, Lasagabaster (2009) compared students enrolled in a trilingual programme with CLIL in English with students who attended a bilingual programme in which English was only taught as a subject. The former obtained significantly higher means in all the five factors (social presence of trilingualism, cognitive and economic benefits of trilingualism, the learning of three languages, social benefits of trilingualism and attitudes towards trilingualism)

distinguished through factor analysis in the holistic questionnaire. Although it was detected that some attitudinal aspects still have to be improved, the results indicate that the implementation of CLIL has a positive effect on language attitudes towards trilingualism. Despite CLIL's beneficial impact, there is a need to work on language attitudes as a way to avoid linguistic friction when a minority language coexists with a majority language and the augmenting presence of English. All the stakeholders (namely teachers, the administration, families, peers and other social groupings) should make a joint effort to spread the rich linguistic capital present in schools and to foster high levels of multilingualism.

Conclusions

This chapter aimed to make it evident that there is a compelling need to distinguish between bilingualism and multilingualism, because otherwise "coming to terms with terminology can be difficult" (Fortune and Tedick 2008: 3). De Angelis (2007: 8) underscores that "[m]ost people understand a multilingual person to be an individual familiar with three or more languages to some degree of fluency, and a bilingual an individual familiar with two languages, also to some degree of fluency." This distinction should be maintained when dealing with bilingual and multilingual education, as the challenges posed by each of them are clearly different. The current role of English as a global *lingua franca* is bolstering the implementation of multilingual education programmes whose objective is to produce trilingual speakers, a trend that is nowadays much more widespread than it was in the recent past. The Spanish multilingual context has been presented as a very good case in point and the need for research into the effects of multilingual programmes as urgent.

Strenuous efforts are being made to restore to minority languages their position in educational systems the world over, but on many occasions they still appear unglamorous when compared with English, the current *lingua franca* and the language of Hollywood, science, technology and the NBA (National Basketball Association). The spread of English as the global *lingua franca* by means of globalising forces has generated two main types of attitudes. On the one hand, the attitudes held by those favourably disposed who observe this process as a fact of life that can become an opportunity for individuals and societies to obtain manifold benefits. On the other hand, those more critical are afraid of its homogenising effect and the threat it poses to the survival of local languages and cultures, and even to other international languages and multilingualism without English (Doiz et al. 2013b). Just in Europe the coexistence of English and indigenous minority languages directly affects a panoply of languages such as Luxemburgish in Luxemburg, Swedish

(continued)

in Finland, French in the Aosta Valley, as well as to all the many bilingual contexts in which a regional language (Basque, Breton, Catalan, Frisian, Gaelic, Galician, etc.) is also taught in the curriculum. In such multilingual settings, the study of language attitudes is undoubtedly worth pursuing.

In the case of the bilingual autonomous communities in Spain, where a minority language is spoken and the spread of English is clearly on the increase, linguistic friction is sometimes considerable and researchers need studies on which they can base their defence of an educational system wherein the minority language is fostered as a springboard to multilingualism. Ample research evidence has recurrently discredited the belief that learning additional languages causes interference in the other language (what Clyne 2005 labels the *interference fallacy*), while it has demonstrated that balanced bi-or multilingualism brings cognitive advantages (Jessner 2006; Cenoz 2009; García 2009; Jarvis 2015).

Notwithstanding this, the title of a paper by Edwards and Newcombe (2006), "Back to basics: Marketing the benefits of bilingualism to parents" makes it evident that there is a need to convey a neat message to try to debunk the *monolingual-is-better* myth. Kramsch (2008: 316) argues that there is an additional matter to bear in mind, since there is a generalised feeling that "it is one thing to be multilingual in dominant national languages with high symbolic capital like French, German and English; it is quite another to be conversant in other, minor, languages like Yiddish, Czech, Basque, Breton or Gaelic." Although studies reveal that schools can develop the language potential of children irrespective of their background and the languages involved, not everybody is willing to accept it. Therefore, the study of different aspects of multilingual school experiences is urgently needed, as only the data obtained through empirical studies will help to improve these programmes and to convince the sceptical who consider that the presence of more than two languages in the curriculum may become a stumbling block for the normal cognitive development of children.

In the current globalised world, monolingualism is simply not affordable and, therefore, there is a need to develop a multilingual approach to language teaching (Hufeisen and Jessner 2009) that will help to improve language attitudes and subsequently language learning. The results put forward in this chapter confirm that language environment and methodology as represented by effectively implemented multilingual programmes are key factors in determining attitudes towards multilingualism.

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Languages for All in Education: CLIL and ICLHE at the Crossroads of Multilingualism, Mobility and Internationalisation

Carmen Pérez-Vidal

1 Introduction

At the beginning of this third millennium, educationalists, administrators and applied linguists are engaged in the project of promoting multilingualism at all levels within national educational systems, a goal which is not proving easy to achieve. For example, in the European Union, including 27 states, with 23 official and working languages and a population of 490 million, according to a recent survey, only 56 % of citizens are able to have a conversation in a language additional to their first language(s), with differences among the member states (European Commission 2006).

In accordance with the objective of promoting multilingualism, for the past two decades, languages have come to be seen as an asset for all students alike, no longer only for the language specialists, particularly at tertiary level. Tudor (2008: 52) describes the situation as framed in the realisation of the Bologna Process, whose goal is 'the development of a coherent and a cohesive European Higher Education Area (EHEA) by 2010 (Berlin Communiqué 2003, in European Commission 2012)' with transparency of accreditation and mobility across educational systems. Undoubtedly, language competence is necessary for learners to communicate effectively with counterparts, and this has been stressed in relation to the main tenets behind the multilingual project of the European Union: 'If you really want to connect with someone, you can do no better than speak their language' (Fox 2008: 68).

Language competence touches on the ability to gain access to specialised materials, participate in mobility programmes throughout Europe (Comenius, Leonardo and Erasmus, Erasmus Mundus, Tempus), engage in cross-border

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projects, relate to international partners and, later on in life, find employment and be professionally mobile. In sum, it is nowadays assumed that mainstream educational programmes should enable learners to be competent in several languages, which above all in European terms means 'not only in English' (European Commission 1995, 2005, 2007). However feasible this goal may appear, it has proved not to be easy. One key issue has been that efforts have been concentrated in learning English, to the detriment of other languages, as a direct consequence of market forces at play and English gaining the status of the international language *par excellence*.

Part and parcel in the multilingual policy strategy is the widespread and increasing success of a new approach to education in which curricular subjects are taught through the medium of non-L1 languages, again more often than not that language being English. The current name for such innovative initiatives at primary and secondary educational levels, which appears to have triumphed over others, is Content and Language Integrated Learning (CLIL), and, at tertiary level, Integrating Content and Language in Higher Education (ICLHE). It must be noted that, as Smit and Dafouz (2013) rightly contend, there is an implicit tension implicit in the terminology chosen to refer to such programmes, undoubtedly reflecting differences between them. The tension exists between two pedagogical positions. On one extreme we find the 'dual-model pedagogical approach', which caters for both content and language teaching/learning, and this has been claimed to be what CLIL and ICLHE should do (see Coyle et al. 2010: 41–45; Wilkinson 2004: 10, respectively). In that respect, as Smit and Dafouz (2013) also emphasise, '[…] practices lacking such fused pedagogical teaching aims would not fall into prototypical CLIL programmes'. At the other end of the spectrum stand those programmes which focus on content only, so that at tertiary level, when this is the case, the term English Medium Instruction (EMI) or Integrating Content and Language (ICL) would appear to be more exact.

The general aim of the present chapter is to explore the extent to which CLIL and ICLHE innovative initiatives have contributed to the above-mentioned general goal of educating our younger generations as plurilingual individuals, ready to become active professionals in an increasingly international arena. It must be noted that CLIL is generally offered in combination with formal instruction (FI) in mainstream education. This is not so at tertiary level, where ICLHE/EMI/ICL are generally offered hand in hand with mobility programmes. Hence, this chapter seeks to highlight the instrumental role that CLIL programmes play as international experiences in their own right, and as preparation for experiencing mobility in the country where the target language of students is spoken. Such a specific induction role is a dimension of CLIL programmes which this chapter aims at bringing to the fore. In order to do so, it first offers an overview of the developments of the CLIL approach in Europe as a strategic feature in multilingual educational policies. Second, it presents the new status of English worldwide and how it has affected education and internationalisation, from initial to tertiary levels. Third, it offers an overview of the impact of CLIL or ICLHE and study abroad (SA) programmes from the perspective of second language acquisition. Finally, some conclusions

are drawn as to how well these programmes serve the purpose of promoting multilingualism, allowing learners to become plurilingual and pluricultural language users with transcultural identities.

2 Taking Stock

If it is assumed that there is a role which curricular programmes through the medium of additional languages are to play in promoting languages for all, a question arises as to what specific contribution they may make towards that goal. Indeed, and prior to that, one may query the grounds on which such an assumption is made and what makes CLIL and ICLHE so attractive these days. In order to answer these questions, we first need to go back in time so as to take stock of developments in the field (see also Fortanet-Gómez 2013: 45–49 for another account of the early developments of CLIL).

At the end of the 1990s, in the early days of CLIL and ICLHE programmes, before they were even bore those names, many were the views put forward by European specialists on their status and role in education. Pedagogues and practitioners would argue about their educational and learning benefits (see, e.g., the edited volume by Grenfell 2002); applied linguists would claim that input, output and interaction through a non-L1 language mostly focused on meaning, without leaving aside from altogether, would spur linguistic development (see Muñoz 2007; Pérez-Vidal 2007 in the volume edited by Lorenzo et al. 2007); administrators and language policy makers would reflect on the social dimension of the initiative, often related to the idea of European citizenship and the ecological value of introducing linguistic diversity in the educational systems and mirroring linguistic diversity in Europe (Maljers et al. 2007). This was in sharp contrast, we would suggest, with the approach which seemed to be at the backbone of Canadian immersion programmes, or Content Based Teaching (or Instruction) experiences in the United States (Brinton et al. 1989), and granted European CLIL and ICLHE an identity of their own, a specificity. Whereas immersion programmes had the brief of enhancing second language learning, French in Canada, English in the United States (Lyster 2007; Genesee 2013), in Europe there were several different agendas behind our respective programmes.

Indeed, CLIL and ICLHE were clearly on several agendas and have remained so since those early days: they were on the political agenda, on the agenda of many families and on the educational agenda, as we have contended (Pérez-Vidal 2013: 60–65). Regarding the political agenda, second or foreign language medium instruction has played a prominent role in the European Strategy towards multilingualism, being actively promoted through a series of funded associations, projects and networks ever since the 1995 White Paper on Education and Training was issued. To this day, languages have periodically been discussed at high-level meetings held by the European Commission and the Council of Europe. The Directorate General for Education and Culture XXII had a budget for languages and even made multilingualism a separate portfolio for one of the Commissioners between 2005 and 2009. Indeed, a series of

projects—including the European Language Council (ELC) association, the DIESeLL, the CLIL Compendium, the ALPME, the TICCAL, the TIE-CLIL, the ELAN, to name but a few, and the MOLAN and CASCADE networks—worked to refine the initial idea of bilingual education (see Baetens-Beadsmore 1993; Baker 1996; and later on García 2009, for a discussion of bilingual education with a US perspective).

Bilingual education was the term first used in European circles to refer to educational initiatives in which the language used as the medium of instruction is an additional language, different from the first language(s) of the learners. A Thematic Network Project on Bilingual Education in place between 1997 and 2001 still operated with that term (see Van de Craen and Pérez-Vidal 2000). By the end of the project, CLIL was adopted as a better term to capture the specificity of the European initiatives.

Several features make CLIL a differentiated European construct. Firstly, the fact that the whole approach had a socio-political remit cannot be forgotten. It is true that such a dimension is beyond the construct itself. However, it does underscore the fact that CLIL is an educational approach, not a simple 'methodology'. It was about the construction of a Europe united in diversity, the linguistic and cultural diversity of the different member states, in which the Schengen treaty fostered mobility of students and workers. Secondly, there is the fact that the non-L1 language used as the medium of instruction for curricular subjects is not only generally a different language from that of the learners, but also, and very importantly, from that of the teachers (see Lasagabaster and Sierra 2008). Thirdly and, in contrast to that, the 'culture' of the classroom and the curriculum remains that of the L1. The course-books adopted must follow the national curriculum of each specific member state, hence they cannot easily be imported from the target language country without significant adaptation. These features in particular allow us to draw a very clear line between European CLIL, on the one hand, and international schools, on the other, or schools which follow non-national curricula (Johnson and Swain 1997). Last but not least, the concept of integration has been presented as fundamental in CLIL for primary and secondary education. CLIL is about 'Integration [which] promotes subject or content learning to an equal position to that of foreign language learning' Coyle 2005: 8), as already mentioned above. In teaching terms, what this amounts to is clearly described in the following lines:

> Content teaching needs to guide students' progressive use of the full functional range of language, and to support their understanding of how language form is related to meaning in subject area material. The integration of language, subject area knowledge, and thinking skills requires systematic monitoring and planning. (Swain 1999, in Mohan et al. 2000)

Regarding the social agenda, CLIL is increasingly on the agenda of many families who had pinned their hopes on another main tenet of the European policy vis-à-vis languages, the early introduction of the first additional language in primary school, and had seen it fail as a linguistic policy geared to enhance English language competence. This was very much the case in countries such as Spain (García Mayo and García Lecumberri 2003; Muñoz 2006). The change was quite apparent: around the year 2000 any school that was getting ready to launch a CLIL programme would have had to deal with the parents' concerns, but concern gave way to enthusiasm.

Finally, as regards the educational agenda, poor achievements in foreign language results caused educational authorities to spring into action and to promote the new approach among schools and educators. To take only one example, in the UK, one of the countries with lowest percentages of multilingual speakers, CLIL managed to find a place in high profile reports (the Nuffield Languages Inquiry 2000), policy documents and initiatives such as Science Across the World (Coyle 2005: 9). Much can be said about the means used to such end, and even about political misuse of the approach in bilingual regions of Europe (see, e.g., Cots et al. 2012 dealing with Ireland, the Basque Country and Catalonia). Nonetheless, just as CLIL or ICLHE can motivate learners, they can also motivate both language and content teachers alike, and this has meant that top-down policies have often met with bottom-up enthusiasm and collaboration. Data from teachers and students in a recent study conducted in Austria seems to confirm this view (Hüttner et al. 2013). That is not surprising because, as has been previously argued (Pérez-Vidal 2009), CLIL represents 'the second time around' or a step forward in communicative language teaching (CLT), after the success of the communicative approach in the 1980s (see Canale and Swain 1980; Johnson 1982, on CLT). It was the natural development of CLT which proved flexible enough to encompass changes facilitated by autonomous learning premises (Little 1991), the central role of ICT in education and daily life and, last but not least, the ever increasing internationalisation of the world's economy and its impact on education, a central idea in this chapter which is discussed below. The enormous innovative educational potential of the approach is undeniable. However, a word of warning is necessary here. In as much as the European Commission has promoted multilingualism, it is more often than not difficult to promote competence in a second additional language. Indeed, in contrast with English, which since 2005 90 % of the primary and secondary education school population has learned, whether mandatory or not, German and French are only studied by 30 % of European learners and the figure will only tend to rise if they become mandatory (Eurydice 2008: 75–90). This takes us to the central topic in this chapter, multilingualism, and the status of English in the world in relation to the role of CLIL or ICLHE.

3 CLIL or ICLHE: At the Crossroads

Why should multilingualism need to be promoted? Besides the prominent position of English in education as often the only additional language taught, the fact is that the number of speakers of the 7,000 different languages in the world is clearly unevenly distributed, as there are currently only 200 countries for such a number of languages. Moreover, more than 4,000 of those languages are spoken by less than 2 % of the world's population (Cenoz 2009: 1). Consequently, the aim of educational policies with a multilingual goal is to promote competence in several languages, an indispensable requirement if we want to ensure the well-rounded plurilingual profile which we have stated our young generations need to have these days.

The European strategy towards multilingualism referred to in the previous section is a case in point (for overviews, see Tudor 2008; Fortanet-Gómez 2013). The strategy geared to ensure the 1 + 2 formula (that is knowledge of two additional languages besides the first language(s)) involves a combination of early exposure to a first additional language, both through conventional formal instruction and the additional hours of content and language integrated learning, and a second additional language introduced at the beginning of secondary education (see Pérez-Vidal 2009 for a summary).

Multilingual language competence allows people to communicate and function adequately in different circumstances, most importantly in daily communication and in academic uses (Canale and Swain 1980). Currently, educational institutions following European recommendations can promote communicative competence in several languages by three easily identifiable means: firstly, through CLIL and ICLHE; secondly, through an institutionally organised bilateral group exchange (Comenius or Leonardo schemes in mainstream education, or Erasmus in the EHEA, similarly to the study abroad programmes in the United States and Canada (Kinginger 2009)); thirdly, by using the Internet to link the local learners with learners from a different country, the so-called virtual mobility (see Prieto-Arranz et al. 2013 as an experience in point).

At university level, higher education outside English-speaking countries is adopting English medium instruction. To be exact, courses entirely taught in English have tripled in the last decade, with as many as 2,400 courses running in the non-English speaking member states (see the latest Wächter and Maiworm's 2008 ACA report). This development has been accelerated in Europe through the implementation of the Bologna Declaration, whose impetus may have been the need for harmonisation and transparency of higher education qualifications, irrespective of the language of instruction, these authors stress. EMI, however, has been greatly motivated by the increasingly competitive recruitment process of universities and the mobility policies within the European Union. The upshot has been a move towards English-medium education, perhaps simply as a result of economic factors. That is, European universities are trying to attract fee-paying international students. The trend has become what some call the *lingua franca* trap, as Coleman (2013: 3) reminds us of: 'While the global status of English impels its adoption in HE, the adoption of English in HE further advances its global influence'.

Against such a background, we can clearly state that a fourth new agenda lies behind CLIL and ICLHE through the medium of English, clearly as far as higher education is concerned, its 'market character' as again Coleman (2013: 3) has explained very clearly:

> In countries whose national language(s) are little taught elsewhere, bilateral exchanges are only possible if courses are delivered through an international language, most frequently English. An opportunity to study abroad is at the same time seen as better preparing domestic students for international careers. Regrettably, such student-centred impulses have often now been overtaken by a desire to share in the lucrative European and global markets of university students.

In this respect, and moving to the next point, CLIL and ICLHE together with mobility are striking examples of this new status of English in the world, which has

made it indisputably an international language (EIL). Already non-native speakers of English outnumber native speakers in a ratio of about 5:1 (Crystal 2003: 69); hence its status as a Lingua Franca (ELF) (Crystal 2003; Graddol 2004; Alcón 2007).

The bad news here is what a few critical voices have clearly argued, the fact that this trend is a rather undesirable one for many reasons and particularly for linguistic diversity and multilingualism. Coleman quotes the article by Roy (2004) *Italian lies dying…and the assassin is English!* as an example. The good news is, as already mentioned, that CLIL and ICLHE/EMI teachers are more often than not non-native speakers. They would be classified as belonging either to Kachru's (1992) outer circle (English as a second language) or to the expanding circle (English as a foreign language), not to the inner circle (first language). Consequently, CLIL is clearly groundbreaking and cutting-edge as it has allowed us to move away from the convention of the ideal target in foreign language teaching and learning being that of achieving native-likeness. Instead, within CLIL, competence in a new language entails achieving functional use. This has been happening at a time when language acquisition research was also demystifying such an ideal and promoting models other than the monolingual native model (Cook 2002). Incidentally, this new approach to language learning based on communicative language use with partial competences as acceptable learning targets had also been clearly advocated by the two main instruments issued by the Council of Europe as part of the European multilingual policy and handed over to the educational community, the *Common European Framework of Reference: Language Teaching and Assessment* (2001) and the *European Language Portfolio* described by Little and Perclová (2001). Against such a backdrop, the answer to the main question addressed in this chapter, that is, the specific contribution which CLIL or ICLHE can make to educational programmes, is beginning to take shape.

To be more specific and to tackle the main point, the contribution of CLIL and ICLHE programmes to the promotion of plurilingual and pluricultural competence in education is to offer an invaluable qualitatively new dimension to teaching and learning. Beyond any other possible quantifiable gains, dealt with in the following section, these programmes prepare for internationalisation, which today is a must in education. We would assert that access to internationalisation for all students alike is a democratic right, which for a long time has been reserved to the elite. While agreeing with the critical voices who have made clear the new agenda behind CLIL, that is, the marketization trend of education particularly at its final tertiary level, with the instrumental role CLIL and ICLHE through the medium of English play in attracting 'shares' of that market, we would contend that one should not deprive students from the all-round profile which language knowledge and international experiences grant them for the following reasons:

1. International experiences have an overall positive impact on all learners': (a) motivation and attitudes; (b) capacity to interact face to face or through virtual environments; (c) developing transcultural identities and abilities; (d) linguistic and pragmatic abilities and (e) career prospects.
2. International experiences can take place at home and abroad and must reach all students alike.

Empirical research on the issue of whether CLIL or SA, or each of them separately, enhance an international stance in students (our working hypothesis) is scarce or even non-existent, albeit necessary. We have recently begun to conduct research along these lines within the COLE project (see Moratinos-Johnston et al. 2014), with a qualitative case study in which higher education students' self-perception as multilingual and multicultural speakers and their views of the potential professional benefits of such features are tapped into (see Pérez-Vidal 2014 for a presentation of the project's outcomes). The subjects declare that CLIL experiences made them feel at ease when they went abroad. They also attached great importance to their multilingual profiles in an evermore competitive labour market (Moratinos-Johnston et al. 2014). This is a view which Coyle (2005: 8) vividly reported through a quote from a 15-year-old Catalan learner in Barcelona:

> I want to study English because if I don't study English in the future I won't have a job […] Chemistry in English for the future is more important.

The question at this point is: what is the real impact of SA and CLIL programmes? CLIL seems not to be widespread across European educational systems. Belgium (in German), Malta and Luxembourg have it across educational systems. Italy has had one subject in upper-secondary since 2010, and in Austria the first foreign language is taught through CLIL from 6 to 8 years, similarly to Liechtenstein. In the rest of European countries, as the Eurydice report states (2008), pilot projects abound. English-taught programmes (ETP) at Bachelor and Master 'are a very young […] and still not a mass phenomenon', with 2 % of the total 40 million HE student population participating in them (Wächter and Maiworm 2008: 10). As for mobility in the EHEA, the vast majority of countries have values of less than 5 % for incoming degree mobility rate, below 2 % for outgoing and below 1 % for outgoing outside Europe. South and Eastern countries tend to have more outgoing students, while North and Western countries have more incoming students. The current projection of short-term trends in the framework of the Erasmus programme anticipates a 7 % of mobility by 2020, far from the 20 % benchmark set at the Louven/Louvain-La-Neuve Communiqué (European Commission 2012). All in all, however, globally 2.12 million students were studying abroad in 2003, and the figure is set to rise to 7.2 million by 2025 (Coleman 2013: 10). Hence, with these low figures, it is clear that there is a key role to be played by CLIL and EMI as instances of 'internationalisation at home'. However, taking into account the relatively low current figures for CLIL and SA programmes in Europe, it is also quite obvious that they cater only for a very small portion of the student population. Hence, in our opinion the worry that the expansion of English-medium CLIL programmes and mobility experiences is going to revolutionise the face of education seems not to have much basis, whereas the concern for the status of English and the limited place it leaves for other languages seems to be well founded.

In brief, if it may be assumed that CLIL programmes followed at home help learners develop and change, in combination with formal instruction, then the experience of actually 'living' in the country where additional languages to one's

own are spoken, and used academically, should do so to an even larger extent. However, this option is available to a small number of students. The question we shall now turn to is whether the expectations generated by these programmes hold true, and for all learners alike. Those for whom the experience is by and large extremely positive abound, as the following quote illustrates:

> It's now my last week in England, […] and I'll have to go back and get used again to my other life. It's also my life, and I like it, and I want to see my friends and family. But I would definitely come back. Three months is not enough. Three months is nothing. My English has improved so much since I came here that I think that it is a waste to leave now. One year would be perfect! […] I didn't think it was going to be like that, but I'm really happy about everything I've seen, done, lived, enjoyed, here. I can say, without a doubt, that these three months in Leeds have been the best thing I've ever done. I wouldn't ever change this experience!
>
> (Student in Leeds (UK), COLE Study Abroad Diary Corpus)

4 CLIL or ICLHE and SA Programmes Characterised

From the perspective of language acquisition and cultural development, what happens when learners find themselves experiencing learning contexts such as CLIL, ICLHE or SA is that they can in principle find the best conditions for their target language to develop and their identities, attitudes, motivation and beliefs concerning languages and cultures to change for the best. The following two sections include a description of these learning contexts and a summary of their impact on learners' profiles.

4.1 Context Features

What are the conditions learners find in language learning contexts which are different from the FI conventional classrooms they have experienced for years at school? CLIL programmes have been characterised by Dalton-Puffer (2007: 2) as follows:

> A common denominator for CLIL is that a non-L1 is used for classes other than those labelled as 'language classes' […] from kindergarten to tertiary level, and the extent of its use may range from occasional foreign language tests in individual subjects to covering the whole curriculum.

This is in fact what Llinares et al. (2013) call the 'weak' and the 'strong' version of CLIL, respectively, drawing on Baker (1996: 216). SA in turn is well depicted in the following quote by Howard (2005: 496):

> The instructed learner [at home] assumes the role of the naturalistic learner during a period of residence in the target language community […] while often simultaneously following language or content courses, carrying out several leisure and social activities and even working.

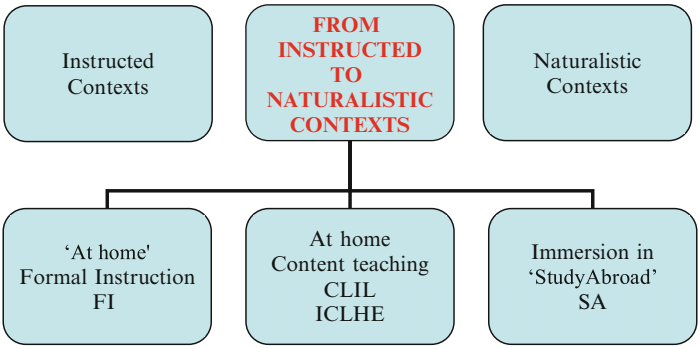

Fig. 1 Three main contexts of Acquisition

The changes in learner identity which take place while abroad and in CLIL or ICLHE classrooms are a central feature of the new dimension these programmes bring into the classroom. Indeed, robust CLIL programmes may be claimed to stretch learners' use of languages making them act as language users rather than language novices in the classroom (Dalton-Puffer 2007) and, accordingly, may lead them to develop new identities as multilingual speakers. Similarly, SA programmes offer learners a naturalistic environment in which they often seek to carry a 'local speaker's badge', as Regan (1995) vividly suggested.

Regarding the nature of SA and CLIL as naturalistic settings, if we represent language learning contexts along a continuum having formal conditions at the left end of the axis and naturalistic conditions at the right end, as shown in Fig. 1, CLIL and SA do have in common the fact that they are both placed towards the naturalistic end of the continuum (Pérez-Vidal 2011; taken up in Juan-Garau 2012), with CLIL standing half-way in between and SA right at the end, as communication in CLIL lessons only takes place within the four walls of a classroom.

Naturalistic conditions for language learning, according to initial second language acquisition theories such as Krashen's Input Hypothesis (1985), involve massive opportunities for high quality input, a requisite for linguistic development to occur. Subsequently interactional views of language learning (Long 1996; Gass 1997) have established the need for negotiation of meaning in communicative breakdowns, a type of implicit feedback which learners should avail themselves of for their linguistic development, either in the form of positive or negative evidence.[1] Finally, attention and noticing also play a role (Schmidt 1990, 2001) in order to push learners' uptake, that is, how learners process the feedback they receive (Ellis 2001). Both CLIL and SA allow for such processes to take place to different degrees.

[1] Positive evidence has been defined by Gass (1997: 36) as 'the set of well-formed sentences to which learners are exposed' which allow them to gather data about possible and acceptable utterances. That is the sort of evidence which Krashen (1985) thought both necessary and sufficient for language acquisition to take place. Negative evidence offers cues about what is not acceptable in learners' output and pushes learners to reformulate utterances according to their own linguistic resources (Canale and Swain 1980).

CLIL contexts allow for practice which is meaning-oriented, while SA contexts offer out-of-class practice in multiple situations, with different speakers, within a variety of contexts and degrees of formality (Kasper and Rose 2002; Van Patten 2003). However, both programmes afford practice focused on meaning. This is in contrast with FI, in which communication tends to focus on form as the most common sort of practice, unless very committed communicative approaches to language teaching are adopted (Doughty and Williams 1998; Doughty 2006). In sum, in naturalistic language learning conditions such as those found in content-oriented CLIL lessons, and even more so in SA, learners should eventually manage to experience 'learning as [an] automatic reflex characterized by lack of control and even absence of awareness, a view associated with implicit learning and use' (Sanz 2014).

More recently, the CLIL and SA contexts of learning have also been viewed as providing complementary opportunities for meaningful practice, due to the differences regarding the skills most practiced in each context. Pérez-Vidal (2011) has suggested in the *Combination of contexts* hypothesis that different benefits might accrue in each context and in combination might in turn push learners to subsequent competence levels: 'Firstly an upper intermediate level of competence in the target language acquired through formal instruction is ideal for CLIL approaches to education to be beneficial in receptive skills competence, particularly reading, general fluency, vocabulary, and self-regulatory abilities. Secondly, after experiencing FI and CLIL, a SA period in the target language country would prove most fruitful for the improvement of productive skills, particularly oral, and socio-pragmatic abilities, especially a SA residence period of an adequate length, a minimum of 6 weeks' (Pérez-Vidal 2011: 117–118). In the next section, evidence from empirical research regarding differential contextual gains is presented.

4.2 Context Effects

From the point of view of language acquisition research, few contexts are as rich and complex as SA, and CLIL programmes are perhaps the other unconventional acquisition context with similar characteristics. The Study Abroad and Language Acquisition (SALA) (see Pérez-Vidal 2014 for a full account) and the Combination of Contexts for Learning (COLE) research projects have encompassed the analysis of both contexts in contrast with FI. The second part of this volume is precisely devoted to a thorough presentation of the results of the COLE project and their discussion against the background of the existing research on the effects of CLIL programmes on adolescent EFL learners' linguistic development.[2]

[2] The author of this paper has been the principal investigator of the Universitat Pompeu Fabra and Universitat de les Illes Balears coordinated projects, SALA (2004–2007), COLE (2007–2010), both funded by the Spanish Ministry of Education and Science, and C03 (2010–2013), funded by the Spanish Ministry of Economy and Competitiveness (see for more information www.upf.edu/dtcl/recerca/allencam).

Interest in studying the effects of stays abroad had an initial impetus around the 1990s (see Freed 1995), with most publications issued in the United States and work coming from Europe only later on (Coleman 1998). Such impetus was regained in the early 2000s when several key volumes and journal monographs were issued (Collentine and Freed 2004; DuFon and Churchill 2006; DeKeyser 2007; Kinginger 2009). Research has also taken care of methodological shortcomings in current studies (see Rees and Klapper 2008; DeKeyser 2014).

The following brief overview offers a selection of studies showing benefits on linguistic abilities as a result of a SA period spent in the target language country, often measured in comparison with FI. The greatest progress is reportedly obtained during SA in the domain of oral production, particularly in the areas of fluency, lexicon and pragmatics (Milton and Meara 1995; Freed et al. 2004; DuFon and Churchill 2006; Trenchs 2009; Mora and Valls-Ferrer 2012; Juan-Garau 2014). Receptive skills also show significant improvement as far as listening goes (Kinginger 2009). Recent research on writing with European samples of students shows significant improvement in the domains of fluency, complexity and accuracy (Sasaki 2007, 2011; Pérez-Vidal and Juan-Garau 2011; Serrano et al. 2011; Barquin et al. submitted). The fact that findings are also rather mixed, clearly in reading (Dewey, in Collentine and Freed 2004), grammatical accuracy (DeKeyser 1991, but see Juan-Garau 2014) and pronunciation and phonetic ability (Diaz-Campos 2004; Mora 2008; Avello et al. 2013) has been acknowledged in most of the state of the art accounts to date such as Collentine (2009) or DeKeyser (2007). As this author has stressed (DeKeyser 2014):

> In spite of the almost magical image of a stay abroad as the one and only way to achieve high levels of proficiency according to some, or at least a dramatic accelerator of linguistic development, the available research paints a much more nuanced picture. […] the main determinant of success, besides perhaps aptitude, is the students' learning behaviour, which in turn is influenced by a variety of factors, including their preparation.

Studies comparing immersion abroad with immersion at home (DeKeyser 1990; Freed et al. 2004) find that students having spent greater time doing academic work at home would outperform those on SA. As for learners' self-regulatory ability, it is directly related to the degree of contact they have with native speakers (Dörnyei 2005). Collentine and Freed's (2004) seminal *Studies on Language Acquisition* monographic issue concludes and explains that it is not the context *per se* but the type and intensity of contact that the learners establish with the target language that condition the benefits they gain from an 'at home' immersion programme, in contrast with a SA period. The quantity and quality of contact with target language speakers is undoubtedly dependent on three elements: (a) the ability students show to benefit from the opportunities at hand; (b) their intercultural sensitivity (Paige et al. 2004) and (c) their ability to establish and maintain social networks (Mitchell et al. 2013). Regarding the architecture of programmes, age of onset has been recently analysed in two studies, which show that progress accrues at different ages and in programmes of different length (Llanes and Muñoz 2009, 2013; Avello and Lara 2014, on length of stay).

Regarding research on the effects of CLIL and ICLHE programmes, although altogether a recent subfield of enquiry, it has already accumulated a consistent set of empirical findings. To take but one example, Spain, a member state of the European Union which on the Eurydice (2012) report does not even appear quoted as having a systematic policy vis-à-vis CLIL, has produced over half a decade literature that includes around 15 books in addition to doctoral PhDs and journal articles on the matter (e.g., Lorenzo et al. 2007; Cenoz 2009; Dafouz and Guerrini 2009; Ruiz de Zarobe and Jiménez Catalán 2009; Salazar-Noguera and Juan-Garau 2009; Villareal and García Mayo 2009; Lasagabaster and Ruiz de Zarobe 2010; Escobar Urmeneta et al. 2011; Ruiz de Zarobe et al. 2011; Alcón and Michavila 2012; Abello-Contesse et al. 2013; Fortanet-Gómez 2013; Llinares et al. 2013). This does indeed provide evidence of the social interest of the phenomenon, as was emphasised in the first section of this chapter.

Research on CLIL encompasses issues to do not only with language acquisition and content learning but also with the dimensions of teaching practices, not present in the SA literature. At the higher education level, Smit and Dafouz (2013: 7) identify three areas of research: classroom discourse, teachers' roles and English-medium policy documents. Research has not been free of methodological pitfalls similar to those of the analysis of SA: control groups are not easy to establish; the group that is analysed often includes the best students; valid instruments for data collection are scarce; and the many CLIL experiences are experimental and therefore not generalisable (Moore 2009: 121–122). As other chapters in the book focus on an overview of empirical studies (see Ruiz de Zarobe 2015), a summary of benefits is provided here. Most studies seem to show that CLIL learners improve faster than learners in FI contexts (Dalton-Puffer 2007; Lasagabaster 2008; Moore 2009; Hellekjaer 2010; Escobar Urmeneta et al. 2011, to name but a few). A well-designed programme, like that of the Andalusia autonomous community in Spain, shows improvement in the four skills in 10- and 12-year-old learners in the two contexts (Lorenzo et al. 2010). However, just as with SA research, there is a proportion of studies which show clearly the opposite, this is the case of Sweden, for example, where, according to Sylvén (2013), CLIL 'does not work'. Based on the positive evidence, Dalton-Puffer (2007: 5) clarifies that for now we know that the receptive skills, vocabulary, morphology, fluency and emotional dimension of learners seem to improve. However, their syntax, writing, informal language, pronunciation and pragmatics do not. In brief, if we try and match benefits from one context and another, it becomes evident that informal language and pragmatics seem to require a SA context to make significant progress, as they do not seem to do so in CLIL contexts. However, both areas of research, and particularly CLIL, need further systematic empirical work, addressing the methodological issues identified to date. All in all, the main tenet in this chapter concerning the international dimension of these two contexts of acquisition may suffice to satisfy us while robust quantitative research findings accumulate.

Conclusions

In this chapter, we have underlined the different roles played by content and language integrated approaches to education in Europe and their contribution to the promotion of multilingualism. As innovative approaches they seem to be instrumental in motivating teachers and learners, demystifying native-likeness as the objective in language learning, improving language skills at certain levels and intercultural learning. In contrast to that, research also shows that not all programmes are alike and work so efficiently.

Most importantly, such innovative programmes have a specific role to play in promoting internationalisation. On the one hand, they represent international experiences in themselves or prepare for mobility. They become scenarios in which lessons are transformed into a novel further-reaching learning experience for mainstream and university students. Indeed, at all educational levels curricular programmes taught through the medium of English, French, German, Spanish or any other language different from the learners' language(s) may place learners in an international mindset. On the other, they may also serve the practical purpose of accommodating incoming students on mobility programmes, thus allowing for a 'share' of the existing HE market. Not only that, CLIL and ICLHE lessons may also serve as a fitting preparation for the local students' future mobility experiences, as they mirror the kind of classroom setting which they will encounter when they themselves enrol on a SA exchange. It is not surprising that the European recommendations made to the member states for the past three decades vis-à-vis languages, within the general strategy towards multilingualism, have promoted both CLIL programmes and mobility and residence abroad for European young, and not so young, learners as the main strands in their policies. Their goal is the democratisation of access to knowledge and mobility through different languages, a right which no citizen should be deprived of.

What the multilingual strategy did not initially set out to promote was the overriding role which English has taken in education, as a consequence of its new status in the internationalisation of market forces globally. Moreover, the well-known motto *United in Diversity* reflected a vision in which European citizens would have more than one additional language. To that end the strategy summoned a group of intellectuals led by the writer Amin Mahlouf to discuss how languages different from English might be promoted (European Commission 2008).

It is true that both the weight taken by English and the difficulties in promoting the second additional language stand as a serious threat to the effective implementation of multilingual policies. However, we have asserted in this chapter that such problems along the way must not blur the vision we share: languages for all and internationalisation for all.

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The Effects of Implementing CLIL in Education

Yolanda Ruiz de Zarobe

1 Introduction

Over the last decades, Content and Language Integrated Learning (CLIL) programmes have developed greatly in helping students gain strong skills and proficiency in the second or foreign language. This involves the use of the foreign language in the teaching of non-linguistic subjects, which implies integrating both content and language in the curriculum (Coyle et al. 2010), providing favourable conditions for such teaching.

However, even if CLIL has been implemented in recent decades as a pedagogic tool in a variety of forms in the curriculum, teaching subject matter through a foreign language is nothing new: different bilingual communities and educational institutions have had a long tradition of teaching content through the second language in their curricula. We are talking about not only Canadian immersion programmes, with the positive results obtained in relation to linguistic, subject content and attitudinal perspectives (Lambert and Tucker 1972; Lyster 1987; Wesche 2001), but also European bilingual programmes: "For example, the bilingual/partial immersion program aimed at Spanish L1 students in the Basque Autonomous Community in Spain (model B) has several subjects of the school curriculum taught through the medium of Basque, the L2. This program has existed for over 30 years and has been systematically evaluated for outcomes in the L1, L2 and content subjects" (Cenoz 2013: 391).

As the different European Commission reports have attested (Eurydice 2006; Eurydice Network 2012), the CLIL approach is being implemented in most European countries, with contextual differences such as "policy framework, teacher

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education, age of implementation and extramural exposure to the target language" (Sylven 2013: 301), to mention just but a few. This diversity in the educational approach, which is frequently addressed as multidimensional (Coyle et al. 2010), presents different fields of reflection and development. This is shown by the proliferation of articles and books published on the international scene in very recent years, which have tried to shed light on different areas of CLIL. The aim of this chapter is to review some of the evidence provided by applied linguistics research in order to analyse the strengths and the weaknesses of an approach that seems to have come to education to stay.[1]

2 CLIL Research Outcomes: Content and Language Learning

The duality of CLIL as an educational approach to improve second[2] language competence implies that most research in CLIL has been carried out by linguists and practitioners (Dafouz and Guerrini 2009; Ruiz de Zarobe and Jiménez Catalán 2009; Dalton-Puffer et al. 2010a; Ruiz de Zarobe et al. 2011, among others), who have focused on the evaluation of learning outcomes. In this section, we will describe some of the research that has been conducted and its effects on content subject learning and on foreign language competence.

Before starting with a description of some of the learning outcomes, a few points should be taken into consideration:

(a) In much of the research presented, CLIL classrooms are compared with more traditional foreign language courses. The CLIL strand usually involves both content learning through the foreign language and traditional foreign language courses, which means that the number of hours of instruction is in the majority of cases higher in the CLIL stream, compared to the non-CLIL context. Some research (Ruiz de Zarobe 2010, for instance) has tried to eliminate this variable by comparing CLIL and non-CLIL groups with different ages but with a similar amount of instruction.
(b) In some of the research described, the CLIL groups are self-selected, and they may somehow include more "talented" and motivated students than in regular foreign language classrooms.

[1] The number of articles and books on CLIL has proliferated in recent years. One of the latest publications is the Special Issue of the International Journal of Bilingual Education and Bilingualism, on *Content and Language Integrated Learning: Language Policy and Pedagogical Practice,* 2013, edited by Ruiz de Zarobe, which has partly offered the background for some of the pedagogical outcomes of CLIL presented here.

This chapter further offers a review of previous research on content and language learning outcomes, following the Second International Conference on Foreign Language Teaching and Applied Linguistics, advanced at the International Burch University in Bosnia-Herzegovina (Sarajevo) in 2012.

[2] We use the phrase "second language" as a generic term, without making a distinction between second and foreign languages.

(c) The instruments used to measure language competence are in most cases quantitative, although with notable exceptions (Airey 2009, among others). Qualitative research is more frequently found in classroom practice outcomes.
(d) In some studies, there is a lack of initial matching of cohorts (as pointed out by, for instance, Admiraal et al. 2006, among others).
(e) Pilot studies in CLIL classrooms cannot always be extrapolated to mainstream education.

Although these and other factors must be taken into account when canvassing the research, an overview of the studies will provide the necessary background for an analysis of the approach.

2.1 Subject Content Learning

First, we will start with subject content learning. Content learning is one of the learning dimensions which seem to have brought more doubts about the approach despite the positive results obtained in other contexts, such as Canadian immersion programmes, as mentioned above. The research undertaken in relation to the content dimension of CLIL has provided some contradictory results, depending on the educational and geographical context under study.

Positive results are presented by the studies carried out in the Basque Autonomous Community in Spain, a bilingual community in which both Basque and Spanish are official languages. These studies have been undertaken both by the Basque Institute for Evaluation and Research in Education, which belongs to the Department of Education of the Basque Government, and by the *Ikastolen Elkartea*, a network of private schools in which Basque is the means of instruction.

The Basque Institute for Evaluation and Research in Education carried out a longitudinal study in secondary education in what was called the *Plurilingual Experience* during the years 2004 and 2006 (Grisaleña et al. 2009). Among other outcomes, the results, based mainly on qualitative data gathered through interviews, questionnaires and teachers' blogs, indicated that the level obtained in the content subjects taught through English was similar to that of the control group, who had learned in their usual language of instruction, Spanish or Basque. Learning the content in the foreign language did not have any negative effects on the eventual knowledge of the content subject.

These positive results gave partly rise to what is called the *Trilingual Education Framework*, implemented in the three provinces of the Basque Country since 2010–2011. The Basque Government has introduced this *Trilingual Education Framework* in a number of schools of the Basque Autonomous Community in the fourth year of primary education (9–10 years) and the first year of secondary education (12–13 years), both in public and private schools of the community. According to this *Trilingual Education Framework*, 20 % of the teaching load must be undertaken in each of the three languages (Spanish, Basque and the foreign language, in most cases English). The remaining 40 % of the curriculum can be designed by each educational centre according to the specific needs of the school.

Similar positive results in subject matter outcomes were obtained in the *Ikastolen Elkartea* (network of private schools), in two different periods: 2002 (an experimental phase) and 2010 (a general phase), which further demonstrated that the teaching of social sciences through English did not prevent students from successfully learning the same amount of subject content as those studying in Basque, with no negative effects for the acquisition of Basque. Furthermore, the experimental cohort was capable of explaining in Basque the contents they had learnt in the foreign language (see Ruiz de Zarobe and Lasagabaster 2010), demonstrating a positive transfer of content learning from English into Basque.

The latest report (2010), apart from confirming how learning subject content in the foreign language had no negative effects on either content learning or Basque, also proved that the differences between the experimental and the control cohorts diminished in relation to those found in 2002, partly due to the development of materials in English and to teacher training courses.

In relation to the first point, materials development, Ball and Lindsay (2010: 173–174) confirm that "the integrated curriculum has been implemented through the didactic materials created by the Ikastola network for all levels of compulsory schooling and for all the four languages implicated. These didactic materials become the main tool with which to train teachers […] The opportunity for writers to witness teachers pilot the materials first-hand then feed back to them on the experience is a privilege that should become more widespread practice".

In these studies, similarly to other European research (Admiraal et al. 2006; Lorenzo et al. 2010, among others), motivational factors behind CLIL classrooms may have had an influence on the outcomes, as motivated teachers and, therefore, motivated students were able to produce better results in this curriculum innovation process. Furthermore, it is also evident that in this, as in any other context, "the great challenge that such a model of multilingual education poses for our school system can only be met by devising a language policy that carefully considers all the possible communicative fields in the school environment and combines the efforts of the school community as a whole" (Elorza and Muñoa 2008: 99).

The positive results on content learning have been corroborated by other studies mainly in Europe, although sometimes with questions raised when presenting the results. In Finland, Jäppinen (2006) found that CLIL environments were successful in offering the learners favourable conditions for content-learning. However, on a more general level no statistically significant differences emerged between the CLIL and non-CLIL groups (aged between 7 and 15). The youngest CLIL group obtained slightly negative results (they encountered difficulties with very abstract topics), the middle group obtained weak positive results, and no effects were encountered in those students between 13 and 15 years of age: "In summary, learning in CLIL environments proved to be initially more demanding than in environments where the mother tongue is the medium of learning. However, over time CLIL learners seemed to attain the necessary learning abilities. A demanding and language-enriched learning environment seemed to have a positive effect on the mainstream CLIL learners' thinking and content learning" (Jäppinen 2006: 25).

Similar results were obtained in Germany (Vollmer et al. 2006), where CLIL learners reached higher levels of tolerance of frustration and higher communicative competence which lead to a more intensified mental construction activity, although both cohorts (CLIL learners learning geography in Germany through CLIL, and those learning through their first language (L1), German) showed problems in academic literacy and academic language. Neither were differences in subject matter outcomes found in the longitudinal survey carried out by Admiraal et al. (2006) in the Netherlands in the students' school leaving exams at the end of secondary education for Dutch, although some content subjects, history and geography, had been taught through English.

In Switzerland, Stohler's (2006) empirical study examined several schools in which German or French were used as a foreign language. The author found out that no significant differences existed in the acquisition of knowledge when pupils were taught in their first language or when they were taught through the foreign language. However, it was also found that students sometimes resorted to their mother tongue in order to demonstrate they had acquired the conceptual knowledge, corroborating other studies in the field (Tarone and Swain 1995; Coonan 2007), which show how students switch to their mother tongue whenever they have difficulty with the foreign language.

Despite the positive results presented above, some research carried out in Europe has shown contradicting results. Seikkula-Leino's (2007) study in a comprehensive school in Finland showed that there were no statistically significant differences between the students who were taught mathematics through their mother tongue or those who were taught in the foreign language. However, the results also indicated that pupils who are taught in their native language tend to overachieve those in CLIL contexts; that is, there were more overachievers among the pupils taught in Finnish, their mother tongue, than among the CLIL pupils. By contrast, the CLIL students were also shown to be more highly motivated than the non-CLIL counterparts.

Several studies carried out in Norway and Sweden have also presented some problems related to the teaching of content through the foreign language. Hellekjaer's (2010) study was carried out in tertiary education and compared lecture comprehension in English and the first language, Norwegian. The results demonstrated that the difference between English and L1 scores was not substantial, but a considerable number of students had problems understanding the English-medium lectures. The main difficulties were related to the meaning of words, unfamiliar vocabulary and note-taking. In Sweden, several studies (Airey and Linder 2006; Airey 2009) also showed difficulties related to taking notes while listening to lectures and problems in the description of curricular concepts in the foreign language.

Other studies outside Europe have also presented negative effects, notably in Asian contexts (Marsh et al. 2000). These studies, undertaken mainly in Hong Kong, compared students following a programme in English as a medium of instruction and those following a Chinese programme, the L1 of the students. These findings showed detrimental effects on content learning, despite the fact that English is considered a prestigious language. One of the main reasons behind these results

may be the inadequate competence of English teachers, who might in some cases have had a low level of English.

Although the research in relation to content learning is not altogether conclusive, most of the studies presented above show that, despite the fact that these subjects are taught through a foreign language, which very often is not the L1 of the teachers, and with little command on the part of the students, they still manage to attain similar results in content learning to those students learning in their L1. Thus, as Dalton-Puffer (2011: 189) points out: "How is it possible that learners can produce equally good results even if they studied the content in an imperfectly known language?" We can partly find the answer in Coonan's (2007: 643) words: "CLIL affects the way the students learn the content because of the added extra cognitive burden represented by the presence of the L2; it affects (positively) the way students learn the content because of the greater care the teachers seem to take to help them overcome the hurdles; it affects the way they learn the content (positively) because care is taken to nurture language growth through the content and the L1 is used as an instrument if needed to overcome learning difficulties". In sum, methodological didactic aspects of the CLIL approach will have a say on the outcomes. In the next section, we will go back to these issues in more detail.

2.2 Language Learning

Our next step now will be to look at foreign language outcomes in the different competencies analysed. After looking at new evidence in the field, a tentative revision was already presented in Ruiz de Zarobe (2011) based on the dichotomy introduced in Dalton-Puffer (2008), with clear gains observed in the following areas:

- Reading
- Listening?[3]
- Receptive vocabulary
- Speaking (fluency, risk-taking associated with low affective filter)
- Writing (fluency and lexical and syntactic complexity)
- Some morphological phenomena
- Emotive/affective outcomes

And areas which are not favourably affected by CLIL or where results are inconclusive:

- Syntax?
- Productive vocabulary
- Informal/non-technical language

[3] Question marks were used in those skills with contradictory results, where no clear conclusions could be drawn. Further research will still help us define in more detail the role of the approach in relation to those skills.

- Writing (accuracy,[4] discourse skills)
- Pronunciation (degree of foreign accent)
- Pragmatics

Contrary to research on other educational approaches, notably Canadian immersion programmes where there was a clear mismatch between receptive and productive skills outcomes (near-native-like competence in receptive skills and problematic areas in productive skills on the part of Anglophone learners of French), the dichotomy between both skills seems to present different results in CLIL.

In relation to receptive skills, although it is true that some of the research on reading skills (Admiraal et al. 2006; Jiménez Catalán et al. 2006; Navés 2011) shows positive results in reading comprehension, those results do not always seem to be corroborated in the case of listening skills. First of all, we can mention the research undertaken in Scandinavian contexts referred to above (Airey and Linder 2006; Airey 2009; Hellekjaer 2010), which compared lecture comprehension in English and in the L1 (Swedish or Norwegian) in tertiary education. In the case of Sweden, Airey (2009) found that a large number of students had comprehension difficulties in the English-medium lectures. Students were also less willing to ask and answer questions in English, reducing teacher-student interaction. Furthermore, when they took notes in their first language they were better able to simultaneously follow the thread of that lecture than they were when taking notes in a lecture in the L2. Thus, the mechanics of taking notes in the L2 may also have to do with the results, as pointed out by Hellekjaer (2010).

Nevertheless, in order to compensate for these limitations, the students also developed other strategies in English-medium classes:

> Students employed a number of strategies to address these experienced differences by asking questions after the lecture, changing their study habits so that they no longer took notes in class, reading sections of work before class or—in the worst case—by simply using the lecture for mechanical note-taking and then (perhaps?) putting in more work to make sense of these notes later. (Airey 2009: 82)

Further evidence of the limitations in listening skills is provided by Navés (2011) and Pérez-Vidal and Roquet (2015) in the Catalonian context. Navés found that listening comprehension (and accuracy in the writing domain) was the only skill where no differences existed between CLIL and non-CLIL learners. In all other skills, CLIL learners matched or outperformed learners 2 or 3 years ahead of them. Pérez-Vidal and Roquet, in a longitudinal study on productive and comprehension skills, demonstrate how the CLIL group significantly improves their reading competence over the non-CLIL groups, but not their listening competence.

Other research (Lasagabaster 2008; Prieto-Arranz et al. 2015) has offered more promising results in listening comprehension, showing a positive effect of the approach. However, there is still little research on receptive skills so further studies will help us reach more definite conclusions.

[4] New evidence (Jexenflicker and Dalton-Puffer 2010, among others) has offered positive outcomes on accuracy in writing as well.

Research on productive skills has offered more definite results, providing support for the positive effects of CLIL in both dimensions: writing and speaking. In relation to writing ability, these positive results relate more to overall general competence and factors such as fluency and lexical and syntactic complexity (Järvinen 2010; Navés and Victori 2010; Ruiz de Zarobe 2010; Gené-Gil et al. 2015; Pérez-Vidal and Roquet 2015), while problems prevail both in textual competence and academic literacy (Vollmer et al. 2006; Jexenflicker and Dalton-Puffer 2010). These problems encountered in CLIL (and in L1 classrooms) are "due to the widespread absence of writing in content lessons and the ensuing lack of experience with this kind of activity on the part of the students. This absence of writing is an element in the culture of subject-didactics which Austria and Germany seem to share" (Jexenflicker and Dalton-Puffer 2010: 183). This implies an effect of classroom pedagogies and didactics on writing, a situation which is most probably an issue everywhere else as well (see, however, some positive results in this domain of writing competence in Whittaker and Llinares 2009; Llinares and Whittaker 2010).

Moving on to oral production, it is often stated that the class is basically communicative in CLIL settings because the target language is used as the medium of instruction to learn content. Research on CLIL suggests advantages in productive skills for the CLIL streams (Admiraal et al. 2006; Lasagabaster 2008; Ruiz de Zarobe 2008; Hüttner and Rieder-Bünemann 2010), where students have been attested to be more communicative and self-confident (Dalton-Puffer et al. 2009). However, results are not so definite in pronunciation. Little research has been done in that domain of language, but the research undertaken (Gallardo et al. 2009, but see Rallo Fabra and Juan-Garau 2011; Rallo Fabra and Jacob 2015 for different results) indicates that CLIL students, compared to their non-CLIL counterparts, have a more intelligible and less irritating accent, but no statistically significant differences are encountered in the degree of foreign accent (FA). The authors claim that CLIL "may be a more favourable environment for the development of more intelligible and less irritating speech, and probably, a less strong FA if classroom phonological input is sufficiently authentic" (Gallardo et al. 2009: 75).

Another linguistic domain where inconclusive results have been provided is the field of morphosyntax (Ackerl 2007; Hüttner and Rieder-Bünemann 2007; Martínez Adrián and Gutierrez Mangado 2009; Villarreal and García Mayo 2009). These studies show how some aspects may be positively affected (affixal morphemes or the incidence of placeholders) by the approach, while no differences are found in other morphosyntactic components (use of some tenses, null subjects, negation, suppletive forms). It may be the case that CLIL contexts and methodologies are more adequate for other competencies to evolve, while the acquisition of more discreet components need more time to emerge, if they ever do so in a consistent way. Further research will provide more insights in the field.

Vocabulary deserves special attention in CLIL: most of the studies show that CLIL settings offer favourable conditions to acquire vocabulary, either explicitly or implicitly, although those gains are more significant in receptive than in productive skills (Jiménez Catalán and Ruiz de Zarobe 2009; Moreno Espinosa 2009). CLIL students also outperform non-CLIL in lexical richness and sophistication,

producing a higher number of lexical inventions, which imply a higher reliance on L2 rules and a less direct use of the L1, while their peers produce more direct borrowings from their first language, displaying a poorer command of L2 vocabulary (Agustín Llach 2009; Celaya and Ruiz de Zarobe 2010).

Results in pragmatics are also inconclusive, partly because it is a field where research on learning outcomes has been scarce; most studies carried out in this area have focused on classroom discourse (Dalton-Puffer and Nikula, 2006; Llinares and Pastrana, 2012; Nikula, 2008). However, new studies are starting to analyse inter-language pragmatics in CLIL and non-CLIL contexts. For instance, Nashaat-Sobhy (2014) studies the use of request modifiers and request strategies in both contexts: CLIL and non-CLIL. Her results show that the gains in the use of requests are not necessarily a direct effect of any programme, but could also be attributed to the accumulative exposure to English over time. Other factors such as motivation and maturation are also considered. More evidence will help us shed light on this interesting line of research.

Finally, a note should be made on an emerging field of research, which has received little attention to date but where important insights are being obtained: that is the field of learning strategies and strategic instruction in CLIL, where research is scarce, even though learning strategies are a fundamental part of the process to make students more aware of how they learn and how they can learn more efficiently and autonomously, one of the tenets of the CLIL approach. Tentative results indicate that those students who are trained strategically in CLIL classrooms, notably in reading comprehension, seem to have greater metacognitive awareness, which helps them select appropriate strategies for specific reading tasks and thus provides them with better results (Chamot 2001; Ruiz de Zarobe and Zenotz 2012a, b; Ruiz de Zarobe and Zenotz forthcoming 2015).

The research presented above provides evidence on both content and language learning in this dual-focused approach. As can be expected, some competencies and skills seem to benefit more directly from the approach, while others just lag behind. In relation to content, contradictory results have been presented, which may stem from differentiating factors which include such aspects as educational levels, methodological issues or geographical considerations. Nevertheless, what seems to emerge throughout this research is the influence of classroom pedagogies in the outcomes. In the next section, we will analyse some of the results regarding pedagogical practice and classroom interaction.

3 CLIL Classroom Outcomes

Pedagogical practice is an important field of research in CLIL, as this approach focuses mainly on the classroom as an appropriate setting for improvement. “If you want to improve the **quality** of learning, the most effective place to do so is in the context of a **classroom** lesson […] The challenge now becomes that of identifying the kinds of changes that will improve learning for all students […] of sharing

this knowledge with other teachers" (Stigler and Hibbert 1999: 111, as cited in Coyle 2011a: 26).

As might be expected, the research undertaken in the classroom has sometimes offered diverging results in its different dimensions as a multifaceted approach, which has often called for more qualitative than quantitative research. These divergences are often related to the extra cognitive burden of learning in a foreign language, which may hinder language learning as a whole. Some researchers state that sometimes the need to communicate in another language may cause a negative challenge for the learners (Gardner 2010). However, other research (Nikula 2007; Maillat 2010) claims that language anxiety to communicate in a foreign language can be lowered in this type of contexts. Using a discourse-pragmatic perspective, Nikula (2007: 221) shows how CLIL students use the foreign language with confidence as a resource in classroom settings and off-record classroom activities: "CLIL classroom could well serve as an arena for students to put their skills into practice and act as active participants in classroom interactions. Moreover, the findings give reason to believe that when there is no explicit focus on students' language skills they seem to use English quite willingly".

Given the specific conditions that CLIL imposes on learners in spoken production, Maillat (2010: 55) mentions a pragmatic strategy, "the mask effect", which functions as a "pragmatic inhibitor that allows the L2 learner to concentrate all her cognitive resources on the communicative task at hand and to overcome the L2 bottleneck". This effect releases the constraints that the tasks may impose on the learners. Both the latter author and Nikula (2007) mention the influence these processes may have to move further on the bilingualism continuum.

It seems evident that CLIL contexts create opportunities to use the language actively, rather than to learn it as a goal. This evolution from "language learning" to "language using" (Coyle 2011b: 66) makes students active participants in classroom interaction, which may enhance motivation on the part of the students. Much of the research in the field (Merisuo-Storm 2007; Lasagabaster and Sierra 2009; Lorenzo et al. 2010; Amengual-Pizarro and Prieto-Arranz 2015) demonstrates positive attitudes towards foreign language learning and lower inhibition levels when actually speaking the foreign language (Dalton-Puffer et al. 2009).

More recently, Denman et al. (2013) have demonstrated how motivation increases in junior secondary vocational students, as CLIL gives them opportunities to work on their vocational literacy and vocational language proficiency, which becomes at the same time a "positive" challenge for them. This study provides interesting insights as it involves "lower achievers" at the junior vocational level, confirming previous research in relation to lower-level groups (Merisuo-Storm 2007). Other research (Mewald 2007) had previously found that although CLIL students obtained better results than their non-CLIL counterparts, lower achievers still had problems in relation to some components of language, such as oral fluency.

One of the most comprehensive studies on motivation comes from the ITALIC Research Report (Coyle 2011a), where Coyle introduces a process-model for interpreting motivation in CLIL classes. Her model thinks of CLIL as a motivating approach in relation to the learning environment, learner engagement and learner identity: "The classroom environment, the extent to which learners are willing to

engage in learning which is constructed in and grown from that environment along with the impact this has on the learner's own sense of self as a learner and competent language user, are all significant contributors to learner motivation" (Coyle 2011a: 25). In a subsequent study, Coyle (2013) further describes these "successful" learning perspectives across different CLIL contexts by analysing learner motivation and achievement from the learners' point of view, taking classroom practices as the context of investigation and the learners as mediators in the process. She "listens to learners" in order to gather data which is "owned" by them and their teachers in order to bring about changes to classroom practices.

Another important concept often addressed in CLIL classrooms is the role of the teacher and its relation to the student and the teaching process. Nikula has shown how in CLIL classrooms students are "on a more equal footing with the teacher as far as the right to participate in classroom discourse is concerned" (Nikula 2010: 119. See Lim Falk 2008 for different results). Once again, the active role of the students is emphasized in comparison with more traditional teaching, where participants are often recipients of teacher talk. Therefore, CLIL settings involve a change in the classroom pedagogy, moving from a more teacher-centred approach, typical of traditional teaching contexts, to a more student-centred approach.

Furthermore, it seems that the didactic innovation inherent in CLIL gives teachers an opportunity to break down the barriers and to collaborate in a new learning and teaching environment. De Graaff et al.'s (2007) observation of CLIL lessons from three Dutch CLIL secondary schools provides evidence for what could be considered effective language teaching performance in CLIL settings. This is characterised, according to these authors (2007: 620), by "teachers' facilitating exposure to input at a (minimally) challenging level, facilitating output production, the use of compensation strategies as well as both meaning-focussed processing and form-focussed processing". Moreover, the fact that teachers need to communicate through the foreign language calls for some teacher mediation or scaffolding, particularly at the initial levels to help learners (Merisuo-Storm 2008; Dafouz 2011; Grandinetti et al. 2013). These strategies may involve repetitions, simplifications, explanations, reformulations to help and maximise the teaching process.

By contrast, it is also evident that when integrating both content and language in the classroom, teachers become more aware of the importance of language as a fundamental tool in the dual approach. Therefore, the language proficiency of the teachers themselves becomes an important factor in the successful implementation of CLIL methodologies (Hillyard 2011; Escobar Urmeneta 2013). Some research (Nikula 2010) has shown that in CLIL contexts the teachers' pragmatic use of the language is sometimes less varied than in the teaching of subjects in the L1, mainly in cases where teachers have (or feel they have) a limited competence in the foreign language. Similar results have been reported also in tertiary education, where "one of the main hindrances for the implementation of multilingual CLIL may be the lecturers' self-reported language competence, which shows some limitations in their knowledge of Valencian and English, especially regarding their productive skills, i.e. writing and speaking. It is noteworthy that teaching in these languages was considered to be the most difficult task" (Fortanet-Gómez 2012: 60). These results may

also be somehow related to self-confidence, because they involve, as Fortanet-Gómez describes, teaching in a new academic situation (lectures), while teachers feel more confident with other academic tasks (presenting papers at a conference, for instance), probably because these contexts are more "controlled" or restricted.

In sum, what these and other classroom studies imply is that there are many fields of reflection in CLIL as an educational approach, which involve a reconsideration of the learning and teaching process. This reconsideration goes beyond the mere fact of implementing a change in the medium of instruction; it involves a change in pedagogical practice which should be addressed by all the stakeholders involved (Hüttner et al. 2013).

Conclusions

The aim of this chapter has been to present an overview of some of the research in relation to three of the dimensions of CLIL: subject matter outcomes, language learning results and pedagogical practice. Due to the impossibility of presenting all the research conducted, the studies presented above have served as evidence to study the effectiveness of CLIL in its dual approach and as part of the curriculum in classroom practice.

Wiesemes (2009: 46–47), in an overview of research conducted at the University of Nottingham as part of the Content and Language Integrated Project, summarised some of the findings of the research, which can partly apply to the research presented in this chapter:

For Learners

- CLIL increases learner confidence.
- CLIL contributes to raising motivation.
- CLIL makes learners feel "special" in a positive sense.
- CLIL contributes to raising standards in Modern Foreign Languages (MFL).
- CLIL tends not to have any negative effects on subject learning.
- CLIL takes learners seriously by confronting them with challenging, but accessible content through scaffolded content delivery.

For Teachers

- CLIL has an impact on the communication of ideas across departments and contributes to the development of cross-curricular links.
- CLIL allows MFL teachers to enrich their traditional teaching with content elements that in turn have a positive effect on learner achievement and motivation.
- CLIL allows subject teachers to develop their pedagogies in relation to language use in the mother tongue classroom.
- CLIL raises motivation of both MFL and subject teachers through constant and renewed professional dialogue.

(continued)

It is true that in a general overview of results, we have often attested that there may be conflicting issues, which require more fine-grained analysis. First of all, we have seen how research in subject matter outcomes has not always provided positive results, although most of the findings confirm that learning subject matter in a foreign language does not negatively affect content learning. Secondly, new research seems to confirm that not all the different areas of language competence benefit equally from this integrated approach, with some linguistic competencies developing better and faster than others. Finally, the results offer an interesting insight into pedagogical practice and classroom interaction, where the role of the teacher and student may find a challenging but enriching approach.

At this point, we must also remember that "the relationship between research and practice is never straightforward so that research findings would automatically present recipes for good practice. It is inherently difficult to arrive at generalizations when studies may well have different analytical foci, make use of different types of data, and come from contextually very different situations" (Dalton-Puffer et al. 2010b: 285). Following on from this, our task will still be to extract the outcomes that recur in the research in order to reach more general conclusions. Evidently, more investigation is still needed to shed light on some of the contradictions of previous research across educational levels and cultural and linguistic dimensions. However, if CLIL classroom settings can produce some of the positive developments detailed above, we can assume that we are moving in the right direction in educational practice, despite the challenges regarding content and language integration in the curriculum.

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Influences of Previously Learned Languages on the Learning and Use of Additional Languages

Scott Jarvis

1 Introduction

Research on crosslinguistic influence has become increasingly focused on multilinguals as it addresses questions that are impossible to answer with bilinguals and second language learners alone. Research involving multilinguals has enhanced applied linguists' understanding of the range of consequences that language learners' knowledge of previously learned languages can have on their learning of an additional language. The consequences are, on balance, mostly positive when the target language is closely related to a language the learner already knows (e.g., Ringbom 2007), and such benefits are even stronger the more languages the learner knows (e.g., Jessner 2006). The relationship between these two factors also holds true when their order is reversed: The more languages a learner knows, the more successful she will be in learning the current target language, and her success will be further enhanced if the target language is closely related to one or more of the languages she has previously learned. Against this backdrop, one could hypothesize that, all other things being equal, (1) a Spanish speaker will be more successful in learning Italian than English, (2) a Spanish speaker will be more successful in learning English if she already knows another language, such as Italian, and (3) a Spanish speaker will be even more successful in learning English if the other language she already knows is Danish, Dutch, or German (i.e., a language closely related to English) instead of Italian.

Other things are rarely equal, however, and it is not impossible to find learners of a second language (L2) who are more successful in learning a distant language than third language (L3) learners in learning a related language, depending on factors such as the learners' ages, the context and opportunities for learning, levels of

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motivation and language aptitude, and levels of proficiency and literacy in the languages they have previously learned. It is thus clearly possible for a collusion of advantageous factors to produce benefits for language learning that surpass those of the combination of crosslinguistic similarity and prior bilingualism; again, however, this presumably happens only when such factors are not held constant between learners learning an L2 versus a later language and/or learners learning a distant versus similar language (see, e.g., Sanz 2000 for an example of a study that clearly shows the positive effects of bilingualism on L3 learning after other factors have been controlled).

The language learning advantages that are afforded by prior bilingualism (or even prior multilingualism) and crosslinguistic similarity are not identical, however. Bilingualism appears to provide general benefits for language learning regardless of the specific combination of languages the learner already knows and is currently learning (cf. Cenoz 2003). Crosslinguistic similarity, on the other hand, has both general (e.g., rate of learning) as well as specific consequences (e.g., route of learning) for language learning, which are both positive and negative, depending on the precise types and number of similarities and differences between the specific source and target languages in question (cf. Ringbom 2007).

The present paper deals with the general and specific influences of previously learned languages on the learning and use of additional languages. Primary emphasis will be given to research that has been conducted on learners of an L3 or later language in the foreign language classroom, with special attention given wherever possible to research that has been conducted in CLIL programs in Spain. An attempt will also be made to compare the types and amounts of influences of previously learned languages that can be found in the learning of an L3 in a traditional foreign language program versus a CLIL program.

The remainder of this chapter is structured as follows: Sect. 2 deals with the general effects of knowing two or more languages on the foreign language learning of an L3 or later language. These effects include the cognitive advantages of bi- and multilingualism, enhanced metalinguistic awareness and communicative skills, more skillful strategy use, and higher levels of attainment in an L3. Section 3 turns to the specific effects of learners' knowledge of two or more languages on their learning of an L3 or later language in the foreign language classroom. This section deals with crosslinguistic influence, both positive and negative, from the L1 and L2 to the L3. In accordance with the emphases of the relevant literature, this section focuses mainly on lexical transfer but also deals to some degree with syntactic transfer. It also addresses the question of which language (i.e., the L1 or the L2) is more likely to serve as the source of crosslinguistic influence. Next, Sect. 4 narrows the focus to the types and amounts of crosslinguistic influence that have been found among L3 learners in CLIL programs versus traditional foreign language classes, particularly in the Basque Country and Catalonia. An important question dealt with in this section is which educational context is more conducive to positive versus negative transfer. Finally, Sect. 5 summarizes the main findings of the relevant research, their key implications for language pedagogy, and possible directions for future research in this area.

2 General Effects of Knowing Two Languages on the Learning of a Third

Prior to the 1960s, most research suggested that bilingualism was, on the whole, disadvantageous to cognitive, conceptual, and linguistic development (e.g., Saer 1923; see Bialystok 2005 for a summary). A study by Peal and Lambert (1962), however, called into question the findings of these studies, largely for methodological reasons, and provided its own evidence that bilinguals who were matched with their monolingual counterparts in terms of sex, age, and socioeconomic status were actually superior to the monolinguals in a number of linguistic and nonlinguistic abilities. Researchers today recognize that bilingualism brings with it a mix of both advantages and disadvantages depending on the specific tasks given to participants. Bilinguals often show deficits in vocabulary knowledge in comparison with their monolingual peers, but simultaneously show significant advantages in their ability to process, recall, and reorganize both verbal and nonverbal information. Some of these findings have come from a study by Ben-Zeev (1977), who accounted for them as follows (pp. 1017–1018):

> The bilinguals in this study have been confronted early in life with a verbal environment of unusual complexity, in which underlying order is difficult to discover because the rules belong to two structures, not one. As a result, they seem to have developed special facility for seeking out the rules and for determining which are required by the circumstances.

In more recent research, the special ability that bilinguals exhibit is often identified as selective attention and inhibitory control (e.g., Duncan 1996). Inhibitory control involves, among other things, the ability to suppress irrelevant information while performing a task. The flanker task is one example of a task that is used to test inhibitory control. In this task, participants are shown a sequence of arrows and are instructed to indicate as quickly as possible which direction the middle arrow is pointing. In some of the trials, the middle arrows points in the same direction as its flanker arrows (→→→→→), and in other cases, it points in a different direction (→→←→→). Trials where the middle arrow points in a different direction represent an incongruent condition, and this condition requires participants to inhibit information about the direction of the flanker arrows while identifying the direction of the middle arrow. Importantly, a number of studies have found that bilingual participants are significantly faster than monolinguals in performing tasks like this that require inhibitory control (e.g., Bialystok 2005; Costa et al. 2008). According to Bialystok (2005), the reason for bilinguals' advantage is that "bilingualism by its very nature results in greater use of inhibitory control because it is invoked every time language is used" (p. 427). This explanation rests on the assumption that both languages of a bilingual are always active in the mind, and that one of the languages has to be inhibited every time the other is used. If this assumption is correct, bilinguals constantly exercise inhibitory control, and through extensive practice, their inhibitory-control abilities develop well beyond those of monolinguals (see Bialystok 2005).

Research in Spain by Costa and his colleagues suggests that bilinguals' cognitive advantage is not limited to inhibitory control. Through a series of studies in which

a flanker task was administered to both Spanish monolinguals and Catalan-Spanish bilinguals enrolled as undergraduate students at the University of Barcelona, Costa et al. (2008, 2009) found that bilinguals show an advantage over monolinguals not only in the incongruent condition (where inhibitory control is required) but also in the congruent condition (where inhibitory control is not required). Crucially, however, bilinguals' advantage in the congruent condition occurs only when the task includes both congruent and incongruent trials (see also Bialystok 2001, 2006). In other words, bilinguals' advantage in the congruent condition—and also to some extent in the incongruent condition—is a consequence of their ability to switch more efficiently than monolinguals between congruent and incongruent conditions. According to Costa et al. (2008), bilinguals' superior ability to switch between conditions and to exert inhibitory control in the incongruent condition shows that they have advantages in two of the central processes of executive control: conflict monitoring and conflict resolution. The former process is responsible for keeping track of changing conditions, detecting conflicts, and adjusting behavioral requirements when changes or conflicts have been detected. The latter process is responsible for performing the appropriate mental action, such as exerting inhibitory control, continuing to follow the same rule as before, or carrying out mental planning (pp. 62–63).

One of the implications of bilinguals' enhanced executive control is that it might improve their ability to learn additional languages. Executive control is generally considered to be a central component of working memory (e.g., Cowan 1995; Baddeley 2003), and working memory capacity has often been found to be predictive of language aptitude and language learning success (e.g., Sáfár and Kormos 2008). Although the relationship between executive control and language learning success is not yet perfectly clear (see, e.g., Linck et al. 2013), it is clear that bilinguals tend to have cognitive advantages that allow them to process information more efficiently than monolinguals (e.g., Costa et al. 2008), and it is also clear that bilinguals tend to be better language learners than monolinguals. Regarding the latter finding, Cenoz (1991) found that Basque-Spanish bilingual high school students acquire English better than their Spanish monolingual peers, and Sanz (2000) found the same thing with respect to Catalan-Spanish bilingual versus Spanish monolingual high school students in Spain. In a related study, Lasagabaster (1997) found that Basque-Spanish bilingual elementary school pupils' levels of L3 English proficiency are closely associated with their levels of bilingualism. These studies did not examine the potential effects of attentional factors, such as executive control, on bilinguals' ability to learn an L3, but Lasagabaster did examine the potential effects of another cognitive factor: metalinguistic awareness. He found that his bilingual participants were not only more successful in learning English, but also had higher levels of metalinguistic awareness than their monolingual peers.

Metalinguistic awareness can be described as "a sensitivity to language as a system which helps [learners] perform better on those activities usually associated with formal language learning" (Thomas 1988: 240). In a review of past studies that have examined the relationship between bilingualism and metalinguistic awareness, Cenoz (2003) pointed out that "research on the effects of bilingualism on metalinguistic awareness has associated bilingualism with a higher ability to reflect on language and to manipulate it" (p. 73). Jessner (2006) argued that the learning of each incremental

language beyond the L1 increases a learner's metalinguistic awareness, and that this in turn accelerates the learning of subsequent languages. The empirical evidence that Jessner referred to suggests that improvements in a learner's metalinguistic awareness are largely a result of the person's accumulated experience in identifying crosslinguistic correspondences and in relying on all available sources of knowledge while inferring meaning in the target language. One of the major consequences of increased metalinguistic awareness is, correspondingly, an enhanced ability to make use of prior knowledge, including the learner's knowledge of the L1 and any other languages she might know (see also Jarvis and Pavlenko 2008: 194–196). Work by other scholars suggests that bilinguals and multilinguals, in comparison with monolinguals, are more tolerant of ambiguity (Dewaele and Wei 2013), more creative and flexible in their thinking (Ricciardelli 1992), use a greater variety of communicative strategies (Thomas 1992), and entertain broader hypotheses about how the target language works (Zobl 1992). All of these factors appear to afford advantages for language learning.

Although the studies reviewed in this section do not specifically address the question of whether the effects of prior bilingualism on L3 learning differ between CLIL contexts and traditional language programs, there are some indications in the literature that CLIL contexts might produce similar cognitive benefits as prior bilingualism, and that bilinguals benefit more from CLIL contexts than from traditional language programs alone. For example, studies by Chamot (2001) and Ruiz de Zarobe and Zenotz (2012) show that students in CLIL classrooms tend to develop higher levels of metacognitive awareness than do students in traditional language classrooms, and that this helps them in their selection of appropriate language learning strategies, which in turn results in accelerated learning (see the Chapter "The Effects of Implementing CLIL in Education" by Ruiz de Zarobe 2015, in this volume).

To summarize, the acquisition of two or more languages appears to result in a number of enhanced cognitive abilities that are either directly or indirectly beneficial to later language learning. These abilities include attentional control, processing efficiency, language awareness (including an awareness of crosslinguistic similarities), and, generally speaking, the ability to solve problems creatively and flexibly. Although these advantages of prior bilingualism appear to be found in all contexts of L3 learning, the literature provides some indication that they might be greater in CLIL than in traditional language programs. These influences can be referred to as general effects because they tend to occur regardless of the specific combination of languages that the learner already knows and is currently learning. In the following section, I turn to the types of effects that are unique to specific combinations of languages.

3 Specific Effects of Previously Learned Languages on the Learning of a Third

It goes without saying that Spanish speakers experience different challenges from French, German, and Japanese speakers in the learning of English. Spanish speakers also experience different challenges in learning English than they do in learning French, German, or any other language. Clearly, the specific combination of

languages that a learner knows and is currently learning has a substantial impact on the types of challenges she will encounter and on the magnitude of those challenges. Of course, the influences that a person's prior languages exert on the learning and use of the target language do not always result in challenges, difficulty, or errors (Ringbom 1987). Besides challenges, they often take the form of patterns and preferences that are unique to learners from a particular source-language background, even when those patterns and preferences do not represent erroneous or even unconventional language use (e.g., Jarvis 2000; Von Stutterheim 2003).

Learners with similar language histories do not, of course, exhibit all of the same patterns and preferences when using a common target language (cf. Odlin 2014). However, what is remarkable is that they do tend to share enough of the same patterns and preferences that, for example, essays written in English by Spanish speakers versus German speakers, and so forth, can be distinguished from one another with very high rates of accuracy. By way of illustration, a recent study by Jarvis et al. (2013) showed that the L1s of university-level learners of English from 11L1 backgrounds (Arabic, Chinese, French, German, Hindi, Italian, Japanese, Korean, Spanish, Telugu, and Turkish) can be correctly identified at a rate of roughly 84 % accuracy on the basis of the learners' use of individual words, multi-word sequences, and sequences of parts of speech (e.g., Noun-Verb-Noun). The researchers did not have access to information about the learners' knowledge of other languages besides their L1 and English, but given the learners' levels of education and their countries of origin, it is likely that most of the learners were proficient in more than their L1 and English. From this perspective, it might be appropriate to say that what the researchers were actually able to identify was not the learners' L1s per se, but rather the language-use patterns and preferences of groups of learners defined by the languages (plural)—not the language (singular)—they know.

Several researchers have attempted to tease apart the effects of the L1 versus the L2 in cases of L3 learning. In some cases, this is impossible because the influences of the L1 and L2 are simultaneous and overlapping (e.g., Dewaele 1998; Cenoz 2001; see also De Angelis 2007: 20–21). There are nevertheless many instances where the influence is unquestionably from only one or the other of the two languages. Most of the relevant studies have focused on lexical transfer. One such study, by Williams and Hammarberg (1998), was a case study of a native English speaker (L1) who was also proficient in German (L2) and at the time of the study was living in Sweden and learning Swedish (L3). (She had also previously studied French and Italian, but did not develop high levels of fluency in either of these languages.) The study examined her switches into other languages while she was speaking Swedish. The results showed that nearly all switches were into either English (L1) or German (L2), and the primary finding was that her switches into English were mainly intentional, whereas her switches into German were mainly unintentional. The researchers interpreted the results as showing that, in cases of L3 acquisition, the L2 is co-activated with the L3 and is a constant potential source of interference, whereas the L1 can be successfully deactivated or inhibited.

The findings of other studies, however, do not seem to support the conclusion that interference from the L1 can necessarily be inhibited whereas interference from

a nonnative language cannot. For example, a study by Dewaele (1998) examined the lexical inventions (i.e., coinages) of university-level Dutch-speaking learners of French who had also learned English. The participants' lexical inventions in French reflected influence from both Dutch and English, but the influence from Dutch was strongest when French was the L2 and English was the L3, whereas the influence from English was strongest when English was the L2 and French was the L3. In other words, the order in which the languages were acquired seemed to be the best predictor of which language was the primary source of influence, with the primary influence coming from whichever language was acquired immediately before the target language (French, in this case). The same interpretation might also account for the patterns found in the Williams and Hammarberg (1998) study. However, there are still other forces that appear to be at least as powerful.

Two of the most powerful factors affecting which language will serve as the source for transfer are language distance and language proficiency. The effects of language distance can be seen in comparisons of groups of L2 learners whose native languages are closely related versus unrelated to the L2, as well as in comparisons of patterns of transfer in L3 learners whose L1 is closely related and whose L2 is unrelated to the L3, or vice versa. Studies conducted in Finland have compared Finnish-speaking and Swedish-speaking learners of English and have found that both groups show a heavy reliance on the semantics of their L1s, but when it comes to form-related transfer (e.g., lexical blends and coinages), they tend to rely almost exclusively on Swedish, regardless of whether Swedish is their L1 or L2 (Ringbom 1987, 2001). Importantly, Swedish is closely related to English whereas Finnish is not.

Cenoz (2001) has made similar observations regarding the learning of English by Basque-Spanish and Spanish-Basque bilinguals enrolled in an elementary and secondary school in the Basque Country in Spain. The researcher elicited oral data from the participants by asking them to narrate a story from a wordless picture book. She then transcribed the data and attempted to identify all cases of lexical transfer involving borrowings (e.g., *Erik see ez dagoela the frog* = "Erik sees that the frog is not there") and foreignizing in the data (e.g., *Siguient morning* = "The next morning"; from Spanish *siguiente*). The results showed that the source for most of the instances of lexical transfer was Spanish (a language related to English), and this was true regardless of whether the participants' L1 was Basque or Spanish.

Cenoz's (2001) study also took into consideration the potential effects of learners' levels of proficiency in the target language. Contrary to previous work, such as Taylor (1975) and Sjöholm (1995), which showed that less proficient learners tend to rely more on transfer, Cenoz's results showed that the occurrence of lexical transfer increases from Grade 2 to Grade 6 to Grade 9. Jarvis and Pavlenko (2008) have pointed out some of the challenges of measuring the effects of target-language proficiency on transfer and of making comparisons between studies. Importantly, they interpret the results of past research as showing that the relative frequency (not raw counts) of transfer-related errors tends to decrease with advances in target-language proficiency, but that the overall proportion of errors that are due to transfer versus other factors tends to grow with target-language proficiency (pp. 201–203).

In L3 learning, proficiency effects on transfer are not determined solely by learners' L3 proficiency. Learners' proficiency in the L1 and L2 also has substantial effects. In perhaps most cases of traditional classroom language learning, the effects of L1 proficiency on transfer do not vary from one learner to the next because all learners in the class are equally and fully proficient native speakers of their L1. For immigrants, however, the effects of L1 proficiency on transfer are very real. For example, a study by Guion et al. (2000) has found that Italian-speaking and Korean-speaking immigrants to Canada process and produce English (the target language) more slowly the older they were when they moved to Canada. The researchers assumed that learners with a later age of arrival in Canada were more proficient in their L1, and the researchers interpreted their results as showing that learners who are more proficient in their L1 need to exert more inhibitory control over the L1 when using the target language, which in turn slows down their processing of the target language.

Although there is still a great deal that researchers do not know about the effects of L1 proficiency on transfer, the field has come a long way in examining the effects of L2 proficiency. In the study by Cenoz (2001) that was discussed earlier, participants were categorized into three groups: (a) Basque-Spanish bilinguals who were dominant in Basque, (b) Spanish-Basque bilinguals who were dominant in Spanish, and (c) Basque-Spanish bilinguals who had learned both languages simultaneously as first languages. The results showed that both the L1 Basque and L1 Spanish groups exhibited more transfer from Spanish than from Basque, and both groups also produced a similar proportion of borrowings and foreignizings that reflected simultaneous influence from both languages. The L1 Basque and Spanish group also relied more on Spanish than on Basque, but produced far more instances than the other two groups of lexical transfer involving simultaneous influence from both languages. Cenoz did not analyze the results qualitatively, but it appears that early bilingualism leads to qualitatively different patterns of transfer in L3 learning than does late or sequential bilingualism.

Children throughout Europe and in many other areas of the world learn multiple languages in school, and in such cases the effects of the L2 on an L3 might be different from what is found among L3 learners whose prior languages have been acquired in naturalistic settings, as is generally the case for Basque-Spanish and Catalan-Spanish bilinguals. The situation in bilingual Finland is quite interesting because the two largest language populations—Finnish speakers and Swedish speakers—have for several decades learned each other's languages in school. However, according to Ringbom (1987), most of the Swedish speakers in Finland tend to acquire Finnish as a second language (i.e., being surrounded by the language even outside of school), whereas the Finnish speakers tend to learn Swedish as a foreign language (i.e., experiencing it mainly in the language classroom). Studies by Jarvis (1998, 2000, 2002) have included Swedish-speaking participants who lived in Finnish-dominant areas as well as in Swedish-dominant areas, who thus differed substantially in their levels of L2 Finnish proficiency. However, in their L3 English writing, both groups showed very little detectable influence from L2 Finnish, but both groups showed heavy influence from L1 Swedish. This was

reflected in their use of individual words (e.g., referring to a tray as a *brick*, Sw. = "bricka"), compound words and phrasal verbs (e.g., referring to a human collision with the phrase *run on* as in *She ran on Chaplin*, Sw. "springa på" = "run into", lit. 'run on'), and the types of constructions they used (e.g., *It was a girl* pro *There was a girl*, Sw. "Det var en flicka" = "There was a girl", lit. "It was a girl").

Although differences in Swedish speakers' knowledge of L2 Finnish do not seem to have much of an impact on their use of L3 English, the same cannot be said of differences in Finnish speakers' knowledge of Swedish. The same studies by Jarvis (1998, 2000, 2002) mentioned in the preceding paragraph included two groups of Finnish speakers who were at the same level of education but had learned English and Swedish in a different order. Group 9A included Finnish ninth graders who had begun learning English in Grade 3 and had begun learning Swedish in Grade 7, whereas Group 9B included Finnish ninth graders who had begun learning Swedish in Grade 3 and English in Grade 7. The results of Jarvis' analysis of the learners' word choices showed that Group 9B exhibited far more influence from Swedish (e.g., *She ran on Chaplin*) and far less influence from Finnish (e.g., *She crashed to Chaplin*) than Group 9A did. The result was not just that the two groups made different types of transfer-related errors. Because Swedish is far more congruent with English than Finnish is, positive transfer from Swedish meant that Group 9B was able to achieve higher levels of accuracy in some areas of English grammar than Group 9A was (e.g., in their use of both definite and indefinite articles), even though Group 9B had received only two years of English instruction versus the 6 years that Group 9A had received. The biggest differences in their use of English did not seem to be related to how long they had studied English, but rather to how proficient they were in Swedish.

When Finnish speakers rely on their knowledge of Swedish while using English, they do not do so in exactly the same manner as Swedish speakers do, however. A study by Odlin and Jarvis (2004) examined Finnish speakers' and Swedish speakers' use of words in English that have cognates in Swedish. These included the function words *instead* (Sw. "i stället"), *for* (Sw. "för"), and *what* (Sw. "vad"). The researchers found that a knowledge of Swedish indeed seems to make Finnish speakers more likely to use these words, but Finnish speakers do not use them in the same way that Swedish speakers do. For example, the data showed that Finnish speakers tend to use *instead* as a preposition (e.g., *They took Chaplin instead of the girl*), whereas Swedish speakers tend to use *instead* as a clause-final adverb (e.g., *They let the girl go and took Chaplin instead*). These usages reflect the patterns that were also found in the learners' L1s, which seems to confirm Ringbom's (1987, 2001) observation that, in cases of L3 learning, although formal influence tends to come from a language that is similar to the target language, semantic/functional influence tends to come from learners' L1. What is novel about the findings of the Odlin and Jarvis study is that formal influence from Swedish and functional influence from Finnish were found to be simultaneous: Finnish speakers' knowledge of Swedish seemed to affect which words they chose, while their knowledge of Finnish seemed to determine how they used them. Ringbom (2001) acknowledged that semantic influence from an L2 is possible, but claimed that it tends to occur only

when learners are highly proficient in an L2. Importantly, semantic influence from an L2 does not seem to be widespread among L3 learners who have learned the L2 in traditional foreign language classes at school.

If it is true at least among classroom learners of an L3 that semantic transfer tends to originate from the L1 and formal transfer tends to originate from whichever language is more similar to the L3, it also appears to be true that word-order transfer often originates from the L2 even when the L1 is objectively more similar to the L3 than the L2 is. Examples of this are especially clear in studies involving German and English as nonnative languages. A study by Håkansson et al. (2002) investigated the learning of L3 German in a secondary school by L1 Swedish speakers who had previously learned English as an L2. Importantly, both Swedish and German are verb-second (V2) languages, where the placement of an adverbial at the beginning of the sentence results in subject-verb inversion (i.e., A + SVO becomes AVSO). This type of subject-verb inversion does not occur in English, so if language distance determined which language served as the source for word-order transfer, then we should not expect Swedish speakers to produce English-like ASVO constructions in L3 German. However, the results of the Håkansson et al. study showed that the participants did indeed produce the English-like pattern in the majority of cases. The researchers interpreted their results as reflecting an acquisitional universal (i.e., a processing constraint) that causes learners of all languages to resort in early stages of acquisition to a canonical SVO word order. However, a subsequent study by Bohnacker (2006) cast doubt on this interpretation. Bohnacker was able to find Swedish-speaking learners of German who had not previously learned English, and she observed that they correctly produced V2 (i.e., AVSO) structures in most cases even with only four months of German instruction. From this perspective, it seems that the participants in the Håkansson et al. study likely did transfer their word-order preferences from L2 English instead of being constrained by an acquisitional universal.

A more recent study from Spain supports this interpretation, though this time the target language was English and the source language was German. The study was conducted by Sanchez (2011) with Catalan-Spanish bilinguals who were in Grades 3–5 in public schools in Spain. The participants had been learning German in a CLIL program that combined formal language instruction with occasional naturalistic exposure and were now also receiving formal English instruction. The participants were asked to narrate a picture story in English, and the researcher's analysis focused on syntactic constructions that are similar between Catalan, Spanish, and English, but are different in German. The results showed that an overwhelming majority of the learners who produced relevant contexts transferred word-order constructions from German into English. This resulted in clauses such as **Luisa and Pedrito's dog will the breakfast eat* and **When they with the mum talk*, which reflect German word order but not word order from either Catalan or Spanish. Although it is quite possible that the participants assumed that English is more closely related to German than it is to Catalan or Spanish—and thus that the influence of German on English word order in this study is an effect of perceived language distance—Sanchez favored the interpretation that, at least in the area of

word order, learners' native languages are less apt to affect their production of the target language than is their knowledge of a nonnative language—independently of the effects of perceived language distance. This very well could be true in cases involving L1-L2-L3 combinations that all represent the same language family, such as Indo-European, but I am not aware of any studies that show L2 word-order transfer in cases where the L1 and L3 belong to the same language family but the L2 does not. In fact, in my own analyses of L3 English data produced by L1 Swedish speakers with L2 Finnish (a non-Indo-European language), I have found ample cases of L1 word-order transfer and very few cases of L2 word-order transfer (see also Odlin 2009).

To summarize, there are a great number of factors that determine when transfer will occur, which area of language use it will affect, and which language or languages will serve as the source of that transfer. Among the most prominent factors affecting transfer in the foreign-language learning of an L3 are language distance, language proficiency, the nonnative-language effect, the order in which a person's languages have been learned, and the contexts in which those languages have been learned. The number of such factors and the complex ways in which they interact make it difficult to predict exactly when and where transfer will occur. However, as Odlin (2006, 2014) has pointed out, it is just as difficult to predict when transfer will not occur. In a similar vein, it is dangerous to make categorical claims about what types of transfer will occur under which conditions. Even though semantic transfer might tend to originate from the L1, word-order transfer might often originate from a nonnative language, and formal lexical transfer might tend to originate from whichever language is most similar to the target language, it would be a mistake to overlook the fact that other patterns often do arise. The learning mechanisms of the human mind simply are not so rigid that they always follow the same paths. It is also important to remember that language transfer very often has positive consequences, particularly in cases where the target language and at least one of the languages the learner knows well are closely related.

4 Crosslinguistic Influence Among Third-Language Learners in CLIL Programs

In the preceding section, I discussed a study by Sanchez (2011), which investigated crosslinguistic influence from L3 German to L4 English in a context where the learners had been learning German in a CLIL program. In this section, I give attention to the few studies that have investigated crosslinguistic influence in cases where the CLIL program revolves around the target language. Perhaps the ultimate questions for this chapter in relation to the theme of the book are whether transfer occurs more in CLIL contexts than in language learning contexts that involve only traditional formal language instruction, and whether whatever types of crosslinguistic influence occur in CLIL programs are advantageous or disadvantageous in relation to those that occur in traditional language programs. Few studies

directly address these questions, so I will begin with a review of what is known about transfer in CLIL programs and will then attempt to draw out answers to these two important questions.

In a review of studies that have been conducted on the effectiveness of CLIL, content-based instruction, and language immersion programs, Lightbown and Spada (2006) have pointed out that, even though such programs enhance learners' reading and listening comprehension, communicative effectiveness, and fluency, learners often do not achieve the expected levels of accuracy in their production of the target language. One major problem, according to Lightbown and Spada, is that such programs are often made up of learners and teachers who are all speakers of the same native language, and their use of the target language is "influenced by the same first language, the same learning environment, and the same limited contact with the target language outside the classroom" (p. 157). This allows them to communicate effectively with each other in the target language by speaking an interlanguage that uses the vocabulary of the target language while relying on the idiom and pragmatics of the native language. In less successful immersion programs, teachers and students communicate by mixing the native language and target language in order to compensate for an inability to teach and learn solely through the medium of the target language (Johnson 1997).

Turning to CLIL programs in Spain, a study by Celaya (2008) investigated lexical transfer in the L3 English writing of Catalan-Spanish bilinguals in Catalonia. The participants included fifth and seventh graders in an English CLIL program, as well as fifth and seventh graders undergoing regular formal English instruction at school. All participants were asked to write a simple composition in which they were directed to introduce themselves. They were given 15 min to complete the composition. The researcher analyzed the data for two types of lexical transfer: lexical borrowings (referred to as switches in various other studies) and lexical inventions (or coinages). Borrowings included any words that were borrowed wholesale from the learners' native languages (either Catalan or Spanish) (e.g., *My mother is ama de casa*), whereas lexical inventions included words derived from the L1 that were morpho-phonologically adapted to English (e.g., *I have a bird. He is a muscler*; from Catalan *mascle* = 'male'). The results showed relatively low levels of lexical transfer among any of the groups, but also showed that for most groups, lexical borrowings were substantially more frequent than lexical inventions, although the proportion of lexical borrowings decreased from Grade 5 to Grade 7, whereas the proportion of lexical inventions increased. The CLIL students in Grade 7 were the only group to exhibit a higher number of lexical inventions than of lexical borrowings, but both CLIL groups produced only about half as many lexical borrowings as their regular-instruction counterparts. Celaya interpreted these results as showing advantages for CLIL instruction. Importantly, where lexical borrowings occur, they demonstrate a complete lack of reliance on target-language knowledge, whereas lexical inventions demonstrate an awareness of and an attempt to conform to target-language rules and patterns. The fact that the CLIL students produced fewer borrowings and approximately the same proportion of lexical inventions as their regular-instruction counterparts was therefore interpreted as a positive sign of

their awareness of and ability to make use of target-language rules. Celaya also observed that the CLIL students "have more vocabulary at their disposal and, consequently, are able to use more words in the target language" (p. 47).

A follow-up study by Celaya and Ruiz de Zarobe (2010) expanded the analysis to include not just Catalan-Spanish but also Basque-Spanish learners of English as a foreign language in CLIL as well as non-CLIL programs. The participants in this study included seventh-grade Catalan-Spanish students in both CLIL and non-CLIL programs, as well as tenth-grade Basque-Spanish students in both CLIL and non-CLIL programs. The participants in Catalonia were given 15 min to write a composition on the topic of "My life: past, present and future expectations," whereas the participants in the Basque Country were given 20 min to write a letter to an imaginary host family. As in the previous study, the analysis focused on the learners' use of lexical borrowings and lexical inventions. As before, the results showed that lexical borrowings were substantially more frequent among non-CLIL students than among CLIL students, whereas the use of lexical inventions was roughly equivalent between the two groups. The differences between the CLIL and non-CLIL students were starkest in the case of the tenth-grade Basque-Spanish students, where lexical borrowings reached a rate of 3.3 % among the non-CLIL students but were no higher than 0.4 % among the CLIL students.

Unfortunately, the number of studies that have compared CLIL and non-CLIL programs in relation to transfer do not extend much beyond the studies just discussed (but see also Agustín Llach 2009). The findings of these studies do nevertheless suggest preliminary answers to the questions posed at the beginning of this section, namely (a) whether transfer occurs more in CLIL contexts than in non-CLIL contexts, and (b) whether the transfer that occurs in CLIL contexts is of a more or less benign quality than the transfer that occurs in non-CLIL contexts. The answer to the first question appears to be that some types of transfer are more frequent in CLIL contexts, and other types of transfer are more frequent in non-CLIL contexts. In the language immersion programs in Canada and Hong Kong described by Lightbown and Spada (2006), it appears that semantic, pragmatic, and discursive transfer are far more widespread than they would be in regular foreign-language classrooms. Johnson (1997) also pointed to code-mixing as a frequent problem in the Hong Kong immersion setting, but it is not clear whether code-mixing is actually any more frequent in an immersion setting than it would be in a traditional foreign-language classroom. The findings of Celaya (2008) and Celaya and Ruiz de Zarobe (2010) indicate that code-mixing in the form of lexical borrowings is actually a worse problem in non-CLIL contexts than it is in CLIL contexts.

Regarding the second question, the findings of Celaya (2008) and Celaya and Ruiz de Zarobe (2010) suggest that the overall effects of transfer in CLIL contexts are less negative than in non-CLIL contexts. In these studies, the overall number of transfer-related lexical errors was smaller among CLIL students, and the types of transfer-induced lexical errors produced by CLIL students demonstrated higher levels of ability in the target language. Of course, one very important advantage that the CLIL students had was considerably more total hours of language exposure and instruction than the non-CLIL students had. For example, the seventh-grade CLIL

students in both studies had received about 400 h of CLIL instruction in addition to about 730 h of regular EFL instruction, for a combined total of about 1,130 h of English instruction, whereas their non-CLIL counterparts had received only 416 h of EFL instruction. The CLIL students' superior performance in relation to lexical borrowings might therefore have been inevitable due to the considerably higher amount of instruction they had received. A person might therefore justifiably question whether the students' CLIL instruction per se had anything to do with their superior performance.

These questions will need to be addressed further in the future, especially in comparisons of CLIL versus non-CLIL cohorts who are equivalent in all relevant respects, including the number of hours of target-language instruction they have received. In the meantime, if CLIL contexts do enhance learners' metalinguistic awareness, metacognitive awareness, and control over learning and communicative strategies, as was suggested in Sect. 2, then CLIL learners might indeed be at an advantage in their ability to selectively make use of helpful similarities between the target language and the languages they already know while inhibiting potential negative influences.

Conclusion

The research discussed in this chapter suggests strongly that classroom learners of a foreign language experience substantial advantages when they come to the learning task having already acquired at least one other nonnative language. Regardless of what the previous nonnative language happens to be, the existing literature shows that learning and using this language while monitoring and inhibiting the native language will lead to enhanced cognitive abilities involving attentional and executive control, and will also lead to greater metalinguistic awareness and more selective use of appropriate learning and communicative strategies. It does matter what the language is, however, when it comes to the specific effects it will have on the learning process. A language that is similar to the target language will tend to exert greater effects, particularly in the domain of vocabulary, including the subdomains of word choice, lexical switches and borrowings, lexical inventions, and morphophonological errors. In the domains of semantic and pragmatic transfer, on the other hand, the influence of the L1 will tend to be greater, and in the domain of word order, the influence is often from a nonnative language even when the L1 is syntactically more similar to the target language. These are only tendencies, however, and existing studies have documented copious exceptions.

It appears that CLIL instruction has the potential to complement and perhaps even magnify the positive effects of having learned a nonnative language prior to learning an L3. Prior language learning tends to result in higher levels of metalinguistic awareness—including an awareness of similarities between the target language and all previously learned languages—whereas CLIL

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instruction appears to support the development of metacognitive awareness. Both types of awareness appear to lead to accelerated rates of learning, as well as to improved use of relevant language strategies for learning, processing, and using the language. The literature does not directly indicate whether CLIL or classroom language learning leads to improved attentional or executive control, which has been attested primarily in cases of early bilingualism. It is noteworthy that most of the participants in the studies included in the second part of this book are both early bilinguals and classroom learners of English as a foreign language. Their experience as early bilinguals can be expected to have provided them with improved cognitive abilities even before they began their formal education. It is not yet clear whether their classroom foreign-language instruction has further enhanced those abilities, but the conditions that are believed to be responsible for cognitive advantages among bilinguals are certainly also present in classroom-based language learning, and these conditions seem to be stronger in CLIL environments than in traditional language classrooms. Recall that Bialystok (2005) and Costa et al. (2008) have attributed bilinguals' cognitive advantages to the greater practice they have had in monitoring and inhibiting one language while using another. Given the higher levels of both receptive and productive language use that tend to take place in CLIL environments, it seems logical that learners in such environments might gain a great deal more practice using these executive skills than do learners in more traditional instructional environments.

Studies that have compared crosslinguistic influence in CLIL versus non-CLIL environments also suggest advantages for the former environment. The relevant research is still scarce, but the existing studies show that transfer-related errors tend to be less frequent and of a less negative quality in CLIL versus non-CLIL environments. The advantages of CLIL instruction in relation to transfer are somewhat difficult to evaluate, however, because the CLIL students in these studies received considerably more hours of instruction in the target language than the non-CLIL students. While definitive answers to these questions are still pending, it is worthwhile to consider the implications of what Lightbown and Spada (2006) have said about transfer-related problems in immersion programs. It seems that CLIL instructors would do well to augment their content-based instruction with form-focused language instruction that builds learners' metalinguistic awareness, their knowledge of how various notions are conventionally expressed in the target language, and their desire to use the target language accurately and appropriately.

A great deal of future research is still needed in this area. First, studies are needed to determine whether classroom language learning in both second-language and foreign-language contexts results in the same types and magnitudes of cognitive advantages as have been found among bilinguals. Second, this area of research could then be extended to determine how CLIL programs compare with traditional foreign-language programs in relation to the types

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and levels of cognitive advantages they lead to. Third, research is needed to determine precisely how the learning of additional languages leads to increased metalinguistic awareness, and which specific types of metalinguistic awareness produce the most positive outcomes for language learning. Fourth, there is still a great deal that researchers do not yet know concerning the factors that affect which of an L3 learner's previous languages will serve as the source for crosslinguistic influence in different domains of language use. Finally, regarding the effects of CLIL on the types and amounts of transfer that learners exhibit, studies are needed that compare students in CLIL and non-CLIL programs who are equivalent in relation to total hours of instruction as well as in all other relevant respects. Future research on these questions has the potential to lead to vast improvements in the field's understanding of the nature of language learning and crosslinguistic influence, and of how foreign languages can be taught most effectively.

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Time and Timing in CLIL: A Comparative Approach to Language Gains

Carmen Muñoz

1 Introduction

The title of the present chapter owes its inspiration to Merrill Swain's (1981) paper *Time and Timing in Bilingual Education.* Swain's purposes in writing that article were twofold. The first purpose was to attempt to resolve the contradictions that existed concerning the view that time spent studying in a second language (L2) is highly correlated with proficiency in that language. The second purpose was to draw out implications in terms of what the time devoted to instruction in the L2 should be in bilingual education, and what the timing of the introduction of the languages of instruction should be. As regards the first purpose, the distinction drawn by Cummins (1979) between basic interpersonal communicative skills (BICS) and cognitive-academic language proficiency (CALP) was instrumental in explaining the different results obtained in situations of immersion in the majority language (e.g. immersion programmes in Canada) and in situations of transitional bilingual education for minority students. Relevant evidence was also drawn from comparisons of early and late immersion outcomes. Swain (1981) reports the results of a study in which students who had accumulated 1,400 h of French starting at age 12 obtained French (L2) scores equivalent to students who had accumulated over 4,000 h of French starting at age 5 (Lapkin et al. 1980). More specifically, the performance of the early immersion students was superior to that of the late immersion students in listening comprehension, but the latter obtained higher results than the former in reading comprehension, and the performance of both groups was similar on a French cloze test.

As for the implications concerning time and timing, a distinction was made between the majority child (e.g. Anglophone children in Canada) and the minority child (e.g. Spanish-speaking children in the United States). The former would

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benefit from an early introduction to allow for the development of communicative skills in school, given that this is not so feasible in the wider environment. In contrast, the minority child will likely acquire basic interpersonal skills outside the classroom. Hence, Swain's suggestion for the minority child was that L2 introduction be put off until as late as possible in order to ensure the continuous development of the first language and the subsequent transfer of the cognitive-academic tools acquired through the first language to their L2.

Bilingual education, and immersion programmes in particular, constituted the most important innovation in language education in the last decades of the twentieth century. It may be claimed that in the first decades of the twenty-first century Content and Language Integrated Learning (CLIL) is on its way to becoming one of the most widely established innovations in language education in Europe (see Eurydice Report 2006; Navés 2009; Pérez-Cañado 2012 for a comprehensive and critical review). Although there is no unifying consensus of what the term means in the varied settings in which it is currently used, from primary to tertiary education and on many different scales, CLIL has become an umbrella term for different educational settings where learners are engaged in the joint learning practice of subject matter and foreign language (FL) (Smit and Dafouz 2012). Accordingly, in this paper the term will be used in this general sense, to refer to situations in which subject matter is taught by means of a FL, independently of the extent to which language learning goals and activities are integrated with the content goals and activities (Coyle 2007). Excluded are situations where the minority language of a bilingual community is used as the language of education of pupils whose first language is not the school language (e.g. Catalan school immersion programmes). Among the many important distinctive characteristics of this type of situations, pupils have opportunities to learn and use both languages in the wider environment as well as the school environment (see Lasagabaster and Sierra 2010).

The purposes of the present paper mirror those in Swain's (1981) article, but it is concerned with different learning situations both inside and outside the school. The first purpose is to discuss the time issue in relation to CLIL programmes in primary and secondary education. One of the main advantages of CLIL is considered to be the additional exposure time to the target language (TL) that is provided (Muñoz 2002, 2007). However, evidence concerning the period of time (and the intensity) needed for fully benefiting from CLIL programmes is still under-researched. In the current scenario, a very timely question is whether there may be a minimal amount of additional exposure to the TL through CLIL that is required for linguistic benefits to clearly show. The second purpose is to examine the issue of timing regarding the implementation of CLIL, specifically whether there may be advantages in an early provision or in a middle or late introduction of CLIL. Age cannot easily be disentangled from proficiency level in schools, and the question of whether there may be a threshold level that pupils should have attained before optimally benefiting from CLIL classes may be posed. The issue of the optimum initial proficiency level has been addressed in reference to university immersion (Klee and Tedick 1997; Lynch et al. 2001) and study abroad contexts (DeKeyser 2010), and it has been suggested that it should be beyond intermediate (see also Aguilar and Muñoz 2014). In

contrast, the issue of an optimum initial proficiency level for CLIL in primary and secondary education has not been addressed as an object of research yet.

At the start it must be noted that the analyses in this paper should only be considered preliminary for several reasons. The first is that in spite of the rapid spread of CLIL and the exponential growth of publications about CLIL in recent years, the issues of time and timing have not often been integrated in the design and hence there is a paucity of relevant empirical evidence. The second reason is that not many studies have taken quantitative measures of time, and even fewer have followed a control or experimental group design where different groups can be compared and gains attributed clearly to the CLIL intervention (see Pérez-Cañado 2012). Moreover, because published papers are often descriptive accounts of existing programmes, the initial comparability of the CLIL and the non-CLIL groups (in terms not only of initial proficiency level and motivation, but also in terms of family socio-educational background) has not been ensured, and selection effects have not been controlled for (see Dalton-Puffer et al. 2010; Rumlich 2013). Related to the issue of cohort matching, another relevant variable is out-of-school exposure and extracurricular FL classes (a common practice in countries such as Spain). It transpires from several studies that CLIL students are more likely to take extra English classes than their counterparts, which is almost certainly related to parental socioeducational status.

The present paper focuses on the time and timing issues in CLIL. It provides a non-exhaustive review constrained to studies with a quantitative approach to language gains in which two or more learner groups are compared. For reasons of space, a selection has been made of studies that provide explicit information about the time spent learning the FL, most of them conducted in Spain, probably because the provision of CLIL in this country is highly variegated and decentralised and, as a result, there is no homogeneity in terms of number of subjects taught through CLIL or its introduction (i.e. about time and timing) (see Lasagabaster and Ruiz de Zarobe 2010).

2 The Time Issue

Traditional classrooms are commonly considered limited in their provision of input and possibilities of contact with the FL. One specific consequence of this input limitation is an alleged ceiling effect for learning, which may be lower or higher in relation to the relative distance between the L1 (or the learner's linguistic repertoire) and the TL. As pointed out by Swain (1981), research evidence has revealed that there is not always a linear relationship between instruction time in an L2 and proficiency level attained (see Collins et al. 1999). It has been argued that breaking through this ceiling into the more advanced level proficiencies may be difficult if learners are not provided with immersion learning experiences (Rifkin 2005; Muñoz 2012). In contrast, an immersion setting, either a TL-speaking community or a bilingual educational programme, has the potential of providing the large amount of practice that is necessary for language automatisation processes to take place (DeKeyser 2007).

Such considerations are the basis for the increasingly extended practice of spending some time abroad in order to foster second language acquisition, as reflected in the fertile field of study abroad (see Llanes 2011). The large amount of input that is provided by an immersion experience leads naturally to incidental learning, which may play a major role in lexical learning. It is also conducive to implicit learning, which is argued to be advantageous to young learners (DeKeyser 2000; Muñoz 2006). In fact, it has been argued that in input-limited FL settings young learners do not enjoy the quantity of input needed for implicit learning mechanisms to operate. A consequence of these input limitations is that young learners are not able to capitalise on their implicit learning advantage. In contrast, in typical classrooms, older starters can make use of their superior cognitive development to learn explicitly, which explains their superior results in terms of faster rate of learning (García Mayo and García Lecumberri 2003; Muñoz 2006, 2008; Muñoz and Singleton 2011).

In consequence, CLIL may be considered an effective way to increase learners' exposure to the FL both to break through the alleged ceiling found for FL learners as well as to give them opportunities for implicit learning without the need for making changes to the time allotted to the different content-matter subjects in schools. In the following paragraphs a review of CLIL findings that bear on the time issue is presented with the aim of addressing the question of how much additional exposure through CLIL is necessary for linguistic benefits to show. As noted above, in this review only studies that have a comparative design will be included, although the effects of the increased exposure time variable cannot, in all of them, be separated from the effects of the CLIL variable. Nor can the effects of extracurricular exposure or initial comparability be controlled for.

Most of the studies in CLIL are conducted in secondary education. Lázaro Ibarrola (2012) compared two groups of Basque-Spanish bilingual learners of English at two different testing times, when they were in year 2 of secondary education (grade 8) at age 13, and then 2 years later at age 15. At time 1, the CLIL group ($n = 15$) had received 4 h of CLIL instruction per week in addition to the 3 h of EFL instruction for 1 year. The non-CLIL group ($n = 11$) had only received the 3 h of EFL instruction. At time 2, the CLIL group had received CLIL instruction for 3 years in addition to the regular English classes. Learners' oral narratives were elicited by a picture story. As expected, the CLIL group outperformed the non-CLIL group on a number of morphosyntactic measures, particularly at time 2, when the CLIL group had an additional 480 h. In another study, also of Basque-Spanish bilingual learners of English (age 15–16), Villarreal and García Mayo (2009) focused on different aspects of tense and agreement morphology. The CLIL students ($n = 27$) had had 1,120–1,155 h of class of English or in English (plus extracurricular classes) and the non-CLIL group ($n = 29$) had had 792 h. Though errors were infrequent in both groups, the CLIL students outperformed the non-CLIL students in terms of omission of affixal verbal morphemes. The CLIL students in this study had between 328 and 363 h of exposure more than the non-CLIL students. Similarly, in the study by Martínez Adrián and Gutiérrez Mangado (2009) the difference in exposure between the CLIL group and the non-CLIL group, both at age 14, was 363 h. The CLIL group did significantly better than the non-CLIL

group in some syntactic measures (e.g. production of embedded clauses) but not in others (e.g. production of null subjects).

The study by Gallardo et al. (2009) focused on the FL pronunciation of similar groups of CLIL learners and non-CLIL learners (14 participants in each) whose ages at the time of testing ranged from 14 to 16. The CLIL group had had an average of 980 h of exposure to English and the non-CLIL group an average of 721 h. Speech was elicited by means of the same picture story as in the previous studies. Their pronunciation was evaluated by five listeners in terms of foreign accent, foreign accent intelligibility and foreign accent irritation. Differences were not statistically significant for foreign accent, but judges found the CLIL students' accent more intelligible and less irritating than non-CLIL students' accent and differences were significant. In this case the time difference was 259 h.

Ruiz de Zarobe (2007) compared a CLIL and a non-CLIL group, in their 12th year of learning English (FL). The participants were 24 bilingual Basque-Spanish students who were 15–16 years old. The CLIL group had followed two CLIL courses in the last 2 years with a total of 1,358 instruction hours (FL lessons and CLIL lessons) up to the time of testing. The non-CLIL group had 1,148 h of FL teaching. Their oral proficiency in English was examined by means of the same picture story as in the previous studies. Analyses were made in five categories: pronunciation, vocabulary, grammar, fluency and content. Results showed no significant differences between the two groups in any of the five categories, which indicate that the additional 210 h of contact through CLIL may not be enough to impact proficiency, at least at this age and proficiency level. In another, longitudinal study, Ruiz de Zarobe (2008) compared three groups: non-CLIL (with only FL instruction), CLIL1 (one curricular subject was taught in English) and CLIL2 (two curricular subjects were taught in English). The groups varied in size ranging from 7 to 36 participants at different testing times. Using the same type of data and analyses as in the previous study, Ruiz de Zarobe compared the scores in the five categories three times, at age 14–15, 15–16 and 17–18. The CLIL2 pupils, with more instruction through English, obtained significantly higher results than the other groups in all the categories studied. In the age 14–15 comparison, when the non-CLIL group had had 695 h of instruction, the CLIL1 group 875 h and the CLIL2 group 910 h, the performance of the non-CLIL group was significantly lower than that of CLIL1 and CLIL2, but there was no difference between CLIL1 and CLIL2. The non-CLIL group had had 180 h less than CLIL1 and 215 h less than CLIL2, whereas there was only 35 h difference between CLIL1 and CLIL2. In the age 15–16 comparison, the more intensive CLIL programme (CLIL2) scored higher than the other groups in four of the five categories. In the age 17–18 comparison, with only the non-CLIL group and the CLIL2 group, differences were significant in only two of the categories. The longitudinal evaluation of the results of each group separately shows the expected positive relationship between grade or number of hours and linguistic outcomes except for CLIL1 at time 1 and time 2 (with a difference of 245 h), where there was no significant difference.

A study of the written production of these same groups of learners showed similar results (see Ruiz de Zarobe 2010), although CLIL benefits were more

modest, possibly due to a lack of writing competence in the first language, according to the author. Moreover, in this case there were significant longitudinal differences for all groups.

Roquet Pugès (2011) compared the linguistic progress in a CLIL programme and in a non-CLIL programme over 2 years. Participants were two groups of 50 Catalan-Spanish learners of English, a CLIL group and a non-CLIL group. These were compared on 11 linguistic measures (reading, listening and lexico-grammatical abilities) at two different times. At time 1, the CLIL group was in grade 7 (12 years) and the non-CLIL group in grade 8 (13 years). The CLIL group had a total of 70 h' more exposure to English than the non-CLIL group. At time 2, the CLIL group was in grade 8 and the non-CLIL group in grade 9 and the former had 140 h more than the latter. The results showed that CLIL was beneficial to the students' reading, writing (only accuracy) and lexico-grammatical abilities, but not to listening. Roquet Pugès concluded that the effectiveness of CLIL was confirmed but it did not suffice to improve the participants' overall linguistic competence, and that a longer course of study might achieve this.

Juan-Garau (2010) examined the oral fluency development in English of Catalan-Spanish bilinguals in secondary school. Participants were 27 EFL learners in grade 8 (ages 13–14), 16 of them in the CLIL group and 11 in a non-CLIL group. The former were exposed to approximately 180 h of English (90 h CLIL + 90 h of FL instruction) and the latter to 90 h of FL instruction per year. Results showed an overall tendency for the CLIL group towards improvement and sizeable learning gains in most measures.

A large-scale study is reported by Alonso et al. (2008). They compared the L2 proficiency of CLIL groups ($n = 159$) and control groups ($n = 70$) in years 1 and 3 of compulsory secondary education (grades 7 and 9) and year 1 of post-compulsory education (grade 11). Participants were Basque-Spanish students of English. After 2 years in a CLIL programme, students obtained higher results than students in mainstream education in both communicative and linguistic tests. However, the authors point out that there was a prior selection of students by schools and only those who proved to have high linguistic competence in English and Basque were admitted to the programme. Furthermore, these students had started learning English earlier than the control groups and they had frequent out-of-school activities in English. In sum, the effects of CLIL cannot be disentangled from the effects of time, prior to and during the experience.

Large-scale reports from other European countries yield similar outcomes. One illustration is the study by Várkuti (2010) with secondary students in grades 9–12 in Hungary. The CLIL group consisted of 816 students who had been exposed to English L2 for an average of 14.15 periods of 45 min per week (E/FL instruction and content subjects). The non-CLIL groups consisted of 631 students with an average of 5.30 periods of E/FL instruction per week. The author highlights that CLIL students were found to have a higher level of FL competence both for communicative and more cognitively demanding academic skills. Another large-scale study was conducted in the Netherlands by Admiraal et al. (2006) with students in the highest grade of secondary education. In this study the total number of participants was

1,305, of which 584 were participating in a CLIL (Bilingual Education) programme whereas 721 followed the regular programme. The authors report linguistic benefits for CLIL students over the non-CLIL students, the former having studied three subjects in English for 4 years. However, the authors also admit that there was no initial matching of the two cohorts.

One of the few studies that have examined CLIL experiences in primary education was conducted by Ruiz de Zarobe and Jiménez Catalán (2009). The researchers tested the receptive vocabulary of grade 6 (age 11–12) bilingual Basque-Spanish learners of English (FL) in two instructional contexts: CLIL vs. non-CLIL. The CLIL pupils ($n=65$) had had 960 h of exposure (including FL lessons as well as content-matter subjects taught in English since first grade). The non-CLIL group ($n=65$) had had 629 h of contact with English through the FL subject. Results showed significant results in favour of the CLIL students on receptive vocabulary. Similar results were obtained by Moreno Espinosa (2009) with the same two groups of sixth graders. The CLIL group, with their 331 h of additional exposure to English, showed significant gains over the non-CLIL group on vocabulary depth, but not on vocabulary size.

More evidence from grade 6 learners (11-year-olds in Cyprus) is presented by Xanthou (2011). Two short experiments with a pretest-posttest design are reported in her study. The first experiment included 31 children while the second involved 46. Two intact classes participated in each experiment, assigned respectively to experimental and control groups. Both had two 40-min English lessons a week. In addition, the CLIL groups had three 80-min science lessons a week over a period of 3 weeks. Results show an advantage for the CLIL groups in a vocabulary test that assessed students' knowledge of L1 equivalents to L2 lexical items related to content words of the science unit.

Other research findings from primary education that are relevant to the time issue have been obtained in the context of the European School (ES) system of multilingual education which may be considered a privileged instance of CLIL.[1] Housen (2012) reports on a comparison between four different learning contexts (one EFL context in Italy and three ES contexts in Italy, Brussels and England). The participants were young Italian learners of L2 English (grades 2–5) and curricular variables such as type, amount (250–270 h) and intensity of formal classroom contact with the

[1] The ES system aims at high levels of functional proficiency and literacy in at least two languages: the child's first language plus a L2, to be chosen from the three 'working languages' of the ES, namely French, English or German. In secondary school, ES pupils must further study a third language, and may choose to study a fourth language. The L2 is studied from grade 1 first only as a subject, and in grades 3–5 it becomes the medium of instruction and classroom communication for one to three 45-min periods a week in physical education and in an activities class called 'European Hours'. In these schools, as much as 30 % of the timetable can be carried out in the L2 in the last 3 years of primary school through the combination of L2-subject and L2-content teaching. In secondary school, students may choose several elective courses in the L2, and have as much as 60 % of their timetable in the L2 (see Housen 2012). In addition to the higher amount of exposure to the TL, it needs to be noted that in general ES teachers evince greater command of the language of instruction (see Pérez-Cañado 2012).

L2 were held constant. The comparison that is relevant here is that between the EFL context and the ES in Italy, because in neither was English (L2) used for communication in and outside the school. This comparison showed very similar results in terms of rate and outcome of L2 learning. This leads Housen to conclude that whatever advantages those ES pupils may have in terms of curricular or extra-curricular input and output opportunities for learning English, they do not appear to lead to faster grammatical growth or fluency development during the first 3 years of primary school (the ES context in Italy only appears to yield advantages in terms of lexical development). On the other hand, the Italian pupils in the ES schools in Brussels and England outperform these latter two groups, which Housen attributes to the use of English for communication inside the school and in the out-of-school context.

To finish, it must first be underlined that the different studies reviewed in this section, bearing on the issue of time in CLIL, illustrate the large contextual variability one can find in the different settings where CLIL is implemented. Time-related factors such as incidence of extracurricular FL lessons or additional opportunities for L2 exposure outside the classroom or in the wider environment mediate the impact of CLIL implementations (e.g. Seregély 2009; Housen 2012). The impact of other variables, such as linguistic distance from previous language/s to the TL, number of languages in the school system or quality of FL teaching, needs to be taken into account as well. In spite of all this, in the sample of studies reviewed above and similar studies some trends can be observed. First of all, differences between groups tend to reach statistical significance in those situations in which additional CLIL time surpasses 300 h (e.g. Moreno Espinosa 2009; Ruiz de Zarobe and Jiménez Catalán 2009; Villarreal and García Mayo 2009; Lázaro Ibarrola 2012), or an unquantified large number over many years (e.g. Admiraal et al. 2006; Alonso et al. 2008; Várkuti 2010; see also Hüttner and Rieder-Bünemann 2007; Zydatiß 2007). In contrast, when the number of additional hours is smaller, differences in outcomes between the groups do not always reach statistical significance or do only in some measures (e.g. Ruiz de Zarobe 2007; Roquet Pugès 2011; Housen 2012). These results are summarised in Table 1.

Incidentally, another trend that seems to emerge concerns the different length of time required to impact the various language dimensions. For example, in the case of pronunciation, a focused pedagogical intervention may be needed in conjunction with additional exposure time for a clearer benefit to be observed (Gallardo et al. 2009; see also Varchmin 2010); or in the case of syntax cognitive maturity may reduce the effects of time (Martínez Adrián and Gutiérrez Mangado 2009). As in other learning settings, receptive skills are ahead of productive skills and less time is often required for them to show sizeable learning gains (e.g. Jiménez Catalán et al. 2006). Finally, the findings by Housen (2012) also suggest that the amount of

Table 1 Time difference effects

Hours difference	Tendency of results
+300 h or unquantified large number over many years	CLIL > Non-CLIL
−300 h	CLIL = Non-CLIL

time needed for young pupils to make observable progress even in a partial immersion programme may be longer than expected. We turn now to the issue of age and timing.

3 The Timing Issue

In this paper, the main concern in relation to timing is when the optimal moment to introduce a CLIL programme may be, for example in primary or in secondary education. As noted above, older children and adolescents have been found to be more efficient learners than younger children in typical FL situations, and it has been suggested that this may be related to the different age advantage of younger and older learners, with respect to implicit learning and explicit learning, respectively (Muñoz 2006, 2008). The higher intensity of exposure to the TL provided by a CLIL programme may yield different results in that younger learners in CLIL will be likely to have more opportunities to use their implicit learning mechanisms to their advantage. An opposite prediction could be entertained that older learners in CLIL will be likely to benefit from the CALP skills developed in their L1 and use them in the CLIL subject to their advantage, which could impact the different language dimensions in distinct ways. Though evidence is scarce, a few studies where CLIL and non-CLIL groups or different CLIL groups differ in age and/or exposure begin to shed some light on this issue.

The report of the evaluation of a large-scale study of CLIL in Andalusia (Spain) by Lorenzo et al. (2010) includes findings that are relevant to the age issue. Participants in this study were 423 French learners, 143 German learners and 754 English learners, plus a control group of 448 pupils for the English L2 learners from grade 4 of primary education (aged 9–10) and grade 2 of secondary education (aged 13–14). As expected, the CLIL learners outperformed their mainstream peers on the four skills (listening, reading, writing and reading) after one and a half years of CLIL in three content subjects. However, an unexpected finding was that the CLIL English learners, who had only had one and a half years of CLIL instruction, reached equivalent proficiency levels as the French and German learners, who had been in the CLIL programme since the beginning of primary education. The authors suggest that middle or late introduction in CLIL programmes can result in competences similar to those obtained in early introduction, mirroring previous findings in French immersion programmes (Turnbull et al. 1998; Wesche 2002). Lorenzo and his colleagues attribute this finding to the increasing cognitive and meta-cognitive abilities and more advanced L1 academic proficiency that is typical of later primary or early secondary learners. Following from this, the authors suggest that later starts in CLIL can optimise resources.

A smaller-scale study but with an experimental pretest-posttest research design was conducted by Bret (2011). The participants were 32 Catalan-Spanish bilingual primary students, half of them in grade 5 and half in grade 6. In each grade, half of them made up the CLIL group and the other half the control group, yielding

8 students in each one of the four groups. The non-CLIL groups had only received the mandatory curricular English hours, whereas the pupils in the treatment group had followed CLIL lessons for three consecutive years besides the hours of regular EFL lessons, resulting in a total 105 additional hours. The results on two oral tasks (i.e. an interview task and a narrative task) were compared and the CLIL groups obtained higher marks in some measures but not in others. Interestingly, gains were mostly observed among the sixth graders and not so much among the fifth graders. The author concluded that CLIL seems to have a much clearer impact on the older pupils than on the younger pupils, which she attributed to students' cognitive maturity.

The study by Egiguren (2006) is different from the others in that it addresses the choice between an early non-CLIL start or a middle CLIL implementation, rather than the timing of CLIL itself. Egiguren compared two groups of bilingual Basque-Spanish students, the first one made up of students who started to learn English at the age of 4, and the second one at 8, but the latter also had 2 h per week of a content-subject taught in English. No differences were found when the participants' proficiency in English was compared at the age of 10. That is to say, in just a year and a half the late starters, who had been in a CLIL programme, had already caught up with the early starters, who had begun 4 years earlier.

Few studies have compared groups with different ages that were matched for exposure or instruction hours. Exceptions are the studies below, although in all cases the numbers of hours in the comparison groups are different. First of all, the study by Villarreal (2011) investigated the oral production of some features of verbal morphology in groups of CLIL and non-CLIL secondary students. Participants in this study were 134 Basque-Spanish bilingual learners of English. In the three comparisons with age-matched groups and different numbers of instruction hours, the CLIL students showed a slight advantage over the non-CLIL students. The former had received greater amounts of exposure at each comparison time (875–910 h vs. 693 h; 1,120–1,155 h vs. 792 h and 1,443 h vs. 990 h), as well as extra-curricular classes. However, when CLIL and non-CLIL students were matched for (approximate) number of instruction hours this advantage disappeared and the non-CLIL students even showed some advantage over the CLIL students. In a first comparison, between non-CLIL pupils (age 17–18) and CLIL pupils (age 14–15), the latter had received around 100 h less, but in the second comparison, between the same non-CLIL students and CLIL students (15–16), the latter had received 130–165 h more. Because at these comparisons the non-CLIL students were 3 and 2 years older, respectively, Villarreal suggests this result may be attributed to their superior cognitive maturity. This interpretation is reinforced by the fact that the focus of this study is verbal morphology, a CALP area in which CLIL effects may be weaker than age effects.

Also in the Basque Country, Lasagabaster (2008) included three groups in his study: a non-CLIL group in year 4 of secondary education (grade 10), with 3 h per week of FL instruction ($n = 28$; age 15–16); a CLIL group in the same grade who had participated in a CLIL programme 4 hours per week, that is a total of 7 hours of FL, for 2 years ($n = 113$); and a CLIL group in year 3 of secondary education (grade 9), who had participated in CLIL for 1 year and for 4 hours per week as well

($n=57$; age 14–15). Results showed that the CLIL group in grade 4 outstripped the same grade non-CLIL group in all skills and measures (after an additional number of hours close to 300; see above). Results also showed that the CLIL group in grade 3 (with an hour per week more for a year) obtained higher scores than the non-CLIL group in grade 4 in all tests except for listening, and differences were significant in overall English proficiency. Lasagabaster (2008) interprets the latter finding as evidence of the positive effects of CLIL over the older age advantage of the non-CLIL group. The study by Roquet Pugès (2011) commented on above is particularly interesting because it followed a pretest-posttest design including the age issue in its research questions. Specifically, this researcher asked whether at different ages and with a similar number of hours, younger learners receiving FL instruction and CLIL would benefit more than older learners only receiving regular FL instruction, on the assumption that 'the earlier the better' for CLIL instruction. To address this question, Roquet Pugès compared the CLIL group at time 1 (age 12), after a total amount of 1,330 h of English (regular and CLIL), and the non-CLIL group at time 2 (age 14), after 1,400 h of regular instruction (i.e. with 70 additional hours of instruction). Results show that the former were only significantly superior to the latter on a measure of written syntactic complexity. The non-CLIL students outscored the CLIL students in 7 of the 11 measures and differences were significant in listening and in accuracy in the written tests. No significant differences were found in reading and lexico-grammatical abilities. Roquet Pugès concluded that an older age counterbalances the positive impact of a CLIL programme and hence that, as in regular FL instruction, earlier is not better for CLIL instruction either. She also suggests that another explanation for the findings could be that the younger pupils had not reached the threshold level necessary to benefit from CLIL (see Pérez-Vidal 2011).

Research in the ES system has also conveyed interesting age-related findings where students have been matched for instruction hours. In the study by Schoonjans (2013), German learners of English in four schools were compared. Three of the schools were ESs: one in Germany, one in Brussels and one in Britain, and the fourth was a mainstream school in Germany. In the latter, the participants had started learning the FL at the age of 8 and were 13 when they took the tests. In the other three schools, the participants were German learners of English who had started learning English at the age of 6 and were 10 at testing. The four groups of learners had had 580 h of instruction when they were administered the tests. However, the three groups in the ES system had also had exposure to English as the medium of instruction in a number of subjects, as well as exposure to and interaction in English during the 'European hours', and in the case of the school in Britain also outside of the school. The results showed that the mainstream school learners, with a later onset age (8 vs. 6) and older chronological age at testing (13 vs. 10), obtained higher scores than the learners in the ESs in Germany and in Brussels in a test of general L2 proficiency, as well as in several measures of accuracy and lexical complexity. Nevertheless, their scores on fluency were lower than those of the learners in the ESs in Britain and Brussels. Schoonjans interprets these findings as showing that whereas the age advantage of the mainstream group—as well as possibly the teaching approach, though this variable is not studied—has a stronger

impact on general proficiency, accuracy and lexical complexity, the impact of L2 exposure on fluency outweighs the age/teaching effect. Thus, the contrast of the effect of age and the effect of exposure to the L2 beyond the TL instruction hours (which are controlled for) shows that the effect of age is stronger than the effect of exposure in the two ESs where the TL is used as the medium of instruction in the CLIL lessons but not as the means of communication outside the school. The period of time in this study (580 h of instruction or 3–4 years in which learners had received CLIL lessons in the ES system) did not appear to be long enough for the learners in the contexts in which there is no substantial exposure out of the school to compensate for the older learners' age advantage (the ES in Germany and Brussels).

In sum, this section has put together results reported in CLIL studies that have a bearing on the issue of the optimal time to begin CLIL lessons from the point of view of L2 acquisition. The different studies reviewed have offered a number of comparisons. First of all, the comparison of CLIL groups of different ages has revealed that older CLIL students benefit from CLIL more than younger CLIL students (Lorenzo et al. 2010; Bret 2011). Second, the comparison of CLIL groups and non-CLIL groups has yielded different findings according to exposure and age differences. With primary school pupils it has been found that older CLIL learners (beginning at 8) had a faster rate of learning than younger non-CLIL learners (beginning at 4), thus highlighting the effects of CLIL and of older age over an early start (Egiguren 2006). With secondary school pupils and a small age difference (1 year), the effects of CLIL in the younger pupils were seen to outweigh the effects of age in almost all measures (Lasagabaster 2008); but secondary school pupils with a 2-year difference showed a large advantage on the part of older non-CLIL learners over younger CLIL learners (Roquet Pugès 2011), or no advantage of CLIL learners when they were 2 and 3 years younger, even with more exposure (Villarreal 2011). When matched for hours of instruction, the effects of age were also seen to outweigh the effects of CLIL in the comparison of non-CLIL 13-year-old pupils with CLIL 10-year-old pupils (Schoonjans 2013). See Table 2 for a summary of these findings.

Results are mixed concerning the language dimensions examined in these comparisons. As expected, morphosyntactic complexity is improved further with older age and greater cognitive maturity (Villarreal 2011), but the effects of exposure are greater than the effects of age for fluency (Schoonjans 2013). However the results concerning the older groups' advantage in listening (Lasagabaster 2008; Roquet Pugès 2011) are intriguing, since CLIL could be assumed to be particularly beneficial for younger pupils' oral and aural skills in that they are less cognitively demanding than CALP skills, as noted above (Swain 1981).

Table 2 Age difference effects

Age difference only	Age and exposure differences
Older CLIL students benefit more than younger CLIL students	A tendency for older non-CLIL students to have a faster rate than younger CLIL students When age difference is 2+ years When matched for instruction hours

4 General Conclusions

This exploratory study has aimed to contribute to the discussion of time and timing in CLIL by examining existing empirical findings that bear on those issues. As expected, increased exposure to the TL through CLIL has yielded proficiency advantages, but the ranges of exposure that are necessary in the different contexts and for the different language dimensions remain to be more finely specified. In relation to the timing of CLIL, existing results seem to indicate that the acquisition rate of older pupils in CLIL is also faster than that of younger pupils, which may imply that a middle or late CLIL implementation is more cost-effective than an early one. As suggested above, it may be that older learners benefit from the cognitive-academic skills developed in their previous language/s and use them in the CLIL subject to their advantage. In addition, the conceptual demands in CLIL at older ages may constitute an effective challenge and push language development.

It may also be argued that the additional exposure provided by CLIL is not yet enough for the younger learners to show clear benefits (see Housen 2012). This would be consistent with findings from naturalistic immersion (Snow and Hoefnagel-Höhle 1978) and study abroad contexts (Llanes and Muñoz 2013; Muñoz and Llanes 2014) indicating that young learners require a substantial period of immersion before outperforming older learners. However, the questions posed here can only be appropriately answered when empirical evidence from experimentally controlled studies accumulates. It is hoped that further research into CLIL from a L2 acquisition perspective takes these aspects into consideration in order that results may inform policy makers on the most efficient FL teaching programmes in schools.

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Part II
Research on CLIL Education in Multilingual Settings

Learning English and Learning Through English: Insights from Secondary Education

Maria Juan-Garau and Joana Salazar-Noguera

1 Introduction

One of the most significant social changes in the last decades is the increment of opportunities for people to have contact with speakers of languages other than their own and thus become bilingual or multilingual, which in turn results in opportunities for both individuals and societies, as Auer and Wei (2009) contend. According to these authors, '[f]ar from being a problem, multilingualism is part of the solution for our future' (2009: 12). Based on this premise, this chapter aims at presenting relevant background information regarding: (a) the implementation of multilingual education plans in the areas under scrutiny, the Balearic Islands and Catalonia, and (b) the research conducted within the COLE (Combination of Contexts for Learning)[1] project, with a view to help readers interpret the empirical studies in Chapters 8–14 that form Part II of this volume.

The empirical data analysed in the chapters that follow have been gathered in the Balearic Islands (Chapters 8–13) and Catalonia (Chapter "CLIL in Context: Profiling Language Abilities"), two officially Catalan–Spanish bilingual territories in Spain, where a myriad of other languages are also present. Part II of the volume provides evidence of the implementation in these territories of Content and Language Integrated Learning (CLIL) approaches to education, reflecting the general European strategy towards multilingualism (see, e.g., European Commission 2003, 2005, 2008; Pérez-Vidal 2009, 2015b; Lasagabaster 2015) and, in particular, the overwhelming spread of such a strategy in Spain in recent times (for a detailed

[1] In Spanish, 'COLE' is also a colloquial form for *colegio* (school).

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presentation of CLIL in this country see Lasagabaster and Ruiz de Zarobe 2010). In the remainder of this first section, the general sociolinguistic situation in the Balearic Islands and—to a lesser extent—Catalonia is presented, while Section 2 describes the education policies deployed in these regions to promote individual plurilingualism in an increasingly multilingual society. Section 3 focuses on the description of the research on CLIL carried out by COLE project researchers. Finally, some concluding remarks are put forward.

The Balearic Islands form an archipelago situated off the Spanish north-eastern coast in the Mediterranean Sea. They have approximately one million one hundred thousand inhabitants. Spanish and Catalan share status as official languages in the archipelago. According to the latest sociolinguistic survey (Xarxa Cruscat 2011), 93.2 % of the population reportedly understands Catalan, the community's autochthonous language, while 71.5 % can speak it and 54.9 % can write it (see also Melià 2011a). The languages used to teach, learn and interact at the primary and secondary school levels in the Balearic Islands are: Catalan, whose teaching and use has been promoted thanks to normalisation policies; Spanish, the official State language; and English, the main foreign language.

The first two, Catalan and Spanish, are closely related Romance languages, which have been in contact for years in the Balearic Islands resulting in linguistic interaction between them, with the influence of Spanish on Catalan being more perceptible than that of Catalan on Spanish due to the former language's weaker sociolinguistic position (Melià 2011a, b). Virtually every Catalan speaker in the community is bilingual in Catalan and Spanish, thus, Catalan—unlike Spanish—has no monolingual speakers.

Over the last decade, the Balearic Islands have welcomed a large number of immigrants with diverse linguistic origins. In fact, roughly half the population (53.7 %) was born in the archipelago, while a fourth (24.5 %) corresponds to newcomers from beyond Spanish borders and the remaining percentage (21.8 %) to internal immigration (Govern de les Illes Balears 2012a), placing the Balearic Islands among the regions with a higher rate of immigrants in the European Union. For most of these newcomers, Spanish has been the first language option when interacting with the local community. In fact, Spanish-speaking immigrants amount to 40.4 % of the total immigrant population in the Balearic Islands (Xarxa Cruscat 2011). They are followed by speakers of other Indo-European languages, such as English and German (31.8 %), and by speakers of other Romance languages, such as Romanian (14 %). Other world languages hold minor percentages. The Education Department facilitates the integration of immigrant children into the autochthonous culture of the Balearic Islands through the implementation of specific learning programmes to that end.

As regards the position of the English language, it is generally regarded as a foreign language by the majority of the population, despite the fact that there are numerous English-speaking residents (9.2 % of the total immigrant population) and tourists in the Balearic Islands. The study of a second foreign language, usually German or French, can be introduced as from the last cycle of primary education (ages 10 and 11). It is not compulsory, but fairly common, especially in secondary education. Despite the affluence of English speakers in the archipelago and the fact

that tourism concentrates most of the economic activity in the Balearics (Govern de les Illes Balears 2013a), attainment levels in English at the age of 16—end of compulsory secondary education (CSE)—are far from satisfactory. A recent report conducted by the Government of the Balearic Islands (Govern de les Illes Balears 2013b) shows that by the end of CSE only 37.5 % of the English learners in the archipelago have consolidated their communicative competence at the intermediate level, while 27.3 % are in the process of so doing and 35.1 % exhibit low or very low levels. By comparison, these learners perform much better in the two official languages, as can be expected, with over two-thirds of respondents showing communicative competence at an intermediate level—or above—and highly comparable degrees of attainment in Catalan (69.8 %) and Spanish (69.4 %).

The *First European Survey on Language Competences* (European Commission 2012) enables us to put the results just mentioned in relation to English competence into perspective. According to its final report, which gathered information on the foreign language proficiency of approximately 54,000 students (ages 14 and 15) across 16 European countries, Spanish students ranked third on the low-level end with regard to the proportion of participants that reached CEFR (Common European Framework of Reference for Languages) intermediate levels (B1 or B2). If we additionally take into account that, generally speaking, education indicators in the Balearics do not fare well when compared to the same indicators in the rest of Spain (e.g. the Balearic Islands held the lowest graduation rate in the country at the end of CSE as mentioned in the ISEIB 2011 report, Govern de les Illes Balears 2012b), it can be surmised that Balearic learners' English competence by the time they finish CSE is certainly below the European average.

Catalonia lies on the north-eastern coast of Spain. It is the largest and most populated of the territories in the Catalan-speaking area with a population of around 7.5 million inhabitants. According to the last official survey (Xarxa Cruscat 2011), 96.1 % of the population reportedly understands Catalan, the community's autochthonous language, while 80.9 % can speak it, and 63.9 % can write it.

As in the case of the Balearic Islands, education in Catalonia involves mostly three languages: Catalan, Spanish and English. The first two languages are official, while English is largely a foreign language not generally spoken in the environment, even though increasing internationalisation, particularly in the Barcelona metropolitan area and touristic resorts along the coast, has brought in a considerable English-speaking community.

Concerning language use in schools, legal orders establish Catalan as the main language of instruction in non-linguistic subjects. It is estimated that around 90 % of the teaching in primary schools is conducted in Catalan, a figure that goes down to roughly 50 % in the case of secondary education (Vila 2008).[2] Newly arrived

[2] By comparison, the use of Catalan as the language of instruction in the Balearic Islands is not as firmly established, particularly in primary education. Vila (2008) indicates that 57 % of primary schools use Catalan as the medium of instruction, while 26 % have a predominance of Catalan over Spanish, and the remaining 17 % just comply with the minimum requirement established for Catalan. According to this author, in secondary education the situation is better in that Catalan is used to teach between 60 and 80 % of the subjects.

students are entitled to receive special assistance with the autochthonous language. The foreign population in Catalonia constituted 15.7 % of the total population in 2012 (Idescat 2013). Almost 5 % of these immigrants are children and adolescents.

A recent report (Generalitat de Catalunya 2013) reveals that, by the end of CSE, most students have intermediate or advanced levels of competence in both Catalan and Spanish, with highly comparable mean scores (76.0 and 76.6, respectively), while their competence in English, with an average score of 69.8, lags a little behind. In the case of English, understandably, there is a higher proportion of learners with low or low-to-intermediate levels than in Catalan or Spanish. Students prove stronger in the foreign language as far as their receptive skills (i.e. listening and reading) go in comparison to writing.[3] The adoption of language policies geared towards educating plurilingual individuals in Catalonia and the Balearic Islands is discussed in the next section.

2 Multilingual Education Policies in the Territories Studied

2.1 The Balearic Islands

Basically since the Language Normalisation Act of 1986 was passed, stating that all schoolchildren should be able to use Catalan and Spanish correctly at the end of their compulsory education, Catalan started to progressively gain ground as the medium of instruction in the Balearic Islands. The language education model in the archipelago has thus been bilingual for nearly three decades in the sense that subject content is taught through two languages (Baker 2009). Hence, non-linguistic subjects are often taught through the medium of Catalan, so as to restore its rightful position as the community's autochthonous language, but also through Spanish. The proportion of Catalan/Spanish used in instruction, however, varies according to school type. State-run schools teach mostly through Catalan, while semi-private and private schools make comparatively more use of Spanish as the vehicle to transmit subject content (Consell Escolar de les Illes Balears 2009). At any rate, all schools had to transmit at least 50 % of all content subjects in Catalan (Decree 92/1997 of 4 July, known as 'Decree of Minimums') until very recently, as will be explained below. In addition to the community's two official languages, an increasing number of schools have been introducing a third language—English with few exceptions—as the medium of instruction of content areas. We can therefore talk about a multilingual language education model, as Cenoz (2009) defines it, being implemented nowadays. The development of multilingual programmes throughout time is described next.

Two primary state schools, *Na Caragol* in Artà (Majorca) and *Sa Graduada* in Maó (Minorca), started what was referred to as an 'English Section' in 1996 and

[3] Learners' speaking abilities were not tested as the population examined was very large (64,769).

1997, respectively, within the agreement between the Spanish Ministry of Education and Science and the British Council to develop an integrated Spanish-English curriculum. These English Sections constituted a pioneer CLIL initiative in the Balearic Islands at the time, which has continued to develop in the two aforementioned primary schools and has additionally expanded to their associated secondary schools, IES *Llorenç Garcias i Font* (Majorca) and IES *Cap de Llevant* (Minorca). Successful as its outcome has been (see Dobson et al. 2010),[4] this CLIL model is rather costly and has not spread further in the archipelago.

The possibility of an alternative model allowing for content-based foreign language teaching was first introduced by Decrees 119/2002 and 120/2002 (Conselleria d'Educació i Cultura 2002a, b). This model, known as the 'European Sections' programme and described below, was first launched as a pilot experience with 14 European Sections being implemented at primary and secondary education schools in the academic year 2004–2005 and it has grown exponentially since then. At present over 160 schools participate in this scheme, which has lately been subsumed under a new multilingual plan as explained below. European Sections have been implemented mostly at the primary school level, followed by compulsory secondary education. In recent times, they have started to appear in post-compulsory secondary education and vocational studies (see Pérez-Vidal and Juan-Garau 2010 for an account of CLIL programmes at different educational levels in the Catalan-speaking area). The foreign language chosen in primary education has always been English, while in secondary education there have also been some European Sections in French and, to a lesser extent, German.

As regards programme characteristics, according to the Order of 17 June 2009 (Conselleria d'Educació i Cultura 2009), a new European Section can be started to teach any non-linguistic area, subject or module of the curriculum totally or partially in the foreign language chosen. In primary schools, European Sections can be initiated as from year 1 (ages 6 and 7). In secondary education, a European Section in English can also be initiated as from year 1 (ages 12 and 13), while Sections in other languages can start in year 3 (ages 14 and 15). Learners need to have at least one hour per week of non-linguistic subject content delivered through English. Content teachers taking part in the programme need to prove a competence level in the foreign language equivalent to level B2 of the CEFR or above. Coordination between all the professionals involved in the programme and in particular between the content and foreign language specialists is emphasised. Conversation assistants, if available, help learners to improve their interaction skills in the target language.[5] In-service training for teachers joining the programme is prioritised. It includes

[4] Key programme characteristics include an early start (3/4 years of age), a whole-school approach, a significant amount of curricular time being allocated to teaching content subjects through English (40 % roughly), and the presence of supernumerary teachers—often native English speakers—to support the programme.

[5] Schools with European Sections are at an advantage in the assignment of a conversation assistant by the Education Department (i.e. *Conselleria d'Educació i Cultura*).

courses aimed at improving teachers' linguistic competence in English and CLIL methodology sessions.

As mentioned, European Sections have recently been subsumed under a new plurilingual education plan known as 'Integrated Treatment of Languages' (*Tractament Integrat de Llengües*, TIL). This plan, regulated by Decree 15/2013 (Consell de Govern 2013), was launched in the academic year 2013–2014. It introduces a major change with regard to the time allotted to the different languages of instruction in the curriculum. In so doing, it overrides the aforementioned 'Decree of Minimums' and proposes a trilingual policy based on equating, as far as possible, the presence of Catalan, Spanish and English in the transmission of curricular content.[6] Another significant difference with former CLIL programmes is that TIL is meant to be generalised to all schools and learners in the Balearic Islands except for higher-education institutions, which design their own language policies. The plan espouses a CLIL approach so as to attain adequate linguistic competence levels for learners to communicate effectively in the community's two official languages and at least one foreign language, preferably English. To partake in this scheme, content teachers are expected to hold a B2 level certificate in the foreign language or above.

TIL has encountered strong opposition from the education community as well as from ample social sectors on the grounds that both teachers and learners would first need to be linguistically prepared to meet the plan's challenges and that it poses a threat to the community's autochthonous language, among other considerations. As a result, a large number of schools have shown reluctance to take TIL's provisions on board, casting doubts on the outcomes of this multilingual plan. Given this state of affairs, The Supreme Court of the Balearic Islands has suspended the application of TIL as it stands (24 September, 2014). Multilingual programmes, however, are most likely to go ahead in the Balearics in future, possibly with redefined goals and designs.

2.2 Catalonia

In 2005, the Catalan Education Department launched the 'Plan of Action for the Promotion of Third Languages' in compulsory education (*Pla d'Impuls a les Terceres Llengües*). This large-scale plan was an unprecedented initiative in the history of policies to promote foreign languages in Catalonia. It included four main strands, one of which was the 'Experimental Foreign Language Plan' (*Pla Experimental de Llengües Estrangeres*, PELE), which sought to promote integrated school projects (CLIL plus project-based, orally focused modalities). This plan was a natural continuation of the 1999 CLIL ORATOR scheme, with

[6] A former attempt at implementing a similar trilingual plan was made in 2006. Decree 52/2006 (Conselleria d'Educació i Cultura 2006), known as 'Trilingualism Decree', was quite strongly contested as many feared that its enforcement would make Catalan lose ground. It was finally revoked on 6 June, 2008.

English as the main language (Pérez-Vidal and Escobar 2002). Earlier accounts of CLIL in Catalonia can be found in Pérez-Vidal (1997), Navés and Muñoz (1999) and Pérez-Vidal and Juan-Garau (2011b).

The 2005 plan has been given further impulse under the current 'Framework for Plurilingualism in Catalonia' (*Marc per al Plurilingüisme a Catalunya*), introduced in 2013 and addressed to state-funded schools. This framework has as its main goal the attainment of adequate competence levels in the different languages studied—namely Catalan, Spanish and at least one foreign language (mostly English), but preferably two. It attempts to meet the objectives set by the Europe 2020 strategy by helping learners reach B1 and A2 levels in their first and second foreign languages, respectively, at the end of CSE and upgrading those levels to B2 and B1 in post-obligatory secondary education. The framework also intends to consolidate Catalan's prominent position as the main language of teaching, while enhancing foreign language teaching, as mentioned, and giving increased visibility to the heritage languages of newcomers. Possibly the main strand within this framework is the so-called Integrated Foreign Language Plan (*Pla Integrat de Llengües Estrangeres*, PILE). The PILE plan builds on PELE and other such previous initiatives to further the development of successful CLIL approaches in Catalonia. It is a pilot plan that progressively increases the presence of foreign languages in the curriculum ranging from at least 12 % of curricular content delivered through the foreign language in primary education to a minimum of 18 % in post-obligatory secondary education. In 2010–2011, as many as 1,345 infant or primary ($n=1002$) and secondary education ($n=343$) schools in Catalonia participated in a PELE programme including post-compulsory education and vocational studies, while 170 infant/primary ($n=99$) and secondary education ($n=71$) schools have joined a CLIL scheme following the first PILE call (2012–2013). All in all, with the experience already accrued with CLIL approaches and the new framework proposed, Catalan authorities are trying to move forward in response to the common European objective of making plurilingualism a reality.

3 The COLE Project

The present section attempts to provide descriptive information against which to interpret the results included in the second part of this volume (Chapters 8–14). These chapters specifically seek to measure the benefits, regarding the acquisition of communicative competence in English, derived from content-based language learning environments implementing a CLIL approach in comparison with formal instruction contexts in multilingual secondary education settings, and to provide some insights into learners' affective variables. First of all, we provide a general overview of the COLE project, stating its general objectives, to subsequently give an account of all the relevant methodological information related to the participants and the collection of the data—analysed in the aforementioned chapters—which have been gathered as part of this project.

The COLE project is an ambitious and innovative research endeavour directed at comparing and contrasting the differentiated impact of three contexts of foreign language acquisition: conventional formal instruction (FI), the content and language integrated learning approach (CLIL) and study abroad in countries where the target language is spoken (SA). These are learning environments that increasing numbers of students experience throughout their education, often in combination. Therefore, investigating their complementary effects and benefits is of utmost relevance not just to families and to students themselves but also to programme administrators, language policymakers and society at large. Nevertheless, to our knowledge, no other project has focused on the complementarity of conventional foreign language instruction, CLIL and sojourns in the target-language country—taking on board the learners' various language learning, personal and social experiences—which underscores the new perspective envisaged by COLE researchers in trying to fill this gap. These programmes, particularly CLIL and SA, can be regarded as stepping-stones that can help students to communicate successfully in the international arena in a progressively globalised world. They are in fact anchored in European multilingual policies that favour internationalisation both at home and abroad (see Pérez-Vidal 2015b for a thorough account of such policies). Thus, the COLE state-funded project, based in Catalonia (Universitat Pompeu Fabra) and the Balearics (Universitat de les Illes Balears), reflects the vision just presented. Its coordinator and main researcher in Catalonia is Carmen Pérez-Vidal, while the main researcher in the Balearics is the first author of this chapter. The project attempts to uncover the linguistic and emotional impact of these three learning environments in the acquisition of English in bilingual (Spanish–Catalan) territories where various languages and cultures coexist. As mentioned in the previous paragraph, in the remainder of this volume we will present some of the main findings of the COLE project concerning the contrast between CLIL and FI learning contexts in secondary education settings. COLE project results as regards the SA context of acquisition in comparison with FI at the tertiary education level have recently appeared in another edited volume (Pérez-Vidal 2015a).

The COLE project builds on a previous project (SALA: Study Abroad and Language Acquisition), which compared the linguistic and sociocultural benefits of two learning contexts, SA and FI, in the short and long term, among university students followed longitudinally over a 2.5-year span (for a detailed account see Pérez-Vidal and Juan-Garau 2010; Pérez-Vidal 2015a). COLE expanded our previous research scope by collecting data from secondary education students in order to establish the relevance of initial language competence in subsequent language acquisition. With a view to improving foreign language competence—especially in English—more and more institutions in the Catalan language area and the rest of Spain, following European multilingual recommendations, had begun implementing CLIL language learning programmes (Pérez-Vidal and Juan-Garau 2010; Lasagabaster and Ruiz de Zarobe 2010). Hence, when the COLE project was launched (2007), it was also decided to include this content-based learning context in the study. Thus, with the COLE project, our aim was to further knowledge regarding language acquisition processes in different educational environments and to unveil the individual and contextual variables that boost or hinder these processes (Collentine and Freed 2004) so as to provide a rigorous, evidence-based

foundation for channelling human and monetary resources into a field of tremendous global relevance.

Within the COLE project, it was hypothesised that there would be a gradation or continuum of learning contexts ranging from instructed to naturalistic acquisition settings, with FI standing at the instructed end of the continuum, SA immersion at the naturalistic end and CLIL semi-immersion somewhere in between (see Pérez-Vidal 2011; Juan-Garau 2012). That is, SA—which is an essential part of European mobility policies (see Pérez-Vidal 2011, 2013)—would be expected to provide greater contact with the target language through natural, abundant exposure (Freed et al. 2004; DuFon and Churchill 2006; DeKeyser 2007; Regan et al. 2009), while FI would provide eminently formal, classroom focus on form but reduced language communication opportunities (DeKeyser 2000). In turn, CLIL instruction, a context encompassing both focus on meaning and form, would lie between FI and SA. This is so given that, although the CLIL class is essentially communicative, target-language exposure is often limited to the school context (Escobar Urmeneta 2006; Dalton-Puffer 2007; Lyster 2007; Pérez-Vidal 2007; Lasagabaster 2008; Ruiz de Zarobe and Jiménez Catalán 2009; Salazar-Noguera and Juan-Garau 2009; Lorenzo et al. 2010; Ruiz de Zarobe and Lasagabaster 2010; Llinares et al. 2013). Within the gradation hypothesis, the COLE project defends the combination and complementarity of the three learning contexts—FI, CLIL and SA—stating that each one affords different benefits and has a distinct learning potential that can often be activated in the other two. If the three learning contexts are present in a given language learner, this combined multilingual language profile will, ultimately, constitute an added value for career development. The project also advocates and studies virtual communication environments to foster the acquisition of English since they have become widespread at a social and educational level and they provide opportunities for internationalisation at home when SA periods are not feasible (see Jacob 2013; Prieto-Arranz et al. 2013; Pérez-Vidal 2015b). Finally, the project analyses language practice through the different contexts and its impact on employability (Alred and Byram 2002; Pérez-Vidal 2009; Moratinos-Johnston et al. 2014).

3.1 COLE Project Research Design

In this section we focus on the description of the COLE project research design, including participants and data collection procedures, pertinent to the analysis of the CLIL and FI contexts at the secondary school level, which is at the centre of this second part of the book. The COLE project uses a complex pre-test post-test longitudinal design to measure language abilities in English as a foreign language (EFL) as well as affective factors. Two cohorts of adolescent participants have been involved. They have either received a FI treatment on its own (control group) or a treatment that combines FI and CLIL (experimental group).

Both quantitative and qualitative data have been collected. On the one hand, quantitative data, which gauge participants' language proficiency, have provided insights into the COLE gradation hypothesis regarding the gains afforded by the

learning contexts under scrutiny. On the other hand, qualitative data have enabled us to enquire into individual learner differences relating to affective variables and programme characteristics. Qualitative data have been gathered through various instruments including questionnaires to enquire into participants' linguistic profiles; learner attitudes, beliefs and motivation; participants' linguistic practice and degree of contact with the target language and teachers' opinions regarding CLIL implementation. In our data analysis, the level of linguistic and affective impact has been the dependent variable and participation in the different language acquisition contexts, the independent one. Factors such as initial degree of proficiency and hours of exposure to the target language have also been scrutinised.

3.1.1 Participants

Regarding the COLE participants that we will report on in this second part of the volume, they are all bilingual Catalan–Spanish students, aged 13–16, for whom English is their main foreign language and hence generally constitutes their L3. They have neither exposure to English in their family environment nor a language disability.

The secondary school sample has been gathered from students participating in the European Sections programme in the Balearic Islands and a CLIL programme in Catalonia, as described in Section 2. Within the context of the Balearic Islands, data have been collected from a total of nine secondary education schools in Majorca,[7] which encompass EFL classrooms taught through FI instruction along with CLIL science or social science lessons delivered through English. These institutions are located in both urban and rural environments, thus providing a representative sample of schools on the island. In Catalonia, data were collected at a semi-private school that designed its specific CLIL programme in collaboration with research experts (see Chapter "CLIL in Context: Profiling Language Abilities").

3.1.2 Data Collection Times

As shown in Table 1, longitudinal data for the main teenage sample covers a three-academic-year period. Data collection started at the beginning of the second year of CSE (T1), when students were 13 years old, coinciding with the onset of the CLIL programme. Data were collected again at the end of the second, third and fourth years (T2, T3 and T4, respectively).

3.1.3 Data Collection Instruments

As for the specific research tools used to collect the aforementioned data, a total of 13 tests and six questionnaires were administered in the same way at every research time. The battery of tests (see Table 2) was used to measure oral production and

[7] These include six secondary state-run schools and three semi-private schools.

Table 1 Secondary school data for FI and CLIL acquisition contexts

Data collection times	Secondary school data			
	Beginning of second CSE	End of second CSE	End of third CSE	End of fourth CSE
	T1	T2	T3	T4
FI context	Start of academic year	Formal Instruction (1 academic year)	Formal Instruction (1 academic year)	Formal Instruction (1 academic year)
CLIL context	Start of academic year	CLIL + Formal Instruction (1 academic year)	CLIL + Formal Instruction (1 academic year)	CLIL + Formal Instruction (1 academic year)

Table 2 Data collection instruments

	Data collection tests
Written comprehension	General reading test
	Specific reading test (science)
	Specific reading test (social science)
Written production	General written composition
	Specific written composition (science)
	Specific written composition (social science)
Oral comprehension	Listening comprehension (picture identification)
	Listening comprehension (news)
Oral production	Reading aloud test
	Role-play
	Oral narrative
Lexico-grammatical knowledge	Cloze
	Fill-in-the-gap tense-and-aspect test

comprehension, written production and comprehension and lexico-grammatical knowledge.[8] According to DeKeyser (2007), each context involves distinct linguistic benefits. Therefore, it makes sense to assess foreign language development through tools that evaluate the linguistic skills separately. The project adopts tests that both analyse discrete linguistic items as well as general items of linguistic knowledge (see Pérez-Vidal 2015a).

Regarding written comprehension, three tests were elaborated, one general reading test and two specific tests in accordance with the participants' content subject studied through the medium of English, either science or social science (history and

[8] Chapter "English Learners' Willingness to Communicate and Achievement in CLIL and Formal Instruction Contexts", given its focus on willingness to communicate (WTC), used specific instruments to measure that variable (i.e. WTC Scale and WTC-Meter), while Chapter "CLIL in Context: Profiling Language Abilities" used slightly different instruments to measure linguistic competence. Information on the instruments used is duly provided in both chapters.

geography). Each test, which had to be completed in 15 min, measured overall reading comprehension as well as various linguistic areas including grammar, discourse, syntax and lexical semantics. The general reading test consisted of ten multiple choice questions regarding information encoded in short written messages. Both specific reading tests included six true-false questions, which required a correction of the statement in case it was false, as well as a vocabulary task in which learners were asked to match words with their corresponding definitions. The science reading test dealt with reusing and recycling, while the social science test was related to the topic of moving from a rural to an urban environment.

Two tests were used to assess overall written production. A first general test asked students to write an email to an English friend, telling him or her about a film they had seen the previous weekend. They were requested to write, within a 25-min time span, their stories in the past and to include information related to the title, storyline, place, time, characters and personal opinion on the film, in addition to explaining what they had done afterwards. Participants were also required to write a short text on a topic related to the content subject they were studying through English. Specific written production tests were assigned 15 min each. The specific written composition for the CLIL science group dealt with the issue of recycling waste materials, whereas the specific written test for CLIL social science learners was about the advantages and disadvantages of urban life compared to the countryside.

Two listening tests, a picture identification test and a test based on four news items, assessed overall listening comprehension. The picture identification test included ten multiple choice questions and the news items test had to be answered by choosing the correct option from multiple choice items related to the four news stories recorded.

Oral production was assessed through three tests: a reading aloud test which consisted in reading a 200-word text aloud individually and assessed individual oral performance, mainly foreign accent, pronunciation errors and comprehensibility; a role-play, which assessed oral interaction in pairs; and an oral narrative with six picture prompts related to a bank robbery. The oral narrative test was individual and students had to tell the story as if they were reporting it, explaining what they had witnessed. Recordings for each participant or dyad, in the case of the role-play, were carried out in all oral production tests so as to evaluate different aspects of oral competence.

The cloze, with 15 items, and the fill-in-the-gap tense-and-aspect test, with 12 blanks, measured the students' lexico-grammatical competence in the foreign language.

Data collection instruments also included questionnaires, which were used to learn about participants' linguistic profile and also about their attitudes, beliefs and motivation with regard to learning languages and learning a content subject through the medium of English (CLIL). Likewise, questionnaires were distributed to the teachers in each of the FI and CLIL settings so that the different features of each programme could be documented. The following questionnaires were administered:

- Students' profile questionnaire
- Students' questionnaire on attitudes, beliefs and motivation (ABM)

- CLIL teachers' questionnaire
- FI teachers' questionnaire
- CLIL programme school coordinator questionnaire
- School headmaster questionnaire

Upon requesting informants to get involved in the project, they were informed about the fact that their anonymity would be preserved and that their final scores on all language tests would not sway their academic qualifications. Data were collected following written protocols for each task to ensure reliability and consistency in administration procedures at all data collection times. Accordingly, all tests were timed.

Regarding the validity of the tests used, they were all piloted with populations comparable to our target sample and adjusted when necessary. These tests enabled us to assess participants' linguistic skills in the two learning contexts scrutinised (FI and CLIL) and, as such, they are regarded to have been effective and ecologically valid in that they resembled the tasks learners are often asked to do in their English lessons. Further descriptive information on the specific research tools employed in the different chapters that follow is provided therein.

3.1.4 Overview of Findings

The empirical findings embedded in the second part of this book constitute part of the results from the COLE project and mainly touch upon the effects of the CLIL context compared longitudinally with the formal instruction context in the development of secondary education students' receptive skills (listening and reading), productive skills (writing and speaking) and lexico-grammatical competence in English. Affective factors are also considered. More specifically, Chapter "Testing Progress on Receptive Skills in CLIL and Non-CLIL Contexts" reports on the development of reading and listening comprehension skills, while Chapters "Writing Development Under CLIL Provision" and "Does CLIL Enhance Oral Skills? Fluency and Pronunciation Errors by Spanish-Catalan Learners of English" delve into the productive abilities by examining whether CLIL has a positive effect on the development of written competence and oral skills—with a focus on fluency and pronunciation errors—respectively. Chapter "Lexico-Grammatical Development in Secondary Education CLIL Learners" looks at lexico-grammatical growth. Chapters "Exploring Affective Factors in L3 Learning: CLIL vs Non-CLIL" and "English Learners' Willingness to Communicate and Achievement in CLIL and Formal Instruction Contexts", in turn, enquire into the development of affective factors, with the former focussing on motivational and attitudinal factors and the latter on willingness to communicate and its relationship with language achievement. Finally, Chapter "CLIL in Context: Profiling Language Abilities" provides evidence of the differential effects of CLIL on various areas of communicative competence. Overall, these findings point to an advantage in terms of linguistic progress for students that combine CLIL and FI over participants who learn English through FI exclusively.

4 Final Remarks

This chapter has provided an account of the multilingual education policies implemented in the communities where the COLE project, a state-funded research endeavour based in Catalonia and the Balearic Islands, takes place in the light of the strategies deployed in the rest of Spain and Europe. In fact, the educational experiences and research findings reported herein can inform similar experiences in comparable territories—such as the Basque Country, Galicia, Valencia, Friesland, Wales or Ireland—where multilingualism in education is encouraged (Cenoz and Gorter 2010; Gorter and Cenoz 2011). It has been shown that Catalonia and the Balearic Islands are putting into practice the European recommendations on multilingualism both through top-down and bottom-up educational initiatives, such as the implementation of content-based language learning approaches, particularly CLIL.

The COLE project has attempted to further knowledge through this volume concerning the impact of content-based instruction, following a CLIL model, in contrast with conventional foreign language instruction (FI). All in all, our research in this volume uncovers the performance and achievement of secondary-school students learning English in multilingual educational environments, where content-based language learning policies are in place, over a 3-year-period. In so doing, we intend to contribute, on the one hand, cutting-edge data regarding linguistic benefits in the contexts mentioned and, on the other hand, new insights into the implementation of CLIL models—an area where further research is clearly needed—and into possible ways of channelling resources in order to improve language learning models at large.

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Testing Progress on Receptive Skills in CLIL and Non-CLIL Contexts

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1 Introduction

Content and language integrated learning (CLIL) has expanded exponentially in Europe in the last 20 years or so (Dafouz-Milne 2007; Coyle et al. 2010: 8), and Spain has become a CLIL power in terms of both practice and learner outcome research (Coyle 2010: viii).

At the same time, an increasingly visible line of research involves exploring the differences between ordinary second language acquisition (SLA) and the acquisition of further languages. In particular, bi- or multilingualism has been noted as an advantage as far as "metalinguistic awareness" is concerned (Klein 1995). Thus, multilingual subjects have been perceived as individuals with more linguistic resources than mere monolinguals (Cenoz and Gorter 2011: 358–359), which may have a positive effect on the additional language acquisition process (EF 2012: 22). Other researchers have suggested that the learning of an additional language is boosted when the speaker already speaks more than one (Vuorinen 2009; see also Clarke 2009: 7). In this respect, Jarvis (2015) distinguishes two factors that contribute to this advantage, namely "the cognitive consequences of bi- or multilingualism"—resulting in greater metalinguistic awareness—and "crosslinguistic influence", that is, the particular effects of the language(s) already spoken on the learner's acquisition of an additional language.

This may in turn involve particularly useful effects in the specific field of receptive skills in an additional language such as attentional control. Furthermore, positive consequences of crosslinguistic influence may have an impact on the learners' command of, for example, vocabulary in an additional language, which

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would once again clearly affect their receptive skills in this language. However, a word of caution is required here since Jessner (2008) reminds us that multilingualism is a complex, not always linear, phenomenon that may develop in significantly different ways across individuals.

Finally, Jarvis (2015) crucially concludes that CLIL may have "the potential to complement and perhaps even magnify the positive effects of having learned a non-native language prior to learning an L3". The popularity of CLIL is in part related to its claims to provide "the necessary language support alongside the subject specialism" (Graddol 2006: 86). In fact, practitioners have persuasively argued for the possible language benefits that could be obtained from CLIL approaches. There is indeed a sound theoretical foundation behind these. Thus, from a cognitive constructivist perspective, CLIL encourages learner autonomy, self-organisation and self-responsibility (Wilhelmer 2008: 20–21). This has led to claims that CLIL students cognitively process their L2 at a deeper, more intense level (Aliaga 2008) and that CLIL may positively contribute to the development of metalinguistic awareness (Marsh 2009), all of which could prove beneficial in cognitively demanding activities such as listening in a language other than one's own (Liubinienė 2009). This also has powerful implications should a CLIL methodology be combined with bi- or multilingual learners.

CLIL has also been found to comply with some of the main tenets of Krashen's influential acquisition theory (1987): CLIL may be seen to provide an authentic context that should encourage "acquisition", rather than "learning" in Krashen's terminology.[1] Thus, Wilhelmer (2008: 21–23) resorts to Krashen's theory and states that CLIL may provide that "comprehensible input +1", that is, input which the learner can understand even though it is still one step beyond their current ability in the target language. This, according to Krashen, learners should find challenging yet motivating. As a result, it could lower their affective filter, and acquisition would thus be boosted (Wilhelmer 2008: 21–23). Such beliefs have been echoed in Coyle et al.'s recent work, for which successfully implemented CLIL involves "the subtle overlap between language learning (intentional) and language acquisition (incidental)" (2010: 11).

Working on the premise that CLIL does provide that "comprehensible input + 1", it seems to make sense to hypothesise that, among those language benefits to be derived from CLIL, a potential boost to the so-called receptive skills (i.e. listening and reading comprehension) might be found. This is indeed what the available literature has reported in relation to the French immersion programmes implemented in Canada since the 1960s (which have very much inspired CLIL in Europe), showing visible receptive skill gains (Genesee 1994; Grabbe and Stoller 1997).

[1] Krashen (1987: 10) makes a distinction between "acquisition" and "learning" when referring to a second language. Thus, the former is "a process similar, if not identical, to the way children develop ability in their first language." It is, therefore, a "subconscious process", since we "are generally not consciously aware of the rules of the languages we have acquired. Instead, we have a 'feel' for correctness", he claims. The latter term, on the contrary, refers to "conscious knowledge of a second language, knowing the rules, being aware of them, and being able to talk about them".

As for CLIL itself, results point in this direction (Ruiz de Zarobe 2011: 223, 229–230), although the existing research remains scanty. To start with, it has been noted that receptive skills (especially reading) are far more actively worked on than productive skills in CLIL settings (Coonan 2007), which may serve as a predictor of success in the former. At any rate, Ruiz de Zarobe (2015) lists the linguistic benefits that can be reaped from CLIL programmes, according to the available research, and reading comprehension comes first among them. For her part, Dalton-Puffer provides one reason as to why CLIL students' reading comprehension skills may be further developed than those of their non-CLIL peers, namely that CLIL provides learners with "additional reasons for reading" (2008: 6). Accordingly, among the perceived benefits of CLIL stands the development of a greater passive lexicon, which may be related to the fact that vocabulary is apparently one of the few language aspects to receive explicit treatment in the CLIL class (Dalton-Puffer 2008: 5–6). This is something that seems to be backed up by Jiménez-Catalán and Ruiz de Zarobe (2009), who provide evidence of larger receptive vocabularies among CLIL students in primary education in Spain.

As opposed to reading, listening comprehension skills in a CLIL context have received less interest. This may be partly due to the fact that, since content and language are equally important in CLIL, research has been conducted enquiring into whether comprehension in the CLIL language was successful without necessarily comparing comprehension skills in CLIL and non-CLIL settings.

Studies investigating the development of listening comprehension skills within CLIL provide conflicting results (see Ruiz de Zarobe 2015). Hellekjaer's (2010) study, for example, reported on the difficulties experienced by university students in understanding lecture content in English in Norway, but the study did not provide any data on the development of listening comprehension skills. Another equally impressionistic study, this time interview- and questionnaire-based, was carried out by Aguilar and Rodríguez (2012), who found that a group of engineering students perceived vocabulary growth and improved listening skills after a 15-week semester in English-medium instruction at a Spanish university. Finally, Aguilar and Muñoz (2013), investigating the same Spanish university context, found that significant listening comprehension gains could be found after 15 weeks of CLIL instruction, but only among those CLIL participants with the lowest initial level of proficiency in English.

As for pre-university settings, Lasagabaster (2008) compared the overall performance in L3 English of both CLIL and non-CLIL participants in their fourth year of compulsory secondary education in the bilingual region of the Basque Country in Spain. Listening comprehension was one of the language skills measured, together with writing and speaking, and the results obtained showed that CLIL students significantly outperformed their non-CLIL peers. Further, CLIL participants' overall performance at the end of their third year was compared with that of non-CLIL participants at the end of their fourth year—when it was estimated that both groups' amount of exposure to English was roughly equivalent. Results showed that third-year secondary school CLIL participants generally outperformed their fourth-year non-CLIL peers, except for listening comprehension.

The effects of CLIL instruction in Catalan primary and secondary school settings have also been extensively investigated. For instance, Victori and Vallbona (2008) and

Vallbona (2009) found that CLIL participants from 3rd to 6th grades of primary education significantly outperformed their non-CLIL peers in some of the language screening tests. Specifically, at 6th grade, they were significantly better at dictation than their non-CLIL peers. Further, at 5th grade, they showed greater lexical complexity, fluency and accuracy in writing, but such superiority did not apply to listening comprehension. In secondary education, Coral (2009) found positive effects of another CLIL programme in listening comprehension skills. Navés and Victori (2010) summarised the results of the research comparing the performance of 5th, 7th, 8th and 9th CLIL and non-CLIL grades in listening comprehension, a dictation and cloze and grammar tests. The results showed that CLIL participants outperformed their non-CLIL peers for all of the areas analysed, including listening comprehension, the more positive results having been obtained from the 7th, 8th and 9th grades.

Finally, data from a third bilingual Spanish region, Galicia, can be found in San Isidro (2010), who analysed the linguistic performance of CLIL and non-CLIL students in their fourth year of compulsory secondary education from ten different schools across the region. His results showed that CLIL participants significantly outperformed their non-CLIL peers in all the language skills examined—reading, writing, listening and speaking—adding further evidence of the language benefits of CLIL. However, the author warned that the outcomes of his research should be interpreted with caution. In most schools, joining CLIL programmes is not compulsory for students, who may in turn not only be more highly motivated but also have a higher level of English from the onset.

The aim of the present chapter is to provide further data on the possible effects of English CLIL programmes in secondary education in Spain. More specifically, the study will centre on the development of receptive skills, that is, reading and listening comprehension in English by secondary education Spanish-Catalan learners living in Majorca. It should also be mentioned that the Balearic Islands in general, and Majorca in particular, are home to one of the largest immigrant communities in the country. This has resulted in an increasingly ethnically and linguistically diverse population which is, needless to say, reflected in the region's schools.

The relevance of this work can be seen in that:

1. CLIL is still a recent introduction and its full effectiveness is still to be assessed (Jiménez-Catalán and Ruiz de Zarobe 2009: 82; see also Pérez-Vidal 2007: 41; Lasagabaster and Sierra 2010);
2. comprehension has not received the same attention as production (Ruiz de Zarobe 2011: 231). In fact, Jiménez-Catalán and Ruiz de Zarobe (2009: 85) remark that, apart from their own, no single study has yet been produced comparing the possible impact of CLIL on such an essential aspect as the possible growth of receptive vocabulary across the different levels—primary, secondary or higher education. Lack of research is perhaps especially all the more evident in the field of listening comprehension, with no major study truly addressing this issue; and
3. many of the studies available present serious limitations (Bruton 2011) such as a generalised lack of pre-tests, which has been seen to conceal a frequent feature of CLIL programmes in Spain, namely the unofficial streaming of the best students in CLIL groups (Eurydice 2006; Bruton 2011).

In the light of all of the above, and considering both the characteristics of the participants and the fact that very few studies "adopt a genuinely multilingual perspective" in L2 acquisition research (Cenoz and Gorter 2011: 360), the present study addresses the following research questions:

RQ1: Is reading and listening comprehension proficiency in English higher among CLIL students than among their non-CLIL peers?
RQ2: Do both CLIL and non-CLIL students' English reading and listening comprehension skills progress at the same pace?
RQ3: Does the learners' language profile affect their acquisition of reading and listening skills in English?

2 Method

2.1 Participants

Participants were two groups of adolescent Catalan–Spanish bilinguals enrolled in compulsory secondary education (CSE) at six state-run schools in the Balearic Islands ($N=87$) (see Chapter "Learning English and Learning Through English: Insights from Secondary Education" for further details). Participants in the CLIL group ($N=50$) were learning either science or social science through the medium of English in addition to English as a Foreign Language (EFL); on the other hand, their non-CLIL peers' (formal instruction, FI) ($N=37$) exposure to English was limited to an EFL setting exclusively. Participants, aged 13 at the start of the study, were followed longitudinally for three academic years.

In order to ensure the comparability of both groups of students, those participants with a greater than average exposure to the English language were eliminated from our sample. This information was obtained from the language profile questionnaire, which all participants were asked to fill in at the beginning of the academic year (T1), providing a detailed linguistic portrait of each. The questionnaire enquired into their linguistic spectrum (different languages spoken, competence in each) and sociolinguistic habits (when, how often, where and with whom each language was spoken). The questionnaire also enquired into the time spent by participants learning English (when it was first taken up, whether they had any exposure to the language outside the classroom). This also included specific questions as to the number, aim and length of previous stays in English-speaking countries.

On the basis of the information provided on the language profile questionnaire, the following participants were excluded from the study: (1) students with at least one English-speaking parent using this language in their communication with their child on a daily basis; (2) students having received out-of-school tuition in English for extended periods; (3) students currently receiving extracurricular lessons in English and (4) students who had benefited from stay-abroad periods totalling a period equal to or above a month. Additionally, after careful examination of the data, outliers were eliminated from both our CLIL and non-CLIL samples (see research instruments below).

Participants in this study were also divided into four different categories, taking into account their language profile: Catalan-dominant bilinguals ($N=33$), Spanish-dominant bilinguals ($N=21$), balanced Catalan-Spanish bilinguals ($N=27$) and multilingual subjects ($N=6$). This division was based on the participants' self-reports in the language profile questionnaire. This included questions enquiring into their language of daily use in different spheres of their private lives outside school with both parents, siblings and friends. This was combined with additional information as to their national/regional origin, that of their parents, and, if applicable, the length of residence in Majorca. Thus, the Catalan-dominant participants spoke both Catalan and Spanish outside school but used Catalan more often than Spanish; the Spanish-dominant participants also spoke both Catalan and Spanish but used Spanish outside school more often than Catalan; participants in the third group spoke both languages and used them indistinctly outside school. A common pattern found among the balanced bilinguals was that Spanish prevailed at home whilst Catalan prevailed in their communication with friends and family; participants in the fourth group spoke at least one language other than English in addition to both Catalan and Spanish, typically using this additional language in their daily communication with either parent or their siblings. Among the other languages spoken by the multilingual participants, the most representative was German, but languages such as Bulgarian, Chinese, Croatian, Flemish, French and Swedish were also present in the sample.

None of the participants that spoke any language other than English claimed not to speak either Spanish or Catalan. Bilingualism is only natural in Majorca, especially among the younger generations, since this is a territory with two official languages, both present in the educational system. On a final note, and for the purposes of this study, Catalan-dominant bilinguals were more abundant in the smaller inland towns, whereas Spanish-dominant bilinguals tended to be individuals of Central and South American origin who had relatively recently moved to Majorca (although this did not compromise their understanding and filling in their questionnaires in Catalan).

All data constitute part of the COLE project corpus, as described by Juan-Garau and Salazar-Noguera in Chapter "Learning English and Learning Through English: Insights from Secondary Education".

2.2 Research Instruments

The participants' L3 English comprehension development was measured upon their performance on two listening comprehension and two reading comprehension screening tests. All of them were taken from well-known intermediate level ELT materials.

The first listening comprehension test ("News Listening") consisted of four radio-broadcast news stories which students had to listen to carefully so as to complete a ten-item multiple choice test with three response options per item. In the second

listening test ("Picture Listening"), participants listened to ten different recordings. Comprehension was also checked by means of a multiple choice test with three response options, although possible answers were not phrased but provided visually by means of pictures. It was for this reason that the researchers considered the Picture Listening to be not quite so cognitively demanding as the News Listening test. Each test was played twice and had an approximate duration of 10 min.

Participants were also asked to take two reading comprehension tests, each with a duration of 15 min. The first ("General Reading") involved reading ten short texts covering different topics and textual genres (post-it notes, business hours notices, job ads, fire emergency instructions and e-mails). The length of each text ranged from 3 to 29 words. Comprehension was checked by means of a ten-item multiple choice test, each item offering three possible answers. The second reading comprehension test ("Specific Reading") featured slightly more specific vocabulary relating to the CLIL subject taught at each school, either Science (topic: recycling; 186 words) or Social Science (topic: Spanish demography; 197 words). This second test was divided into two parts: (1) an overall comprehension test with six True/False statements; and (2) a short vocabulary comprehension test in which participants were expected to match four words from the text to appropriate definitions. Five definitions were provided so that participants had to discard one.

All four tests were run on the premises of each participating school at four different times over a 3-year span, following the COLE project data collection design (see Chapter "Learning English and Learning Through English: Insights from Secondary Education").

Finally, as mentioned above, an additional measure was taken to guarantee the comparability of the CLIL and non-CLIL groups: outliers were eliminated from our sample—which is becoming standard practice in applied linguistics (see e.g. Tavakoli 2012: 676; Racine 2013). Both the sample maximum and the sample minimum were affected, so that participants having obtained grades over 8 or below 2 (on a ten-point scale) at Time 1 were not considered. This was done so as to minimise the impact of the possible streaming of the best students into the CLIL groups (and consequently the possible concentration of the less academically-gifted students in the non-CLIL groups), which the available literature has referred to as common practice in Europe (Eurydice 2006; Bruton 2011).

3 Results

The mean scores of the two reading comprehension tests and the two listening comprehension tests are shown in Table 1. All scores are on a 10-point scale, with 0 indicating no correct answers and 10 being the highest possible score.

A close inspection of the results obtained by the two groups of learners across time reveals that, overall, both CLIL and FI students show gains after 4 years of instruction, even if the CLIL group's overall reading and listening comprehension skills in English are higher before the onset of treatment, as indicated by their higher

Table 1 Mean scores of the reading comprehension and listening skills obtained by the two groups of learners at Times 1, 2, 3 and 4

Group	Time	General reading	Specific reading	News listening	Picture listening
CLIL	1	4.68 (1.73)	5.40 (1.7)	5.20 (1.8)	4.80 (1.86)
	2	5.68 (2.47)	6.12 (2.15)	6 (1.91)	5.28 (2.02)
	3	6.58 (1.86)	6.84 (2.2)	6.36 (1.79)	6.14 (2.13)
	4	7.18 (2.18)	8.54 (1.44)	7.02 (1.69)	6.84 (2.02)
FI	1	4.59 (1.97)	4.22 (2.25)	4.46 (1.53)	4.46 (1.75)
	2	4.49 (2.29)	6.24 (2.07)	5.43 (1.55)	5.14 (1.81)
	3	5.95 (2.38)	4.57 (1.7)	5,62 (1.65	6.81 (2.01)
	4	7.19 (2.18)	5.14 (2.4)	6.76 (1.73)	6.46 (2.42)

Standard deviations are in parentheses

T1 scores on all four tests. In spite of this initial advantage, CLIL students outperformed their FI peers in some tests but not all.

In light of this, four independent-sample *t*-tests were run to test whether the scores obtained by the CLIL group at the onset (T1) were significantly higher than the scores obtained by their FI peers. No significant differences were found in the scores of the General Reading test [$t(85) = 0.21$, $p = .831$] and the Picture Listening [$t(85) = 0.86$, $p = .390$], indicating that both groups exhibited comparable skills in these two tests. However, there were significant differences in the scores of the Specific Reading [$t(85) = 2.85$, $p = .006$] and the News Listening [$t(85) = 2.01$, $p = .048$] tests. These results call for a cautious interpretation of the differences in performance between the two learner groups.

3.1 Reading Comprehension: Effects of Time and Group

Two two-way ANOVAs were run to examine the main effects of Group (2) and Time (4) and the two-way interactions, on the mean scores obtained by the two groups of learners on the two reading comprehension tests. The ANOVA of the General Reading test yielded a modest yet significant difference in performance between CLIL and FI groups [$F(1, 347) = 4.213$, $p = .041$]. The main effect of time was also significant [$F(3, 347) = 24.77$, $p < .001$] but the two-way interaction was not significant [$F(3, 347) = 1.43$, $p = .23$]. Pair-wise comparisons using *Tukey* post-hocs at the 0.05 alpha decision level revealed that, regardless of the amount of exposure and type of learning context learners received, both groups exhibited significant gains after 1-year intervals with the exception of the interval between Times 1 and 2.

The ANOVA of the Specific Reading test scores yielded a significant effect of Group [$F(1, 347) = 59.76$, $p < .001$], a significant effect of Time [$F(3, 347) = 15.36$, $p < .001$] and a significant two-way interaction [$F(3, 347) = 11.97$, $p < .001$]. Two additional one-way ANOVAs were run to test the main effect of Time on both the CLIL and FI scores for this test. The ANOVAs were significant for both the CLIL

group [$F(3, 196) = 24.96$, $p < .001$] and the FI group [$F(3, 144) = 6.32$, $p < .001$]. Pair-wise comparisons with *Tukey* post-hoc tests showed that the CLIL group exhibited significant gains over time [Time 1 < Times 3, 4; Time 2 < 4, Time 3 < 1, 4; Time 4 < Times 1, 2, 3] but the FI group did not show significant gains after 3 years of instruction [Time 1 < Time 2; Time 2 < Time 3].

Overall, the analyses just reported suggest that CLIL may have a direct impact in improving learners' reading comprehension abilities. Both the CLIL and FI groups scored in a similar fashion in the General Reading test. However, when faced with a text related to the content given in the CLIL classroom (Specific Reading), CLIL learners were able to score significantly higher than their FI peers from the onset. Most importantly, the CLIL group showed a clear improvement over time (Time 1 to Time 4), whereas the FI group exhibited only modest improvement.

3.2 Listening Comprehension: Effects of Time and Group

The mean scores obtained by the two learner groups on the Listening Comprehension tests were submitted to two additional two-way ANOVAs to test the main effects of Group (2), Time (4) and the Group x Time interaction. In the case of the News Listening, the ANOVA yielded significant main effects of Time [$F(3, 347) = 20.41$, $p < .001$] and Group [$F(1, 347) = 9.46$, $p = .002$] but no significant two-way interaction [$F(3, 347) = .35$, $p = .78$]. *Tukey*'s pair-wise comparisons revealed that both groups exhibited significant progress over 1-year intervals, except for the interval between Times 2 and 3. Again, the scores obtained by CLIL on this listening test were significantly higher than the scores obtained by their peers in the FI classrooms.

As for the Picture Listening test, the ANOVAs yielded no significant main effect of Group [$F(1, 347) = .05$, $p = .82$], a significant main effect of Time [$F(3, 347) = 20.13$, $p < .001$] but no significant two-way interaction [$F(3, 347) = 1.26$, $p = .28$]. *Tukey*'s post-hoc comparisons showed that both groups' gains over a 3-year period did not significantly differ from one another. An exception was the time interval between Times 1 and 2. Overall, these analyses indicated that, in line with the outcomes of the three other tests reported so far, both CLIL and FI learners' progress over time in listening skills followed the same trends. Interestingly, in this case, the CLIL learner group did not score significantly higher than the FI group.

3.3 Effect of L1 Background

The data were submitted to further analysis to examine whether L1 background would influence the students' outcomes on the two receptive skills. The mean scores obtained by all learners at T4 as a function of first language are tallied in Table 2. Four additional one-way ANOVAs were run to test the simple effect of L1

Table 2 Mean scores obtained by the learner groups as a function of L1 background

Group	General reading	Specific reading	News listening (General)	Picture listening (Specific)	F	*p*
Balanced bilinguals	7.37 (1.88)	7.11 (2.3)	6.85 (1.68)	6.33 (2.21)	.49	.68
Catalan-dominant	7.06 (2.51)	6.12 (2.89)	6.52 (1.83)	6.30 (2.24)	3.74	.01
Spanish-dominant	6.9 (1.86)	8.33 (1.93)	7.52 (1.5)	7.29 (1.92)	1.57	.20
Multilingual	8 (2.6)	8 (1.67)	7.17 (1.47)	8.17 (2.13)	2.07	.11

Standard deviations are in parentheses

background. Only the scores of the Specific Reading test reached marginal significance [$F(3, 83) = 3.74$, $p < .05$]. Neither the General Reading [$F(3,83) = .49$, $p = .68$], nor the News Listening test [$F(3, 83) = 1.57$, $p = .2$] or the Picture Listening test reached significance [$F(3,83) = 2.07$, $p = .11$]. Pair-wise comparisons with *Tukey* post-hoc tests on the Specific Reading scores showed that Spanish-dominant learners scored significantly higher than the Catalan-dominant learners on this test.

4 Discussion

The aim of the present chapter was to enquire into the possible ameliorating effects of CLIL on Spanish–Catalan EFL learners' development of listening and reading comprehension skills. Accordingly, two research questions were addressed to compare (1) CLIL and non-CLIL participants' receptive skill gains in English; and (2) the rate at which such skills develop. Additionally, and considering the multiethnic and multilingual background of the Majorcan population, a third research question enquired into the possible effects of language background on the receptive skill gains in English by the same participants.

Overall, the findings just reported add further evidence to the existing literature that CLIL programmes may prove beneficial as to the development of receptive skills, as reported by Ruiz de Zarobe (2011). However, this statement needs to be qualified.

As expected, CLIL participants outperformed their non-CLIL peers on the two reading comprehension tests at the four collection times, with the only exception of the General Reading comprehension test at T4, when FI participants marginally outperformed their CLIL peers. Such benefits follow the trends of previous studies examining gains in reading comprehension among learners from different linguistic backgrounds (Dalton-Puffer 2008; Ruiz de Zarobe 2015). The highly significant differences between CLIL and FI learner groups in the Specific Reading comprehension test may indicate that CLIL students are exposed to a wider range of lexical items in the target language, which are mostly left out of the regular EFL classroom. In turn, this would result in greater receptive vocabularies among CLIL participants, in agreement with Dalton-Puffer (2008) and Jiménez-Catalán and Ruiz de Zarobe (2009).

As for the listening comprehension tests, the analyses do not seem to indicate a clear advantage of the CLIL learners over their FI peers. The CLIL learner group outperformed the FI group in the News Listening test but not in the Picture Listening test, suggesting that CLIL methodologies might not have a clear ameliorating effect on learners' listening comprehension skills. Similar findings were reported by Victori and Vallbona (2008) and Vallbona (2009) among EFL learners from Catalan primary schools.

In the second research question, we analysed whether both learner groups exhibited the same progress rates. Results showed that both CLIL and FI subjects progress in a similar fashion, with only a few exceptions. For example, it is indeed interesting that general reading comprehension progress between T1 and T2 should not prove significant for either CLIL or non-CLIL participants. This may be seen as evidence that reading is a skill that is not sufficiently worked on in the generic EFL class (both groups of students had only received formal instruction prior to T1).

No significant progress was found either in the News Listening test for either group between T2 and T3, whereas progress developed in significantly different ways across groups for the Picture Listening test between T1 and T2. It should be remembered, however, that the News Listening test was deemed by the researchers as more cognitively demanding, with the Picture Listening test providing visual cues that were expected to aid comprehension. It was therefore surprising to find that overall results were poorer in the Picture Listening test. However, it should also be borne in mind that CLIL learners have been reported to cognitively process their L2s more intensely (Aliaga 2008), a useful skill in activities like listening (Liubinienė 2009). The results obtained, therefore, might be seen as evidence that CLIL programmes have a positive impact on cognitively demanding listening activities, although caution is required here since CLIL participants performed significantly better than their FI peers on the News Listening test already at T1.

Results indicate that similar overall (T1-T4) progress in both reading and listening comprehension skills applies to both CLIL and FI participants alike. This general statement, however, should be qualified by adding that (1) the CLIL group's scores are higher on all tests at T1; and (2) progress is far more regular among the CLIL learners than among their FI peers. Thus, CLIL students show progress at each collection time with the minor exception of the General Reading comprehension test at T4. For their part, non-CLIL participants experience losses on the General Reading test (T2), Specific Reading (T3) and the Picture Listening (T4). These may be task-repetition-related losses but they could also signal the non-linear nature of language learning (Harshbarger 2007). If the latter, the results obtained could point to CLIL possibly contributing to evening out the non-linear nature of language learning progress, at least as far as receptive skills are concerned.

Finally, the third research question enquired into a possible effect of learners' L1 on the acquisition of reading and listening skills in English. The literature reviewed almost systematically highlights the positive effects that bi- or multilingualism may have on the acquisition of an additional language (Clarke 2009; Vuorinen 2009; Jarvis 2015). Such positive effects might in turn derive from the greater metalinguistic awareness that the literature endows multilinguals with (Klein 1995; Cenoz

and Gorter 2011; EF 2012). However, the results obtained cannot be seen to back up such findings. In fact, the only significant difference found among all four language profiles at T4 was that Spanish-dominant learners scored higher than their Catalan-dominant peers on the specific reading comprehension test. This by itself is not sufficient to draw conclusions on the possible language benefits to be derived from one language profile over the other. The uneven results, however, might be related to two other factors, namely (1) an insufficient number of subjects in at least some of the language profile categories, which might have affected the statistical reliability of the results; and (2) socioeconomic variables that might be seen to interact with language profile (see Chapter "Exploring Affective Factors in L3 Learning: CLIL vs Non-CLIL"). Indeed, Catalan and Spanish are very closely related languages, so whether participants are Catalan- or Spanish-dominant should not *per se* have very clear consequences as to their language outcomes in L3 English. However, being Spanish- or Catalan-dominant in the Majorcan context may be an indicator of potentially relevant socioeconomic and cultural variables such as social class background, parents' education, general interests, hobbies or aims in life, none of which lying within the scope of the present study.

5 Concluding Remarks

Overall, the findings just reported show that CLIL participants generally outperform their non-CLIL peers on most tests. This may indicate that, notwithstanding the possible streaming of students, CLIL programmes prove beneficial as to the development of learners' receptive skills in general. This especially applies to reading comprehension (and not quite so much listening), and it is all the more clear in specific reading comprehension. All this points to CLIL learners being exposed to lexical items that are simply not present in the ordinary EFL class. Such items eventually become part of the CLIL learners' receptive vocabularies, thus aiding comprehension. Improved reading comprehension may ultimately result from the fact that CLIL does, after all, provide "additional reasons for reading" (Dalton-Puffer 2008: 6).

Results also show that, even though CLIL participants generally outperform their non-CLIL peers, receptive skill gains develop in roughly similar ways in both groups. However, results also indicate that the development of receptive skills is visibly more homogeneous among CLIL than among non-CLIL participants, and that CLIL learners perform better in the more cognitively demanding tasks.

Finally, no conclusive findings can be reported as regards the interaction of language profile and receptive language skill gains. A limitation of the present study is that it has not enquired into how the four different language profiles detected are distributed within the CLIL and non-CLIL groups. It could be worth taking this into consideration since other studies in this volume (see Chapter "Exploring Affective Factors in L3 Learning: CLIL vs Non-CLIL") have found evidence that language profiles are not evenly distributed among them, Catalan-dominant and multilingual subjects being more visibly represented in the CLIL group, whereas Spanish-dominant

speakers are far more abundant in the non-CLIL group. Similarly, another productive line of research would be to examine the interaction between language profile and learning context.

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Writing Development Under CLIL Provision

Maria Gené-Gil, Maria Juan-Garau, and Joana Salazar-Noguera

1 Introduction

1.1 Motivation and Literature Review

Written texts play a crucial role in global communication in educational and professional environments (Chaudron et al. 2005). Thus, from a functional linguistics perspective (Halliday 1996), knowing how to write is having the ability to communicate by producing meaningful texts, addressed to an absent public (Martín Úriz 2005).

Within the content and language integrated learning (CLIL) approach, language is one of the five dimensions considered—along with culture, environment, content and learning—(Marsh et al. 2001) and perhaps the one that has attracted most research interest in CLIL literature. This is probably due to the fact that the most common reason to introduce CLIL in the classroom is to improve overall foreign language competence (Ruiz de Zarobe 2010), without having to devote extra time to the teaching of the target language (i.e. a content subject and the target language being learnt simultaneously), the so-called *two-for-the-price-of-one* argument (Bruton 2013).

Research in CLIL has gathered momentum over the last decade and many of the studies regarding the impact of CLIL on language development have shown positive outcomes, despite a few critical voices (e.g. Bruton 2013). However, some areas of

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language competence have received more attention than others. Among the latter we find writing, whose role in CLIL contexts has been largely unrecognised (Llinares et al. 2012). In this sense, overview studies on CLIL learning outcomes (Dalton-Puffer 2008; Ruiz de Zarobe 2015) distinguish between language skills that are likely to benefit from CLIL instruction from those that seem to remain unaffected by this approach, with writing being classified among the latter.

In her review of research analysing language competences in CLIL, Ruiz de Zarobe (2011) pointed out that in some areas of writing—i.e. fluency and complexity, both lexical and syntactic—important gains were found, whereas in others, such as accuracy and discourse skills, no clear improvement was observed. Thus, whilst some studies show the benefits of CLIL in written competence, others suggest the existence of limited progress regarding writing in CLIL classrooms.

Among the former studies, Whittaker et al.'s (2011) longitudinal findings revealed that CLIL learners progressed in the academic register that is required to produce successful texts in a CLIL setting and that they wrote more cohesive and coherent texts over time. From a more global perspective, Lasagabaster (2008) found significant improvement in favour of CLIL students in overall writing competence using a holistic methodology. His findings were partially in line with those of Ruiz de Zarobe (2010), who focussed only on written skills using the same holistic methodology but comparing different groups of students. According to this scholar, CLIL learners scored significantly higher in content and vocabulary, but differences were not statistically significant for organisation, language use and mechanics. Roquet's (2011) results also showed a significant advantage for CLIL secondary students' writing compared to their non-CLIL counterparts, particularly in accuracy, while Navés (2011) reported overall better results in writing development in favour of CLIL learners, but she also found that CLIL students were systematically worse in accuracy than their non-CLIL counterparts.

Among the studies that have not shown clear benefits in writing, Vollmer et al. (2006) found that there were considerable deficiencies in CLIL learners' academic writing. Similarly, Llinares and Whittaker's (2006) data revealed that their low-secondary Spanish CLIL participants learning social science in English attained some of the subject-specific features of their discipline, such as the use of common specialised terms, while some other resources—for example, modality or the expansion of their clauses through elaboration—were hardly ever applied in their compositions.

Generally speaking, empirical research into writing development under CLIL provision is still scarce. Therefore, more fine-grained studies on the effects of CLIL on written competence over time are still needed. The current study—framed in a broader research endeavour, the COLE/CO3 Project, as described by Juan-Garau and Salazar-Noguera (2015)—intends to make a contribution in this direction by presenting longitudinal findings on the development of written competence in secondary education CLIL learners and their non-CLIL counterparts in the Balearic Islands.

1.2 Objectives and Research Questions

In the light of the above, the present chapter intends to expand current knowledge on the longitudinal impact of CLIL on the English-as-a-foreign-language (EFL) writing skill. To this end, the following research questions will be addressed:

1. How does context of learning (CLIL and non-CLIL) affect the development of writing competence in bilingual secondary education English learners? More specifically,
   (a) How does written performance develop longitudinally—over 3 years, from T1 to T4—within each learning context?
   (b) How does CLIL participants' written performance compare to that of their non-CLIL counterparts when hours of exposure to the target language are equated?

2 Method

2.1 Participants

Participants in this study ($N=45$) were two groups of Spanish/Catalan bilingual secondary education students (58 % males and 42 % females), an experimental CLIL group ($N=30$) and a comparable non-CLIL control group ($N=15$). They were enrolled in three state-run high schools, and their average age was 13 at the start of the study. The CLIL group received 3 h a week of CLIL instruction in science or social science through English plus 3 h a week of formal instruction in EFL, while the control group received exclusively 3 h a week of formal instruction in EFL. Writing did not receive any special consideration or treatment either in the CLIL or in the non-CLIL learning contexts under study, with most of the written assignments being brief (half a page or shorter) and about general topics in the EFL context, whereas the CLIL compositions were more subject-specific and slightly longer. Neither CLIL nor non-CLIL students were given personalised feedback on their written tasks on a regular basis.

2.2 Research Instruments

In order to measure the participants' written competence in English, both CLIL and non-CLIL groups were asked to write a timed composition (25') in English—without using dictionaries or any other type of support—at every data collection time.

The task consisted in writing an e-mail to an English-speaking friend telling him/her about a film they had seen recently (including title, storyline, time, characters and personal opinion) and explaining what was done after watching it.

The written task was administered by the authors of this study or by their research colleagues in the participants' school setting. Detailed oral and written instructions were given to ensure that the students understood what they were requested to write about.

2.3 Procedures

2.3.1 Data Collection

The design of the study was longitudinal. It analysed the results of CLIL and non-CLIL students in written development obtained at four research times corresponding to three consecutive school years, starting from the second year of compulsory secondary education (CSE).

To look into participants' written language performance in each context over time, CLIL and non-CLIL groups were measured at T1, coinciding with the onset of the CLIL programme in the participating schools (start of second-year CSE), at the end of that academic year (T2), and then at the end of third- (T3) and fourth-year CSE (T4). For more information on participants, setting and data collection procedures see Juan-Garau and Salazar-Noguera (2015).

2.3.2 Analysis

Intra-group analyses were applied to measure longitudinal written performance within each group of participants throughout the four research times over a 3-year period. Additionally, two inter-group analyses were conducted to try to rule out the effect of difference in the amount of language exposure. On the one hand, CLIL and non-CLIL participants' written performance was compared by keeping the hours of exposure to the target language constant (210 h).[1] That is, CLIL participants at T2 (14 years old) were compared to their non-CLIL counterparts at T3 (15 years old). On the other hand, both groups were measured with increased exposure in favour of the non-CLIL group (210 h vs. 315 h in the case of the latter group). More specifically, this included CLIL learners at T2 compared to non-CLIL students at T4 (16 years old).

[1] In a 1-year span, CLIL participants received 210 h of exposure to the target language, compared to the 105 h received by their non-CLIL counterparts.

CAF Measures

Quantitative analytical procedures have been used to measure subdimensions of language proficiency: complexity, accuracy and fluency (CAF). CAF measures are employed in research as conventional objective performance indicators on the written assessment of language students (see, e.g., Larsen-Freeman 2009; Kormos 2011).

In the present investigation, complexity includes both syntax and lexis. Syntactic complexity has been measured by means of the coordination index, which is calculated by dividing the number of independent clause coordinations by the number of combined clauses, that is, the number of clauses minus sentences[2] (Wolfe-Quintero et al. 1998). This index should decrease as learners improve their competence, with values ranging from 0 to 1. Nevertheless, after some trial analyses, our data revealed that coordination might also be considered a sign of complexity to a certain degree compared to the simple juxtaposition of sentences present in low-performing students, even though subordination implies an even higher degree of syntactic complexity. For this reason, and despite the fact that the coordination index relates coordinated clauses to both subordination and coordinated clauses, the coordination ratio—T-units/sentence—and the subordination ratio—clauses/T-unit—are also used in this paper. Both ratios take values equal or higher than 1, with 1 indicating the lower degree of coordination and subordination, respectively.

For lexical complexity, we have applied the D-index, a formula developed by Malvern and Richards (1997) as an alternative to the text-length-related problems posed by the traditional type/token ratio. Although it has recently been argued that this D-index might also depend on text length to a certain extent, it is still one of the most valid and reliable measures of vocabulary diversity—or lexical richness—(McKee et al. 2000; Kormos 2011). Therefore, this parameter has been used in a number of studies on language development (see, e.g., Kormos 2011). The measure is operationalised using the VOCD command in CLAN software. Its calculation is based on probability, through a model using a random selection of tokens to produce a curve of type/token ratio against samples of increasing token size for the text being analysed.

As overall accuracy is considered here, no error levels or error types have been established. Therefore, we have counted the total number of error-free T-units per T-unit—with values ranging from 0 to 1—and errors per T-unit. For the former, the higher the value, the more accurate the text; for the latter, lower values show improved accuracy.

As regards fluency, three interrelated ratios have been used: the total number of T-units per minute, the total number of words (i.e. tokens) per T-unit and the total number of words per minute.

[2] After some trial analyses, we decided to count any verb phrase (either finite or non-finite) as a clause and to consider a sentence as either one T-unit or all the coordinated T-units included between text punctuation marks. We have adopted Hunt's (1964) T-unit definition, which considers a *minimal terminable unit of language* or *T-unit* a main independent clause plus all its subordinate dependent clauses.

Holistic Assessment

So as to capture the overall picture, a more global analysis of written competence was also conducted. Thus, the participants' writings were additionally rated using holistic assessment, as this enabled us to account for features that might elude analytical measures, such as adequacy of the content.

The ESL Composition Profile (Jacobs et al. 1981) was applied here (following, e.g., Lasagabaster 2008; Ruiz de Zarobe 2010) to obtain an overall account of the students' written competence (measured as the total score of the five scales described below). Although we consider this profile to be holistic, it may be argued that it is partly holistic and partly analytical (Ruiz de Zarobe 2010). This assessment tool is a multilevel scoring scale that measures the following five areas:

1. Content (development of the topic, task fulfilment, and adequacy of the content of the text)—30–27: excellent to very good; 26–22: good to average; 21–17: fair to poor; and 16–13: very poor.
2. Organisation (structure, cohesion, and clarity of exposition of the paragraphs and ideas)—20–18: excellent to very good; 17–14: good to average; 13–10: fair to poor; and 9–7: very poor.
3. Vocabulary (selection of lexis and expressions and their usage)—20–18: excellent to very good; 17–14: good to average; 13–10: fair to poor; and 9–7: very poor.
4. Language use (morpho-syntax)—25–22: excellent to very good; 21–18: good to average; 17–11: fair to poor; and 10–5: very poor.
5. Mechanics (conventions, such as spelling, capitalisation and punctuation)—5: excellent to very good; 4: good to average; 3: fair to poor; and 2: very poor.

The use of this integrative methodology—including both microlevel analytical measures (namely CAF measures) and more global evaluation (i.e. holistic assessment)—and the fact of measuring participants' longitudinal written development over a considerably long period of time (three consecutive school years) in the two aforementioned contexts of instruction add novelty to our research.

Statistical Procedures, Reliability and Validity

Analysis of variance (ANOVA) tests were first used to compare the mean scores obtained at every research time for each of the CAF measures and each item in the holistic assessment. Post-hoc paired comparisons were subsequently carried out (when applicable) using Tukey's tests for analysis within groups. For analysis between groups, *t* tests for independent samples were conducted applying the Bonferroni adjustment.

To ensure reliability, the written task was piloted, administered, transcribed (using CLAN-CHILDES conventions) and marked consistently for CAF measures. In the case of the holistic assessment, to avoid rating subjectivity, one of the authors (main rater) was trained to use the ESL composition profile and a significant percentage of the writings were double-rated by the main rater and a research assistant

(second rater) also trained in the use of this assessment tool. Inter-rater reliability was 0.88. Discrepancies were discussed and settled. To ensure validity, the composition task was designed taking into account the type of written activities typically practised in EFL secondary classrooms. Additionally, we tried to have two comparable groups of participants at the start of the study. Thus, when they were assessed by means of the objective analytical measures described in this chapter, both groups showed similar performance at T1, with significant differences in favour of the CLIL learners only being found in one out of nine of the measures (i.e. the coordination ratio). Having said that, we subscribe to Collin et al.'s (1999: 659) view that "[b]ecause the study was carried out in an existing educational context, some variables were difficult or impossible to control. Although this places certain limitations on the interpretations and the conclusions that may be drawn from the study, research of this type also has advantages". Lynch (1996) points out that the advantage of comparing existing programmes is of greater ecological validity that can add to the generalisability of the results, provided steps are taken to properly report the context, methodology, and findings. More recently, Lorenzo et al. (2011) have also justified the ecological validity of their study on the basis that they had accurately reflected what had actually happened in the educational settings scrutinised—as we believe is the case in the present research.

3 Results

3.1 Longitudinal Written Development in CLIL and Non-CLIL Groups

3.1.1 CAF Measures

Broadly speaking, significant differences in the longitudinal development of written complexity, accuracy and fluency were found in the CLIL group, while the non-CLIL group attained significantly improved competence only in accuracy. These findings show that both groups increasingly wrote more accurate compositions and that CLIL participants additionally produced more complex and—to a lesser extent—fluent texts over time, especially between T1 and T3, as will be explained in greater detail below.

Regarding syntactic complexity, as Fig. 1 clearly depicts, CLIL participants showed significant improvement in the coordination index ($F=4.01$; $p=0.01$) between T1 and T4 ($p<0.01$), with a decrease of 0.19.[3] This indicates that CLIL students' compositions progressively increased their syntactic complexity. No significant differences or a clear trend were observed in the coordination ratio for CLIL learners, which shows that students did not produce more coordinated T-units as time went by. However, these participants made considerable longitudinal progress

[3] As regards complexity index, lower values indicate improved performance.

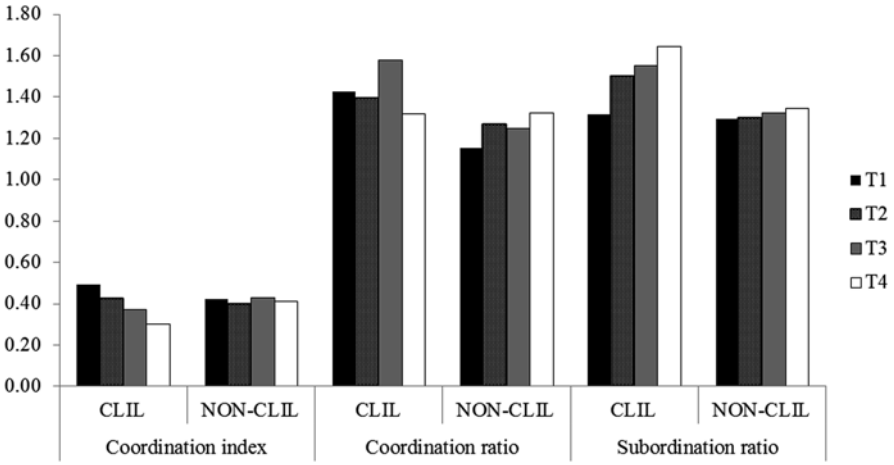

Fig. 1 Longitudinal development in syntactic complexity for CLIL and non-CLIL participants

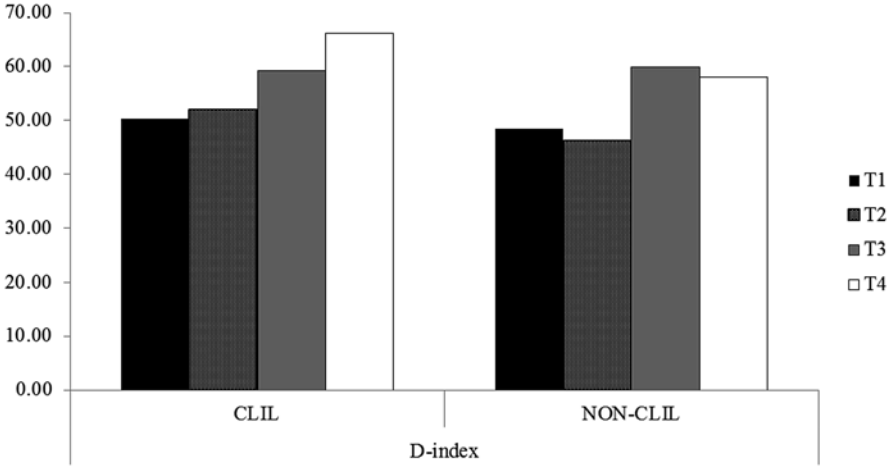

Fig. 2 Longitudinal development in lexical complexity for CLIL and non-CLIL participants

in the subordination ratio ($F = 5.47$; $p = 0.001$), suggesting that they gradually wrote more subordinate clauses. Significant differences in this respect were found between T1 and T3 ($p < 0.05$) and T1 and T4 ($p < 0.01$), with increases of 0.23 and 0.33 respectively. In contrast, no significant longitudinal differences were found in these three complexity measures for the non-CLIL group, although a tendency towards improvement was observed in the coordination and subordination ratios, pointing to higher syntactic complexity.

With regard to lexical complexity, Fig. 2 above reveals that both the CLIL and non-CLIL groups tended to use more diverse vocabulary in their compositions—as

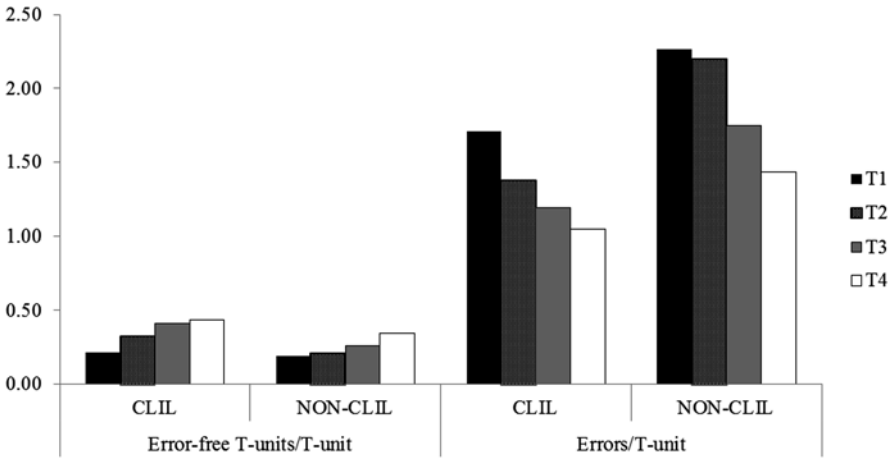

Fig. 3 Longitudinal development in accuracy for CLIL and non-CLIL participants

measured through the D-index—along the four research times. Nevertheless, significant improvement was found only for CLIL students ($F=9.63$; $p<0.0001$)—between T1 and T3 ($p<0.05$), T1 and T4, and T2 and T4 ($p<0.01$ in both cases)—with increases of 8.96, 16.01 and 14.32, respectively.

It was in the accuracy domain where overall greater progress was found, as both groups of participants wrote more correct T-units and committed fewer errors, as clearly depicted in Fig. 3 above. That is, CLIL and non-CLIL students wrote increasingly more accurate texts over the four data collection times. More specifically, CLIL learners showed significantly improved error-free T-units per T-unit ratio ($F=11.44$; $p<0.0001$). Their improvement was significant between T1 and T3 ($p<0.01$), T1 and T4 ($p<0.01$), and T2 and T4 ($p<0.05$), recording increases of 0.19, 0.22 and 0.11 respectively, which indicated that they progressively wrote more correct T-units per T-unit. These students made significantly fewer errors per T-unit ($F=10.98$; $p<0.0001$) at T1–T2 ($p<0.05$), T1–T3 ($p<0.01$), T1–T4 ($p<0.01$), and T2–T4 ($p<0.05$), recording decreases of 0.33, 0.52, 0.66 and 0.33 respectively.[4] Non-CLIL learners also improved significantly in the error-free T-units per T-unit ratio ($F=2.99$; $p=0.04$), with a 0.15 increase between T1 and T4 ($p<0.05$), and in errors per T-unit ($F=4.15$; $p=0.01$), recording decreases of 0.83 and 0.76 between T1 and T4 and between T2 and T4 respectively ($p<0.05$ in both cases). In short, both groups attained significant improvements in accuracy over time with overall higher accuracy levels for CLIL participants.

As regards the fluency development of the CLIL group (see Fig. 4 below), results were somewhat mixed. On the one hand, a positive trend was observed for T-units per minute, words per T-unit and words per minute throughout T1–T2–T3. This indicates

[4] In errors per T-unit, the lower the values the better.

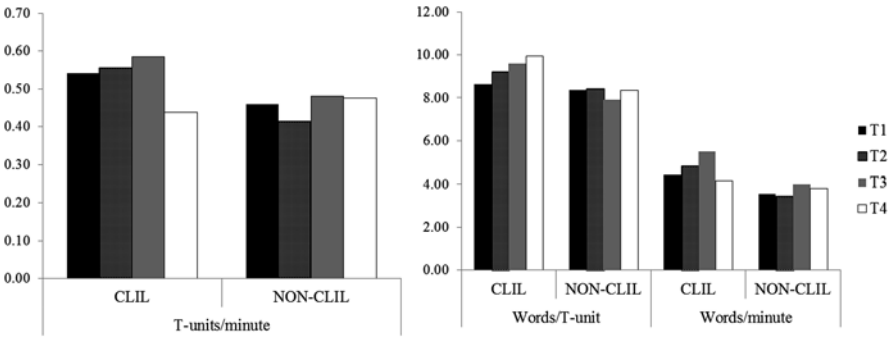

Fig. 4 Longitudinal development in fluency for CLIL and non-CLIL participants

that CLIL participants progressively produced longer texts over the first three research times. On the other hand, a decline became apparent at T4 in T-units and words per minute, revealing that CLIL learners' composition length decreased. However, only T-units per minute ($F=4.8$; $p=0.004$) and words per minute ($F=9.04$; $p<0.0001$) ratios produced longitudinal significant differences. More specifically, differences in T-units per minute were found between T2 and T4 ($p<0.05$), and T3 and T4 ($p<0.01$), registering 0.12 and 0.15 decreases respectively. Words per minute showed significant differences when comparing T1–T3 (1.08 increase) and T3–T4 (1.36 decrease), being $p<0.01$ in both cases. The fluency development of non-CLIL participants, for their part, did not follow a clear longitudinal trend, with increases and decreases alike, and registered no significant differences in any of the four research times.

3.1.2 Holistic Assessment

Overall, when holistically assessed (by evaluating content, organisation, vocabulary, language use, mechanics, and overall performance, which provides the total score), both CLIL and non-CLIL participants showed considerable signs of improved written competence from T1 to T4. However, this analysis yielded somewhat mixed results. As will be explained in greater detail below, the CLIL group attained better and faster development. Moreover, statistically significant positive differences between research times were found for most items in the case of CLIL learners. Nevertheless, there were also some small decreases for both groups of participants. Only in mechanics did the CLIL group progress at each time, although the differences in this case did not turn out to be statistically significant.

As far as content is concerned, negligible differences were observed between T1 and T4 within groups, but the non-CLIL students showed a more regular, though small, increasing trend (Fig. 5). All the scores obtained by both CLIL and non-CLIL learners in this item corresponded to fair-to-poor level, indicating that their written compositions showed limited knowledge of subject or inadequate development of

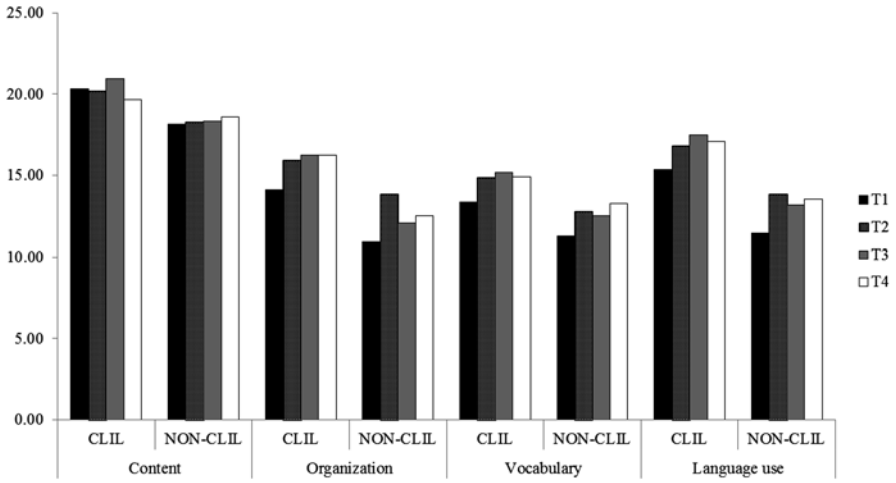

Fig. 5 Longitudinal development in content, organisation, vocabulary and language use for CLIL and non-CLIL participants

topic and that no important progress was attained by any of the groups of participants over time in this respect.

Regarding organisation, the development of non-CLIL students did not follow a clear longitudinal trend—with increases and decreases alike and no significant differences at all—and corresponded to a fair-to-poor level at every research time (see Fig. 5). This result points to the participants' production of non-fluent texts, with confused or disconnected ideas and no logical sequencing or development. In contrast, the CLIL participants' performance in text organisation was higher and corresponded to good-to-average level at every research time. This suggests that their written tasks were somewhat loosely organised but with the main ideas standing out, and logical but incomplete sequencing. CLIL students increasingly progressed over time. This improvement turned out to be significant ($F=9.01$; $p<0.0001$) between T1 and T2 ($p<0.01$), T1 and T3 ($p<0.01$) and T1 and T4 ($p<0.01$)—with increases of 1.77, 2.10 and 2.10 points respectively—, indicating that CLIL students progressively wrote better organised and more cohesive texts.

In terms of vocabulary (Fig. 5), both groups improved their performance at T4 compared to T1, although some small decreases were observed in between in the case of non-CLIL students and between T3 and T4 for CLIL learners. More specifically, non-CLIL lexis was "fair to poor" at every research time and no significant differences were observed over time in this group of learners. This indicates that they used a limited range of words and committed frequent errors in word choice and usage, resulting in meaning being confused or obscured. Meanwhile, CLIL participants' vocabulary ranged from "fair to poor" to "good to average", the latter level indicating that they used an adequate range of words and made sporadic mistakes in word choice and usage, which did not obscure meaning. Significant improvements were found ($F=8.63$; $p<0.0001$) in CLIL students' vocabulary

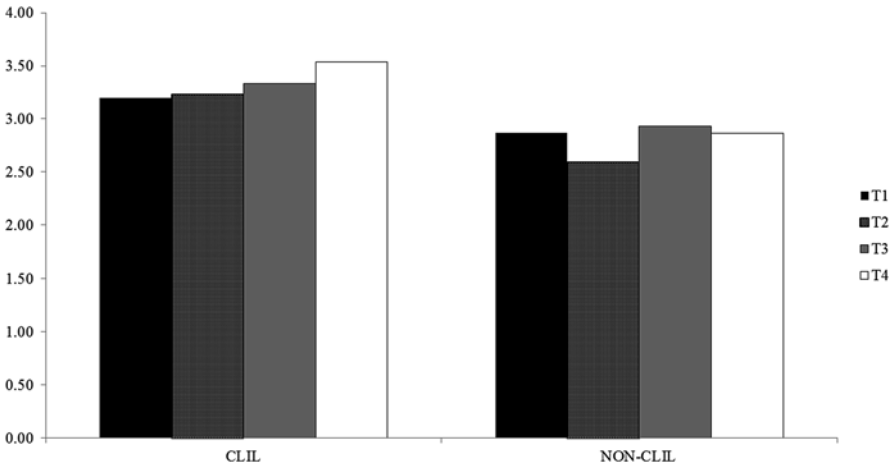

Fig. 6 Longitudinal development in mechanics for CLIL and non-CLIL participants

development between T1 and T2—1.50 points—, T1 and T3—1.78 points—and T1 and T4—1.55 points—(with $p<0.01$ in the three cases).

Regarding language use (i.e. morpho-syntax), non-CLIL students scored higher at T4 than at T1 (13.53 vs. 11.47) and reached their maximum at T2 (13.80), although no significant differences were found (Fig. 5). These values are within the fair-to-poor level, which means that their texts presented major problems in both simple and complex constructions and that frequent errors regarding negation, agreement, tense, number, word order, articles, pronouns, prepositions, run-ons and deletions were made, leading to confused or obscured meaning. By contrast, the improvement in language use between T1 and T4 for the CLIL group ranged between 15.33 at T1 and 17.06 at T4 (with a peak of 17.47 at T3), even though these scores also fell within fair-to-poor values. This progress was significant ($F=6.86$; $p=0.0003$) between T1 and T2 ($p<0.05$), T1 and T3 ($p<0.01$) and T1 and T4 ($p<0.01$), indicating that CLIL participants progressively wrote more complex and correct morpho-syntactic structures in their compositions.

As can be visualised in Fig. 6 above, the results in development of mechanics (i.e. conventional aspects of language) of non-CLIL students were mixed—registering both increases and decreases, and no significant differences at all—and corresponded to a level between "fair to poor" and "very poor" at each data collection time. That is to say, their texts abounded with errors in conventions such as spelling, punctuation and capitalisation. By contrast, CLIL learners tended to attain improved performance in conventional linguistic aspects at each research time and their scores ranged from 3.20 to 3.53, which are between fair-to-poor and good-to-average levels, a result that did not reach significance.

Finally, as far as overall written competence (i.e. the sum of the five aforementioned items) is concerned (Fig. 7), in the case of the CLIL group, a substantial upwards trend was observed between T1 and T3, which indicated that these students attained

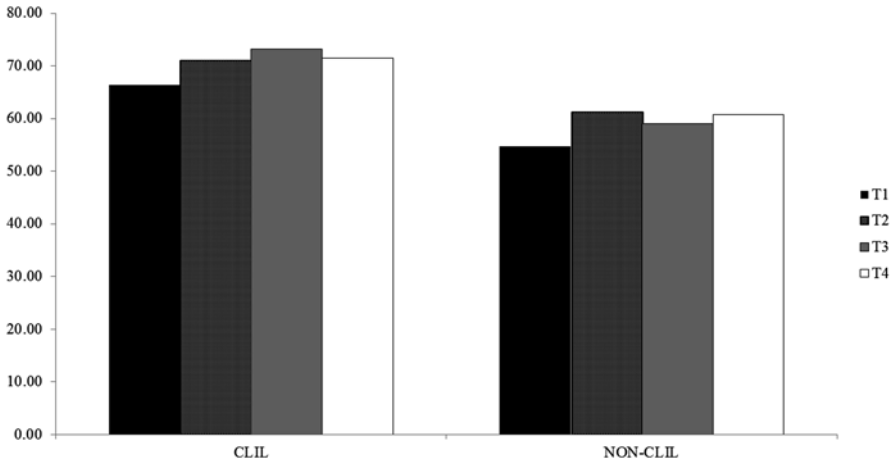

Fig. 7 Longitudinal development in overall competence (total score) for CLIL and non-CLIL participants

increasingly improved performance. At T4, however, their total score was slightly lower. When statistically analysed, significant differences were observed ($F = 5.60$; $p = 0.001$) between T1 and T2 ($p < 0.05$), T1 and T3 ($p < 0.01$) and T1 and T4 ($p < 0.05$), with increases of 4.57, 6.77 and 5.07 respectively. By contrast, although non-CLIL students improved more between T1 and T4 than the CLIL group (6.13 vs. 5.07), the former showed a more irregular performance and no significant differences between times were observed.

3.2 Intra-group Comparisons Keeping Hours of Exposure Constant

In addition to longitudinal within-group comparisons of written development, CLIL and non-CLIL groups were also contrasted while equating the number of hours of exposure to the target language (namely, CLIL at T2 vs. non-CLIL at T3, after 210 h of instruction). Furthermore, both groups were also compared with increased exposure in favour of the non-CLIL students (i.e. CLIL at T2 vs. non-CLIL at T4, after 210 and 315 h of instruction respectively). The results of both comparisons to evaluate participants' written performance for CAF measures and holistic assessment will be presented in the following sections.

3.2.1 CAF Measures

Broadly speaking, CLIL learners at T2 surpassed their non-CLIL counterparts at T3 and T4 in the three analytical dimensions analysed, namely complexity, accuracy and fluency, with their advantage being more noticeable in the area of fluency. However, none of these differences were statistically significant.

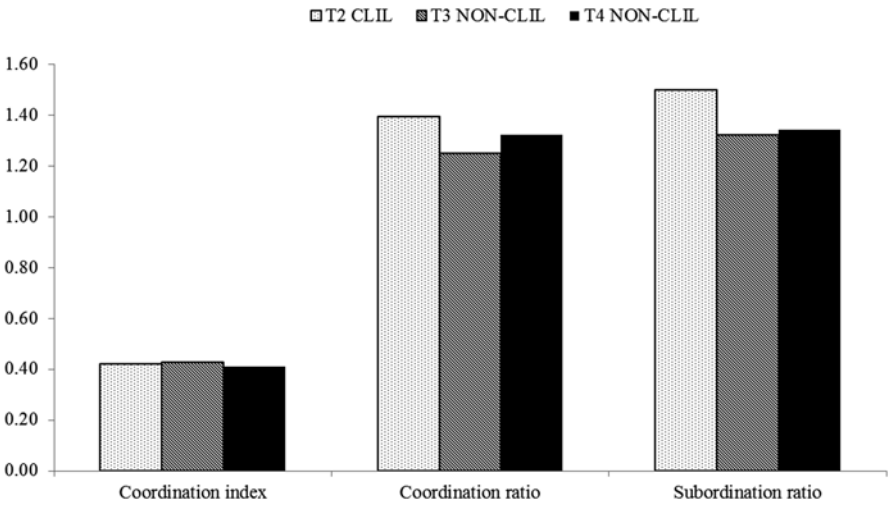

Fig. 8 Comparison of T2 CLIL vs. T3 and T4 non-CLIL participants (syntactic complexity)

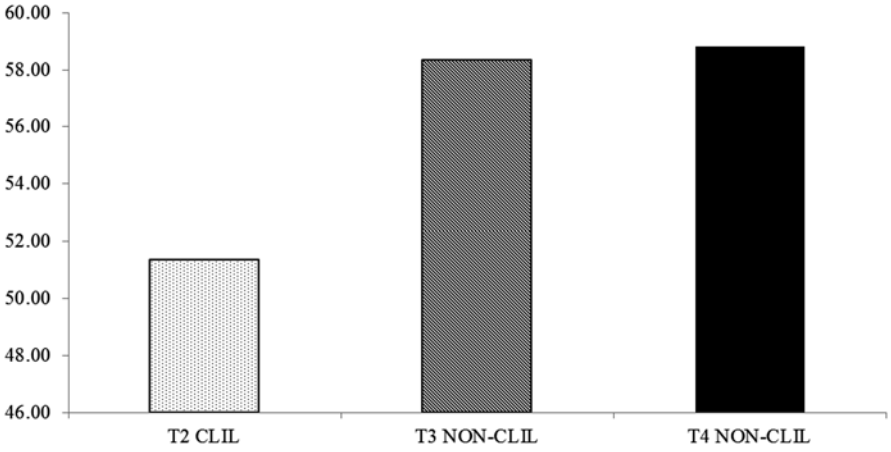

Fig. 9 Comparison of T2 CLIL vs. T3 and T4 non-CLIL participants (lexical complexity—D-index)

As far as complexity is concerned, a different pattern was observed when comparing both groups' syntactic and lexical complexity, as depicted in Figs. 8 and 9, respectively. In syntactic complexity, CLIL learners at T2 performed better than their non-CLIL counterparts at T3 and T4—except for the coordination index, in which the two comparisons yielded very similar results—(Fig. 8). Nevertheless, the results in the case of lexical complexity—as measured by means of the D-index—were reversed, with the non-CLIL group at T3 and at T4 performing better than CLIL learners at T2 (Fig. 9). These findings suggest that, overall, CLIL learners

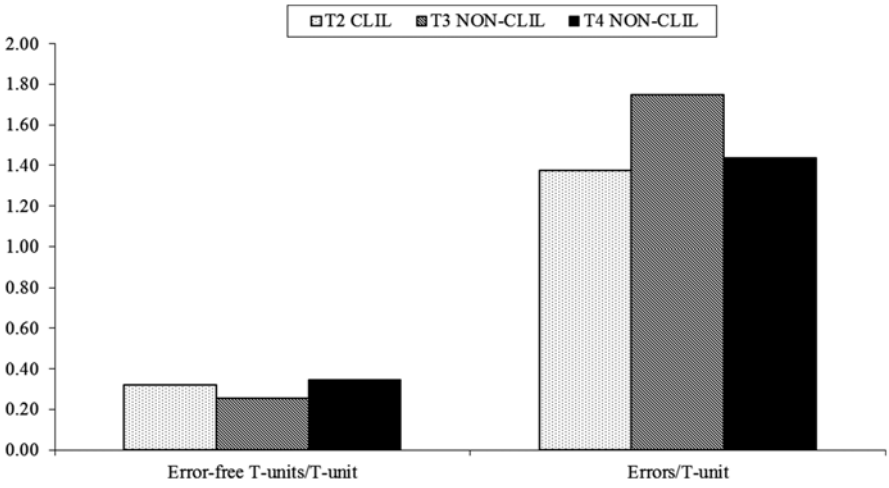

Fig. 10 Comparison of T2 CLIL vs. T3 and T4 non-CLIL participants (accuracy)

at T2 tended to write more coordinated and subordinated clauses—and thus more syntactically complex texts—than their non-CLIL counterparts at T3 and T4, whereas written compositions by non-CLIL students at T3 and especially at T4 tended to contain more different word types (i.e. they were lexically richer) than those produced by their CLIL counterparts at T2.

With regard to accuracy, in error-free T-units per T-unit, CLIL learners at T2 outperformed non-CLIL learners at T3, but not at T4. By contrast, in errors per T-unit, the CLIL group surpassed both T3 and T4 non-CLIL participants, suggesting that the former seemed to produce fewer errors per T-unit. These results are illustrated in Fig. 10.

Finally, in fluency, more clear-cut differences arose in favour of CLIL learners at T2, as shown in Fig. 11. More specifically, CLIL students at T2 outperformed their non-CLIL counterparts at T3 and T4 in T-units per minute and especially in words per T-unit and minute. This points to the fact that CLIL students tended to produce longer (in terms of both words and T-units) and, thus, more fluent texts at T2 compared to their non-CLIL counterparts at T3 and T4.

3.2.2 Holistic Assessment

Overall, when holistically assessed, CLIL students at T2 tended to outperform their non-CLIL counterparts at T3 and T4 in every item—i.e. content, organisation, vocabulary, language use and mechanics—, as well as in total score. These differences turned out to be statistically significant in the case of organisation, language use and total score. Our results indicate that the texts written by CLIL participants at T2 were

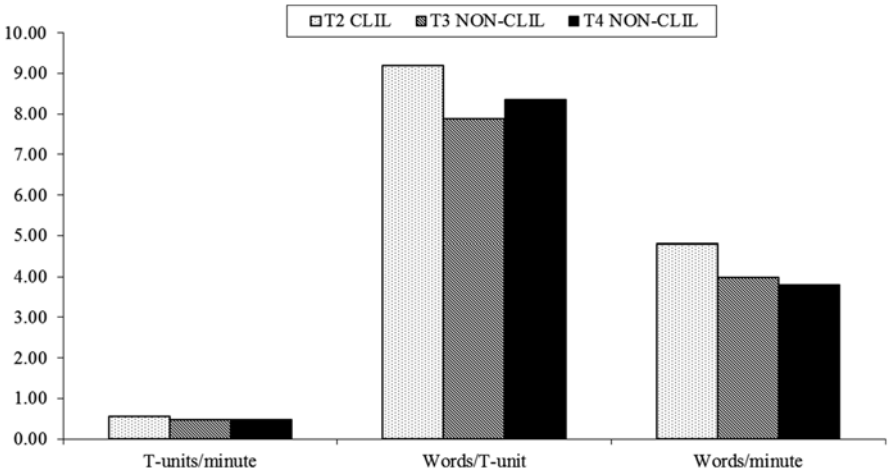

Fig. 11 Comparison of T2 CLIL vs. T3 and T4 non-CLIL participants (fluency)

better overall, more organised and used syntactic structures more efficiently than those produced by their non-CLIL counterparts, despite the fact that the latter were 1 or 2 years older.

With regard to content, the CLIL group at T2 surpassed their non-CLIL counterparts at T3 and T4, with differences of 1.83 and 1.57 respectively (see Fig. 12). This finding may suggest that CLIL students at T2 tended to write texts which were more content-oriented and relevant to the assigned topic than the non-CLIL group did at T3 and T4.

As far as organisation is concerned, Fig. 12 depicts that CLIL learners at T2 significantly outperformed their non-CLIL peers at T3 ($F=0.30$; $p=0.001$) and even at T4 ($F=0.33$; $p=0.002$), with differences of 3.83 and 3.67 points respectively, thus indicating that CLIL students at T2 wrote better organised, more cohesive texts than the non-CLIL group at either T3 or T4.

Regarding vocabulary, CLIL students at T2 outperformed non-CLIL participants at T3 by 2.30 points and at T4 by 1.57 points, indicating that the written compositions produced by the former tended to use more sophisticated and appropriate lexis (Fig. 12).

As can be clearly visualised in Fig. 9, CLIL students at T2 attained better written competence in language use than their non-CLIL counterparts at T3 and T4, with a statistically significant difference ($F=0.37$; $p=0.009$) at T3 (3.60 points higher) and nearly statistically significant ($F=0.29$; $p=0.029$)[5] at T4 (3.27 points higher). These results indicate that the CLIL group at T2 produced texts with more effective,

[5] In accordance with the Bonferroni correction, in comparisons between groups, level of significance (p-value) was set to 0.025.

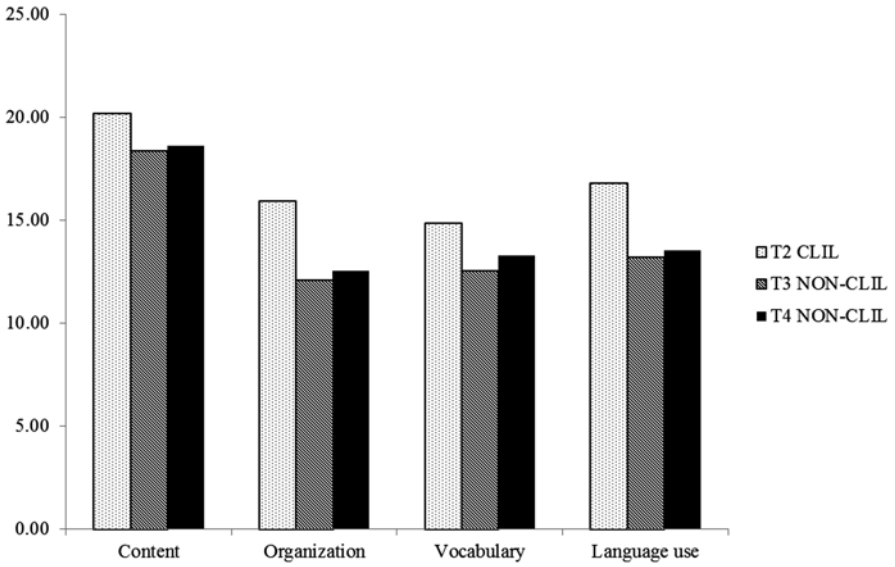

Fig. 12 Comparison of T2 CLIL vs. T3 and T4 non-CLIL participants (content, organisation, vocabulary and language)

complex constructions and with fewer morpho-syntactic errors than non-CLIL students at both these data collection times.

In mechanics, again CLIL participants were better than their non-CLIL counterparts, when comparing the former at T2 with the latter at T3 and T4. This evidence points to an improved performance of CLIL students at T2 in terms of language conventions compared to non-CLIL students at T3 and especially at T4 (Fig. 13).

Finally, when the total score was calculated (to account for overall written performance), findings also uncovered the superiority of CLIL learners at T2 compared to non-CLIL students at T3, a difference which is statistically significant ($F=0.31$; $p=0.015$), and at T4, a difference which nears significance ($F=0.30$; $p=0.029$). These results indicate that CLIL learners' written texts at T2 were on the whole better than those produced by non-CLIL students at T4, and especially at T3 (Fig. 14).

4 Discussion and Conclusions

Broadly speaking, the longitudinal general analysis of CLIL and non-CLIL participants seems to confirm the greater effectiveness of the CLIL approach, in combination with formal instruction, with regard to written production in EFL, compared to formal instruction on its own. This is not in line with the research review by Dalton-Puffer (2008), according to which writing would appear among the areas likely to

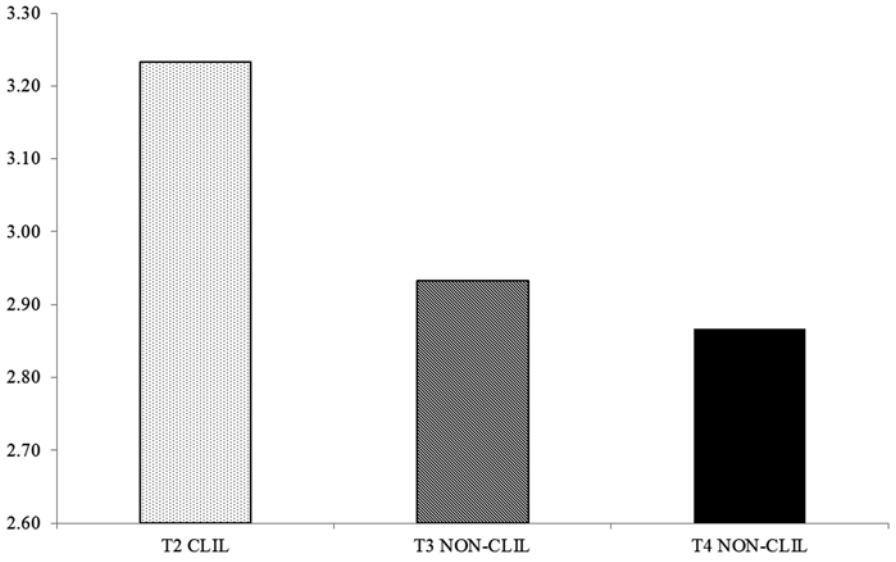

Fig. 13 Comparison of T2 CLIL vs. T3 and T4 non-CLIL participants (mechanics)

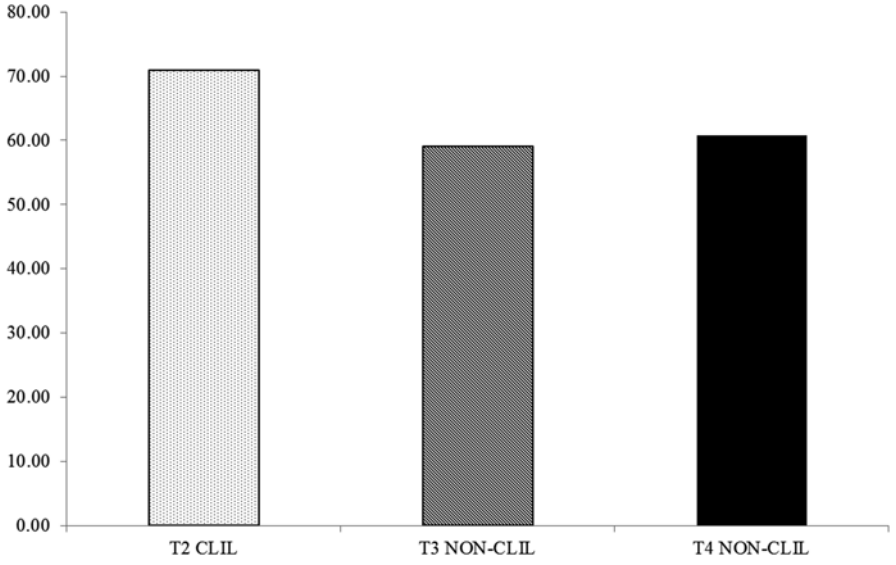

Fig. 14 Comparison of T2 CLIL vs. T3 and T4 non-CLIL participants (total score)

be unaffected by CLIL, but mostly supports the findings by Lasagabaster (2008), Ruiz de Zarobe (2010) and Navés (2011).

In reply to our first research question, looking into participants' longitudinal progress in writing, our data revealed that CLIL students showed overall higher written competence over the 3-year span considered (i.e. between T1 and T4), but especially over the two first years (i.e. between T1 and T3). More specifically, CLIL learners improved significantly in the three subdimensions of language competence (namely complexity, accuracy and fluency) and in particular in six out of nine CAF analytical measures (i.e. coordination index, subordination ratio, D-index, error-free T-units per T-unit, errors per T-unit, and words per minute). Generally speaking, these results indicate that CLIL participants' texts progressively became more complex, both syntactically and lexically, more accurate and more fluent. However, in the domain of fluency, between T3 and T4, although CLIL learners produced longer T-units, a significant decline was observed in composition length (in T-units and words per minute). This result may probably be due to participants having reached their text length ceiling, which deserves further analysis, as well as to an effect of weariness resulting from task repetition.

When holistically assessed, CLIL students also attained higher longitudinal development, with significant differences in three of the five items under study (namely organisation, vocabulary and language use) and in overall written performance, which means that their texts gradually improved and became especially more cohesive and better organised (in line with Whittaker et al. 2011), with increasingly more effective lexis and syntactic structures. Despite these significant gains, it is noticeable that the results in holistic assessment were not remarkably good at any research time, with most of them falling into the fair-to-poor range. Only in organisation were results slightly better ("good to average"). This is an indication that there was still room for improvement in the written competence of CLIL participants, in agreement with the results obtained by Ruiz de Zarobe (2010). This scholar found that, on average, CLIL secondary education students scored within the good-to-average range in every written competence feature.

Content is an area in which both CLIL and non-CLIL students scored low, due to the fact that they showed a limited development of the topic proposed. Although clear instructions were provided concerning what they were requested to write about, the participants produced texts that were not fully meaningful from a functional linguistics perspective (Halliday 1996). More specifically, our findings show that their written compositions often failed to fulfil genre requirements in that they did not always respect e-mail conventions (e.g. lack of an appropriate beginning and ending) and that they did not always deal with all the various components mentioned in the task (i.e. title, storyline, time, characters and personal opinion about the film watched and activities done after seeing it). The fact that compositions written by CLIL students in science or social science classes were usually more real and content-oriented compared to those practised in formal instruction contexts did not seem to make any difference in this respect, probably because the written tasks gathered for this research were not content-specific and did not require specialised knowledge or vocabulary, which is typically practised and acquired in CLIL classes.

For this reason, we cannot make observations regarding the subject-specific features of our CLIL participants' texts (cf. Llinares and Whittaker 2006). Yet, the poor results in content obtained by the CLIL students in our study are not in line with Ruiz de Zarobe's (2010).

Our data also reveal that non-CLIL learners attained significant longitudinal improvement only in two out of nine CAF measures, both corresponding to accuracy, which may be accounted for by the prominent focus-on-form approach present in most EFL classes in the Spanish context. No significant differences were observed in holistic rating, in which the outcomes of all the items fell within the fair-to-poor scale—showing that a much greater improvement in written production by non-CLIL students is also desirable. These holistic results are partially in line with those of Lasagabaster (2008). This scholar, using a larger sample of Basque participants and comparing two groups of CLIL learners and one of non-CLIL students in relation to every language skill at a single data collection time, found that the former surpassed the latter in every holistic item used to evaluate the writing test.

Although there are features difficult to control in research involving real learning contexts (e.g. onset level or socio-economic background) which may play a key role in explaining the overall advantage shown by CLIL participants, the comparison of existing programmes adds ecological validity to our research, as mentioned in the Analysis section above. Even so, it should be noticed that non-CLIL learners in our study, who learn English exclusively through formal instruction, seemed to register scant improvement in their writing skills in EFL over a 3-year span, thus finishing CSE (i.e. T4) with low levels of written competence in English. This deficiency may suggest that extended formal instruction focussed excessively on target language forms does not lead to improved written production. The low level of English attained by our high-school learners might make it more difficult for them to succeed in their future working life and, thus, would deserve further pedagogical consideration.

To sum up, our longitudinal findings show clear improvement in overall written competence by CLIL students (both at micro-level and more globally), affecting mostly accuracy and their lexico-grammatical and discursive skills over time and especially throughout the first 2 years of CSE (i.e. between T1 and T3), compared to significant progress attained by the non-CLIL group only in the accuracy domain. In our study, both groups of participants displayed initial similar written competence at T1, with significant differences in favour of the CLIL students found in only one out of the nine analytical measures analysed, which seems to confirm the existence of a positive relationship between the amount of meaningful exposure to the target language and learning outcomes, as claimed by Ruiz de Zarobe (2010). Our findings, thus, lend support to the usefulness of content-based semi-immersion approaches such as CLIL to complement conventional formal instruction. In this sense, CLIL allows for the learning of a foreign language without having to devote extra time to its teaching (i.e. the *two-for-the-price-of-one* argument cited by Bruton (2013)), which is crucial in an already crowded curriculum.

In order to avoid the effectiveness of the CLIL approach being attributed only to the greater exposure to the target language it affords, and thus, have more evidence to advocate its added value in the development of written competence, our second

research question compared the written performance of the two groups of participants when hours of instruction did not favour CLIL learners. On the whole, our data reveal that CLIL students were better at writing than non-CLIL students both when hours of instruction were kept constant (i.e. CLIL at T2 vs. non-CLIL at T3 [210 h in both cases]) and when they were increased in favour of the latter (i.e. CLIL at T2 [210 h] vs. non-CLIL at T4 [315 h]). Similarly, Ruiz de Zarobe (2010: 205) reported that "the CLIL group outstrips the non-CLIL group in each of the five scales [of the holistic assessment] of the writing test. CLIL students reach higher levels of written competence, despite the difference of hours of exposure […] and the age difference".

No statistical differences were found in the case of CAF measures in any of the two inter-group comparisons of the present study, which is in line with Roquet's (2011) findings (although she analysed the students at two research times, not four, and using different comparisons and measures), revealing that CLIL learners did not perform better in writing than non-CLIL learners with similar exposure but with an age difference in their favour, probably due to cognitive development constraints associated with age.

However, the holistic analysis performed in the present study revealed that CLIL students at T2 significantly outperformed their non-CLIL counterparts at T3 and T4 in the case of organisation, language use and total score. These results must be interpreted with caution since the fact that compositions written by non-CLIL learners were shorter on average than those by their CLIL counterparts might have been to the detriment of the former's scores on some items as they might have given raters an overall worse impression.

Moreover, in one academic year, CLIL students improved significantly in one accuracy measure (errors per T-unit), as well as in organisation, vocabulary, language use and overall competence, whilst in 2 years non-CLIL learners progressed significantly only in two accuracy measures (errors per T-unit and error-free-T-units per T-unit). This finding points to an advantage in favour of the CLIL students for written development, even when comparisons were made keeping the hours of exposure to the target language constant.

Importantly enough, the results presented herein were gathered in a multilingual secondary education context where English constituted an additional language for the learners, who were exposed to a limited amount of target-language input (Sanchez 2014; Juan-Garau and Salazar-Noguera 2015). More specifically, in both the EFL and CLIL classrooms analysed, and in the Balearic Islands in general, the teachers were not native speakers of the target language and the CLIL approach was included only in one single subject per year, usually amounting to 3 h of instruction through English per week. What is more, writing has generally received little attention in EFL classes in Spain (Chaudron et al. 2005), and overall language competence has not played a central role in CLIL classrooms. In that sense, our results may be generalised to other Spanish secondary education contexts sharing the aforementioned features. More favourable contexts (i.e. with native teachers, increased hours of CLIL instruction, a greater focus on language competence, and specific attention to writing skills) would be more likely to enhance the

positive effect of CLIL on writing skills and, consequently, lead to improved written performance in EFL.

In short, the present longitudinal research investigating the written language development of CLIL and non-CLIL secondary education students over three consecutive years seems to confirm that, although there is still room for improvement, as neither of the two groups of participants obtained outstanding scores, CLIL students made more and faster progress than their non-CLIL counterparts in their writing skills. In that sense, the CLIL approach—which represents an integrative model to language learning—appears to be more effective in fostering written development than formal instruction in isolation. Nevertheless, some questions still remain inconclusive and hence more research on the effect of CLIL on written development over time is needed to confirm or reject our results. Thus, following Kormos (2011: 149), we hope that this "perspective […] can provide an example on the basis of which further research using a larger corpus and a wider variety of text types can be conducted".

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Does CLIL Enhance Oral Skills? Fluency and Pronunciation Errors by Spanish-Catalan Learners of English

Lucrecia Rallo Fabra and Karen Jacob

1 Introduction

1.1 Fluency and L2 Learning

The differences between native and non-native speakers of a language in terms of the speed of delivery and accent are widely acknowledged. Unlike the effortless nature of L1 speech, the production of L2 speech is more cognitively demanding thus affecting the speed of delivery. Kormos (2006) suggests that this difference can be explained by the interaction of different factors, including "poor knowledge of L2 lexis, syntax, morphology and phonology, attentional resources needed for suppressing L1 production procedures, and greater demands on self-monitoring" (p. 154). The lack of automaticity is thus responsible for a slower rate in the speech of L2 learners.

The terms *fluent* and *fluency* have different meanings depending on whether they are used as language testing instruments or as measurable variables in empirical studies of L2 speech learning. In L1 speech, Fillmore (1979) described a "fluent speaker", quantitatively, as someone who fills time with talk—a non-stop talker—and, qualitatively, as someone whose speech is coherent, complex and dense. Often, when the term fluency is applied to L2 learners, it is used in a broad sense and, as such, it is often conflated with *proficiency* so that we refer to a speaker as being fluent when this speaker has a good overall command of the target language.

Other authors conceptualize fluency in a narrower sense. For instance, Lennon (1990) acknowledges that it is a language testing instrument, but that it is different from other criteria in oral language exams such as accuracy or appropriacy. He defines fluency as a purely performance phenomenon, "an impression on the listener's part

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that the psycholinguistic processes of speech planning and speech production are functioning easily and efficiently" (p. 391). Schmidt (1992) claims that fluency is a primarily temporal phenomenon and refers to fluent speech as an "automatic procedural skill that does not require much attention or effort from the speaker, whereas non-fluent speech is effortful and requires a great deal of attention, resulting in non-fluent speakers exhibiting many hesitations and other manifestations of groping for words and attempting to combine them into utterances" (p. 358). Based on Levelt's (1989) speech production model, Segalowitz (2010) claims that L2 speakers' fluency has its origins in the formulator, in which lexical access, phonological short-term memory, and control of attention determine the final productions of the articulator.

The aforementioned authors provide accurate conceptualizations of fluency, but they fail to operationalize which aspects of the speech signal are relevant to distinguishing between fluent and non-fluent speakers. More recently, research has focused on determining the factors that contribute to listeners' perceptions of L2 fluency. For instance, Derwing et al. (2004) measured L2 fluency in low-proficiency Mandarin speakers of English subjectively by means of listeners' judgments and objectively with five temporal measures, including mean length of runs, self-repetitions, speech rate and a composite measure of "pruned syllables" in which all types of disfluency were removed. Through a series of regression analyses, they found that temporal measures, especially pruned syllables per second, were good predictors of subjective fluency, in that they accounted for listener judgments relatively well.

Similarly, Iwashita et al. (2008) found that speech rate, silent pause rate, and total pause time correlated with proficiency level, speech rate providing the strongest correlation. Cucchiarini et al. (2000) also reported strong correlations between listeners' judgments of fluency and two objective measures, articulation rate and number of pauses. In a follow-up study (Cucchiarini et al. 2002), they found that speech rate and phonation time ratio were important correlates of fluency for beginners, whereas mean length of runs was an important correlate of fluency in spontaneous speech among intermediate learners.

An important contribution of some of these studies is that they used computer-based techniques that automatically detect silences and syllable nuclei to compute fluency measures without the need to transcribe the speech samples first. These techniques have facilitated the study of L2 speech corpora in formal instruction settings. Along this line, Toivola et al. (2010) investigated the developments in the temporal properties of L2 Finnish spoken by low-proficiency adult learners from different L1 backgrounds—Thai, Chinese, Russian and Vietnamese. They found changes in the articulation rate and the number and duration of pauses of the speech samples obtained at three data collection times over a 1-year period of observation.

Mora and Valls-Ferrer (2012) explored the effects of a study abroad (SA) period on the oral production skills of advanced-level Catalan-Spanish undergraduate learners of English. Speech samples elicited through an interview at three data collection times over a 2-year period were quantitatively assessed for fluency, accuracy and complexity. Fluency was measured through a complete battery of measures including, speech rate, articulation rate, phonation ratio, mean length of runs, dysfluency ratio, pause frequency and pause/time ratio. Overall, participants showed robust fluency gains during SA, moderate

improvement in accuracy, and lack of gains in complexity. No gains were found during the formal instruction period.

1.2 Immersion Programs and Pronunciation

The positive effects of immersion education on students' linguistic skills are well documented in the literature. For instance, Genesee (1987) reported that English-speaking children in early total French immersion programs in Canada scored as well as the control group on all scales of the oral production evaluation, including comprehension, pronunciation, grammar, vocabulary and comunicativeness, in all grade levels. When tested on their L1 linguistic abilities, these students reached parity with their English control peers in listening comprehension, oral production or oral vocabulary skills, showing that immersion education was highly beneficial and it did not affect students' native language development. However, few studies have investigated L2 pronunciation in immersion settings. A study by Hammerly (1991) showed that early French immersion pupils, who entered the program at age five or six, still spoke French with an English accent 12 years later. Late immersion students who started immersion at puberty exhibited even stronger foreign accents.

More recently, Harada (2007) examined the pronunciation of Japanese voiceless stop consonants by English-speaking children aged 6–10 in a Japanese immersion program. He found that the immersion children produced the Japanese /p t k/ with significantly longer VOT[1] values than the monolingual Japanese children and the immersion teachers, but they produced them with significantly shorter VOT values than their English VOT. This suggested that the immersion students were able to distinguish between English and Japanese /p t k/ phonetically, though they implemented the VOT contrast in a non-target-like fashion, producing voiceless stops that were intermediate between English and Japanese.

The studies reviewed investigated total immersion settings in which the target language was introduced in kindergarten (early immersion) or in elementary school (delayed immersion). To our knowledge, only two studies have explored L2 pronunciation in late partial immersion settings, that is, when the onset of immersion is around puberty and the amount of L2 instruction is less than 50 % of the school curriculum. One of these studies was conducted by Gallardo del Puerto et al. (2009) in the Basque Country. Participants were two groups of Basque-Spanish students aged 14–16 with 6–7 years of English exposure through formal language instruction (FI). One group received extra English exposure by means of content and language integrated learning (CLIL). Pronunciation was assessed by inexperienced native English listeners, who rated excerpts from a story-telling task on the basis of foreign accent, foreign accent intelligibility and foreign accent irritation. Results showed

[1] VOT (voice onset time) is defined as "the duration of the time interval by which the onset of periodic pulsing either precedes or follows release" (Lisker and Abramson 1964: 387). VOT has been used in many cross-linguistic studies that investigate the acquisition of L2 stops (see Amengual (2012) or Rallo Fabra (1998) for a review).

that CLIL students' pronunciation was rated as more intelligible and less irritating than the non-CLIL students' pronunciation. However, no significant differences in foreign accent ratings were found between the two groups of learners. The authors attributed these outcomes to the fact that the tutors in charge of CLIL instruction were not native English teachers and, as such, CLIL students were not exposed to authentic input as would have been desirable.

Rallo Fabra and Juan-Garau (2011) also investigated the effects of the CLIL program in the Balearic Islands on Spanish-Catalan learners' production. Four experienced native English listeners rated excerpts of read aloud speech for intelligibility and foreign accent. Overall, CLIL learner speech was perceived as more intelligible than non-CLIL speech, but all speech samples were heard by the listeners as equally accented, suggesting that CLIL instruction did not have an ameliorating effect on perceived foreign accent. They also noted that many pronunciation errors could have been the consequence of task effects. Since only read-aloud speech samples were used, many pronunciation errors may have been "spelling-induced" caused by a mismatch between English graphemes and phonemes.

1.3 The Role of Orthography on L2 Pronunciation

From a very early age, infants from different linguistic backgrounds can discriminate the differences between non-native speech sounds, regardless of the language. These language-universal perceptual abilities have been well documented in the literature (see Strange 1995 for a review). As early as the first year of life, speech perception becomes attuned to the speech sounds of the ambient language causing infants' perceptual abilities to decrease gradually. Burnham et al. (2002) claim that the onset of the orthographic period around the 6–8 age span strongly contributes to the decrease of speech perception. Reading instruction and phoneme-to-grapheme conversion rules have been hypothesized to negatively influence children's sensitiveness to non-native speech sounds. In a study with native English children, it was found that reading abilities were correlated with the attenuation of non-native speech perception. These findings were accounted for by contemplating the fact that, orthographically, English is considered an opaque language, in that there is not a one-to-one correspondence between graphemes and phonemes.

More recently, Erdener and Burnham (2005) investigated the effect of orthography on non-native speech production and writing by two groups of monolinguals, Australian-English (opaque orthography) and Turkish (transparent orthography). Participants were recorded performing various pronunciation tasks in different orthographic and audio-visual conditions, combining auditory information, visual information and orthography. The target non-words were taken from two languages varying in orthographic depth, namely, Spanish (transparent orthography) and Irish (opaque orthography). They found that orthography had a facilitating effect in pronunciation if the target language had a transparent orthography, such as Spanish. If the target language had an opaque orthography, as is the case of Irish or English,

orthography increased substantially the number of phonemic errors produced by the speakers. More importantly, the authors suggested that, at the first stages of exposure to a foreign language, orthographic input may not be beneficial to learners whose L1 has a transparent orthography, as in the case of Spanish or Catalan.

The role of orthography in L2 pronunciation by learners from different linguistic backgrounds has also been reviewed by Basetti (2009). In line with Erdener et al., she acknowledges that languages differ in terms of phonological transparency and that, in some cases, orthographic input may facilitate L2 production. However, orthographic input can also trigger non-target-like pronunciations, which might have been avoided if learners had only been exposed to auditory input. This was illustrated with the case of inexperienced Chinese speakers, who would pronounce the English spelling *ui* as /uei/, whereas Italian or Spanish speakers would say /ui/. These non-target-like pronunciations are the consequence of a mismatch between the L1 and L2 grapheme-phoneme conversion rules and question the facilitative role of orthography in classroom-based L2 learning.

2 The Present Study

This study examined oral language performance in two groups of EFL learners; a group of students who received CLIL instruction in English, plus the compulsory traditional English language classes, and another group who only received FI. Our primary aim was to investigate the impact of 2 years of CLIL instruction on students' oral performance in English. Two research questions were addressed:

1. Does CLIL instruction ameliorate students' fluency in English?

We addressed this question by measuring various temporal features of speech from a picture story task at two points in time, the onset of the participants' inclusion in the CLIL program (time 1) and an additional point about 2 years after the onset of the CLIL program (time 3).[2] The differences between CLIL and FI contexts as well as the development of fluency over time were analyzed statistically by means of two-way ANOVAs.

2. Does CLIL instruction reduce the number of vowel errors in English?

To answer this question, a native English speaker with phonemic transcription expertise transcribed a selection of vowel sounds taken from the reading aloud task at times 1 and 3. Differences between CLIL and FI students as well as time effects were examined statistically by means of two-way ANOVAs. Additional analyses were run to explore any possible effects of orthography on the pronunciation of English vowels by the two groups of learners.

[2] Participants were also recorded at the end of the academic year in which the CLIL program started (time 2). The language samples obtained at time 2 were analyzed for intelligibility and foreign accent in a previous study (Rallo Fabra and Juan-Garau 2011).

In the light of the findings of previous studies on L2 speech production in immersion and CLIL settings (Genesee 1987; Hammerly 1991; Harada 2007; Gallardo del Puerto et al. 2009) and other FI settings (Fullana 2006; Mora and Valls-Ferrer 2012), we predicted that CLIL students might exhibit modest gains in some fluency measurements, but they were unlikely to show gains in pronunciation measured as a percentage of target-like production of vowel sounds.

2.1 Method

2.1.1 Participants

Participants ($N=43$) were selected from two state-run secondary schools situated on the bilingual Spanish-Catalan island of Mallorca, in the Balearic Islands. All the students included in the analysis were from a Spanish-Catalan-speaking background. Data were collected as part of the COLE project, a state-funded project based in Catalonia and the Balearic Islands, Spain (see Juan-Garau and Salazar-Noguera 2015). For this chapter, data collected at T1 and T3 have been analyzed. The average age of the participants in both groups at T1 and T3 was 14 and 15 years respectively. All participants were included in the fluency analyses, however, a smaller subgroup was selected for the vowel error analysis (CLIL, $N=14$ and FI, $N=16$).

Group 1—a secondary school in Calvià, a touristic area on the south-west coast of the island—comprised 21 students who followed a combination of FI and CLIL instruction in English Language Teaching (ELT). They had 3 hours of FI per week along with the study of English in their social science class following a CLIL methodology. T1 corresponded to history and T3 corresponded to geography. Group 2 (FI), a secondary school situated inland in a village not too far from the capital of the island, Palma, comprised 22 students who followed a FI approach to ELT. This involved 3 h of instruction per week.

2.1.2 Speech Materials

The speech samples were obtained on the school premises. Each student was requested to perform two oral tasks, a guided task consisting in the reading aloud of a passage about the Atacama Desert in Chile, and a more extemporaneous task consisting in telling a story about a bank robbery. The tasks had been previously piloted with a group of 8 students from a third school to test whether the language level and the procedures were appropriate. The students were recorded in a quiet room by one of the members of the research group using an Olympus LS-10 Linear PCM recorder with a built-in microphone. They were allowed a few minutes to read the text and examine the picture story before they were recorded.

2.1.3 Measurement Procedures

Following the trends of recent research on L2 learner speech (Derwing et al. 2004; Kormos 2006; de Jong and Wempe 2009; Segalowitz 2010), the fluency measurements used in the present study combined temporal aspects of speech production with phonological error analysis. The temporal measurements were obtained from the extemporaneous speech samples (story-telling task) and they included four dependent variables:

1. Speech rate 1. This was calculated by dividing the total number of syllables by the total time required to produce the speech sample, including pauses, hesitations and fillers.
2. Speech rate 2. This was calculated by dividing the total number of English syllables by the total time required to produce the speech sample, including pauses, hesitations and fillers.
3. Speech rate 3. This was calculated by substracting self-corrections, self-repetitions, false starts, non-lexical filled pauses and asides, from the total number of English syllables. The resulting "pruned syllables" were then divided by the total time required to produce the speech sample.
4. Silent pauses per minute. These were defined as the total number of pauses over 0.2 s divided by the total amount of time spent speaking.
5. Mean length of pauses. This was defined as the total length of pauses above 0.2 s divided by the total number of pauses above 0.2 s.

All sound files were imported and annotated with the *Praat* program (Boersma and Weenink 2013) and transcribed orthographically. Speech rate was measured with a *Praat* script that automatically detects syllable nuclei through peaks in intensity (dB) that are preceded and followed by dips in intensity (de Jong and Wempe 2009). The total number of syllables calculated by the script was subsequently checked by hand. Pauses were also detected automatically with the *Praat* "Textgrid to silence" option. The minimum silence interval duration was set at 0.2 s.

For the read-aloud speech, the target words were marked in a separate annotation tier. A native speaker of English experienced in EFL speech, listened to the recordings in counter-balanced order and coded vowel identity using the symbols of the International Phonetic Alphabet. Only the vowel errors of a selection of words from the reading aloud passage were transcribed (see Table 1).

Table 1 Target words used in the phonological error analysis

/iː/	/ɪ/	/uː/	/ʊ/	/e/	/ɜː/	/ə/	/ɔː/	/æ/	/ʌ/	/ɑː/	/ɒ/
week	big	moon	look	best	earlier	amazed	water	happy	some	hard	fog
sea	building	food		very	word	shower	small	fact	nothing	last	top
									but	stars	

2.2 Results

The mean values and the standard deviations of the four fluency measurements are tallied in Table 2. At T1, the FI learners showed a slight advantage relative to their CLIL peers. In order to test whether this advantage was statistically significant, five independent-sample *t*-tests, assuming equal variance, were run. No significant differences were found in any of the three speech rate measurements: syllables/min (speech rate 1) [t (41) = -0,814 p = .42], English syllables/min (speech rate 2) [t (41) = -1,2 p = .23], or pruned syllables/min (speech rate 3) [t (41) = -0,199 p = .32]. In contrast, both learner groups differed significantly in terms of pauses/min [t (41) = -3,19 p < .05] and in the duration of the pauses [t (40) = 2,27 p < .05]. This calls for caution in interpreting learners' gains from T1 to T3.

2.2.1 Speech Rate

The mean speech rate measures obtained for each of the 44 subjects were submitted to three (2) Group and (2) Time two-way ANOVAs. No significant effects of group were found for the total number of syllables uttered in a minute (speech rate 1) [F (1, 80) = 0.969 p = .328], the number of English syllables per minute (speech rate 2) [F (1, 80) = 2.02 p = .159] or the number of pruned syllables per minute (speech rate 3) [F (1, 80) = 2.59 p = .111]. The main effect of time was significant for the three speech rate measures, speech rate 1 [F (1, 80) = 14.553 p < .001], speech rate 2 (English syllables only) [F (1, 80) = 17.26 p < .001] and speech rate 3 (pruned syllables) [F (1, 80) = 15.13 p < .001]. The Time × Group interaction yielded no significant results for any of the speech rate measures, speech rate [F (1, 80) = 0.056 p = .814], speech rate 2 [F (1, 80) = .10 p = .747] or speech rate 3 [F (1, 80) = 0.04 p = .835].

2.2.2 Pauses

Overall, at T3, both learner groups paused more often than at T1. However, the length of the pauses was shorter. The mean number of silent pauses per minute and the mean duration of pauses were submitted to two additional two-way ANOVAs. A marginal effect of group was found for the number of silent pauses per minute [F (1, 80) = 5.62 p < .05] and also for the mean length of pauses [F (1, 80) = 3.98 p < .05].

Table 2 Mean fluency measures calculated for the CLIL and FI learner groups at times 1 and 3

Group	Time	Syllables/min	Syl/min (English)	Pruned syl/min	Pauses/min	Pause duration
CLIL	1	1.28 (0.711)[a]	0.98 (0.729)	0.73 (0.607)	0.38 (0.184)	1.867 (1.398)
	3	1.80 (0.655)	1.61 (0.753)	1.24 (0.806)	0.61 (0.081)	0.865 (0.387)
FI	1	1.43 (0.560)	1.23 (0.624)	0.93 (0.667)	0.52 (0.097)	1.163 (0.443)
	3	1.90 (0.427)	1.77 (0.478)	1.50 (0.450)	0.60 (0.133)	0.877 (0.255)

[a]Standard deviations are in parentheses

The main effect of time was significant for both number of silent pauses per minute [F (1, 80) = 28.71 $p < .001$] and mean length of pauses [F (1, 80) = 22.17 $p < .001$]. Finally, marginally significant Group × Time interactions were also found for silent pauses/min [F (1, 80) = 6.88 $p < .05$] and mean pause duration [F (1, 80) = 4.43 $p < .05$]. Four additional one-way ANOVAs examining the main effect of time on both groups of learners were run. The main effect of time was significant for both the CLIL group [silent pauses/min F (1, 38) = 24.68 $p < .001$; mean pause duration F (1, 39) = 14.66 $p < .001$] and the FI group [silent pauses/min F (1, 42) = 4.97 $p < .05$; mean pause duration F (1, 42) = 6.909 $p < .05$], but significance levels for the latter only reached the .05 alpha decision level, indicating that, after 2 years of CLIL instruction, learners progressed significantly faster than their FI peers, who made only modest progress after 2 years of FI.

2.2.3 Pronunciation of vowels

In order to quantitatively assess the pronunciation of the English vowels by both groups of learners, a variable labelled "accuracy" was created. If the pronunciation of the target vowel was correct, it was considered a hit, if not, it was considered an error. The total number of vowel productions was submitted to a two-way ANOVA examining the main effects of Time and Group and the two-way interaction. The ANOVA yielded no significant effects of group [F (1, 1,485) = 0.056 $p = .814$] and no significant effects of time [F (1, 1,485) = 1.462 $p = .227$]. The two-way interaction was not significant either [F (1, 1,485) = 0.357 $p = .550$]. These results indicate that CLIL instruction had no effect on learners' pronunciation of English vowels and that neither group of learners made significant improvement over time. The percentage of times that a target vowel was identified as intended averaged across learners (CLIL and FI) and times (1 and 3) for each of the target English vowels is tallied in Table 3. Overall, learners had less difficulty with the vowel phonemes that have a similar phoneme in their L1 systems. Both Spanish and Catalan sound inventories include vowels that are close to English /æ/, /e/, /ʌ/ and /ɒ/, which were identified as intended at 80 % accuracy or higher. In contrast, vowels that do not have a similar phoneme in the L1 such as /uː/, /ɜː/, /ə/ or /ɑː/ are more difficult to pronounce (Flege 1995; Rallo Fabra and Romero 2012).

A close inspection of Table 3 revealed that many of the vowel substitutions might have been triggered by spelling. Based on previous research on the influence of orthography on L2 perception (Erdener and Burnham 2005) and L2 transfer (Rafat

Table 3 Percentage of times that each target vowel was identified as intended averaged across times (1 and 3) and groups

Group	Time	/iː/	/ɪ/	/uː/	/ʊ/	/e/	/ɜː/	/ə/	/ɔː/	/æ/	/ʌ/	/ɑː/	/ɒ/
CLIL	1	82	75	28	100	100	46	32	46	100	83	52	78
	3	96	71	46	86	100	39	50	61 %	98	95	52	93
FI	1	91	59	19	81	97	53	53	22	100	81	48	94
	3	91	72	16	87	100	41	50	25	100	81	50	100

Table 4 Phoneme-grapheme frequencies and classification of the target words according to phonological transparency

Vowel	Grapheme	Target word	Frequency	Transparent	Opaque
/iː/	ee	See	249		✓
	ea	Sea	245		✓
/ɪ/	i	Big	5,346	✓	
	ui	Building	16		✓
/e/	e	Best, very	3,316	✓	
/æ/	a	Happy, fact, last	4,192	✓	
/ɑː/	a	Hard, stars	474	✓	
/ɒ/	o	Fog, top	1,558	✓	
/ʌ/	o	Nothing, some	1,723		✓
	u	But	1,509		✓
/ɔː/	a	Small, water	165		✓
/ʊ/	oo	Look	114		✓
/u/	oo	Moon, food	173		
/ɜː/	or	World	321		✓
	ear	Early	29		✓

Note that Fry's (2004) classification relates to American English pronunciation. For this reason, the grapheme *a* in the word *last* is classified as an example of an /ae/ pronunciation. Nevertheless, in our analysis this grapheme was interpreted as /ɑː/ according to British English pronunciation rules

Table 5 Pronunciation of /ɪ/

	CLIL				FI			
	Time 1		Time 3		Time 1		Time 3	
/ɪ/[a]	/ɪ/	/ui/[b]	/ɪ/,	/ui/	/ɪ/,	/ui/	/ɪ/,	/ui/
Building	38 %	19 %	38 %	25 %	50 %	29 %	43 %	36 %
Big	81 %	0 %	100 %	0 %	100 %	0 %	92 %	0 %

[a]Only percentages (rounded up to the nearest whole figure) for the pronunciations /ɪ/ and /ui/ have been included here

[b]Phonetic representation of actual pronunciation

2010), we classified the target words as "transparent" and "opaque" on the basis of their spelling. For instance, the two words analyzed for the target vowel /ɪ/ were *big* and *building.* Of the two graphemes (*i, ui*), *i* was considered "transparent" or closer to Spanish-Catalan orthography, whereas *ui* was classified as opaque, since most Spanish-Catalan speakers would pronounce it as /uɪ/. The decision to classify a given grapheme as "transparent" or opaque was also made considering the frequency of occurrence of each grapheme as revised by Fry (2004). The classification of each grapheme is shown in Table 4.

The pronunciation problems caused by possible orthographic interference from the speaker's L1 as in the example of /ɪ/ (building and big) can be seen in Table 5. The percentage of correct pronunciations for /ɪ/ in *big* contrasts with that of *building* in that nearly 100 % were able to pronounce /ɪ/ correctly in *big,* but less than 50 % in both groups at time 1 and time 3 achieved a correct pronunciation in *building.*

Table 6 Pronunciation of **/ɑː/**

	CLIL				FI			
	Time 1		Time 3		Time 1		Time 3	
/ɑː/[a]	/ɑː/	/æ/	/ɑː/	/æ/	/ɑː/	/æ/	/ɑː/	/æ/
Last	6 %	88 %	0 %	100 %	0 %	92 %	0 %	100 %
Hard	75 %	13 %	69 %	31 %	71 %	14 %	71 %	29 %
Stars	69 %	25 %	81 %	19 %	64 %	28 %	64 %	36 %

[a]Only percentages (rounded up to the nearest whole figure) for the pronunciations /ɑː/ and /æ/ have been included here

An additional two-way ANOVA was run to examine whether the level of difficulty in pronouncing the target words would vary as a function of the vowel and/or as to whether the grapheme was classified as transparent or opaque. Both the main effects of vowel and spelling were significant [F (11, 1,486) = 18.09 $p < .001$, F (1, 1,486) = 16.13 $p < .001$]. However, the two-way interaction was not significant [F (1, 1,486) = .65 $p = .41$]. These analyses indicated that the chances of pronouncing a given vowel as intended depended on the target vowel and whether the grapheme was transparent or opaque. Pair-wise comparisons with Tukey's post-hoc analysis allowed us to establish an order of ease of pronunciation starting with the most difficult vowel phoneme to the easiest following this order: /u/, /ɔː/, /ɜː/, /ɑː/, /ə/, /ɪ/, /iː/, /ʌ/, /ɒ/, /æ/, /e/, /ʊ/.

It was also observed that in some cases, vowel sounds appeared to be "compromise" vowels between English and Spanish. This was especially noticeable with the words *moon* and *food* where the /uː/ frequently resembled /ʊ/, /ʌ/ or the Spanish or General American English (AmE) /u/, a vowel sound that is midway between the English Received Pronunciation (RP) /ʊ/ and the /uː/. One further finding worth mentioning was the pronunciation of *last*. Table 6 reflects the pronunciation of the grapheme *a* in the words *last, hard* and *stars.* Nearly 100 % of the participants pronounced the grapheme as /æ/, rather than /ɑː/ for the word *last,* which reflects a clear preference for the AmE pronunciation. Nevertheless, this case of vowel substitution appeared to be limited, as it did not outwardly affect the pronunciation of the words *hard* and *stars*, perhaps due to the fact that the vowel was followed by an *r* in both cases.

2.3 Discussion

In this study, we examined temporal measures of fluency along with phonemic errors to determine whether late partial immersion had any ameliorating effects on Spanish-Catalan EFL learners' pronunciation and fluency. Do students following CLIL-based instruction speak English more fluently and with fewer pronunciation errors? The analyses show that CLIL learners did not perform significantly better than their FI peers as far as fluency is concerned. Both groups spoke with similar speech rates and exhibited similar gains after 2 years, regardless of the amount and type of classroom-based instruction. This finding is in line with the assumption that overall exposure

to the L2 in the form of spoken language is a prerequisite for oral fluency development (Derwing et al. 2009). Furthermore, Segalowitz (2007) argues that a speaker can develop "high levels of access fluidity and attention control only through extensive exposure and practice with the target language in naturalistic communicative situations" (p. 184). The tutors in charge of CLIL instruction in the present study were not native English speakers. It follows that if learners were not massively exposed to L2 input, they were unlikely to develop higher fluency levels in a formal instruction setting.

We speculate that our outcomes might have been the consequence of task effects. There is evidence in the L2 literature that fluency is sensitive to task-type. Derwing et al. (2004) found that L2 learner speech was perceived by native English judges as being more fluent if the speaking task involved interacting with a native speaker. Fluency ratings of 20 beginner Mandarin learners of English were higher on the monologue and dialogue tasks than on the oral narratives. The authors noted that picture narratives are more cognitively demanding than tasks that offer the speakers more freedom of lexical and grammatical choice, such as a monologue or a conversation. The speech samples we used in the present study were elicited through a picture narrative. Many students showed serious limitations because they did not have the vocabulary they needed to describe the sequence of events that appeared in the pictures. This difficulty triggered many hesitations, fillers and pauses in the learners' speech. A question that remains unanswered is whether there is a relationship between learners' grammatical complexity and fluency measurements.

The results of the vowel error analysis showed that CLIL learners' pronunciation of English vowels was not significantly better than their FI peers'. Neither group of learners showed any improvement after 2 years of CLIL-based instruction. These results raise the question of whether 2 years of content-based instruction are sufficient to have a direct impact on learners' pronunciation. Furthermore, it should be highlighted that CLIL instruction in this case does not include specific activities to enhance students' discrimination of English sound contrasts or activities aimed at practicing pronunciation. Therefore, most learners were unlikely to develop mental representations for the English vowel categories that do not exist in their L1 or that are different from the L1 closest equivalents.

Another interesting finding of the present study is that vowel pronunciation errors are highly influenced by the phoneme-grapheme correspondences. Both groups of learners made fewer vowel errors when the target words had more transparent spellings, that is, closer to Spanish-Catalan phoneme-grapheme conversion rules. These results suggest that many pronunciation errors could have been avoided if learners had not relied so much on orthography, and raises the question of whether the introduction of written language in the initial stages of EFL learning should be delayed until the basic rules of pronunciation are well established.

We should also mention the possible influence of AmE on pronunciation. Although the participants were following a British RP-based language tuition program,—the preferred educational standard throughout Europe—the findings suggest that some of the errors could have been the result of an alternative pronunciation. Not only should we acknowledge this possibility but we also need to highlight the overall influence of AmE on the English spoken in Europe (Modiano 1996).

Although this phenomenon appears to affect both CLIL and FI equally, it would be interesting to acquire more information on the phonological nature of the input of English the learners receive both inside and outside the educational environment, paying special attention to language input from the film industry and the media. Recent research has shown that EFL learners who were exposed to audio-visual mass media improved their oral performance as compared to learners who were exposed to social interaction (Bahrani and Shu Sim 2012). Other findings in Computer Assisted Language Learning (CALL) have shown that considerable gains in L2 pronunciation can be achieved if traditional classroom-based instruction is complemented with ASR-based tools aimed at giving immediate feedback on pronunciation errors. For instance, the CAPT system was developed to help foreign learners of Dutch with difficult speech sounds (Neri et al. 2006). The Euronounce project (Demenko et al. 2009), for Slavic learners of German, includes pronunciation training in both segmental and suprasegmental aspects of speech. Some of these tools are designed for young learners. This is the case of Parling (Mich et al. 2006), a word recognition program to train Primary-level Italian learners with the sound-grapheme correspondences of English phonemes. All these systems have proved beneficial for learners' oral skills, either as an alternative to traditional classroom instruction or as self-learning resources.

Conclusion

This study contributes to the literature on L2 acquisition in that it provides data concerning the development of intermediate learners' oral skills in two learning contexts, FI and CLIL. Another contribution is that it provides outcomes in regard to the development of fluency over a 2-year period of time. The lack of robust significant differences in fluency between the two learning contexts shows some limitations of the research that should be addressed in future investigation. Some of these issues include analyses of listener judgments of fluency as well as measures of L1 fluency. Other suprasegmental measurements such as stress timing or peak alignment would provide a more thorough insight into learners' oral skills. Finally, it would also be interesting to investigate whether there is a relationship between fluency and the learners' performance in other skills such as grammar and vocabulary.

The uniformity of both learner groups in terms of pronunciation achievement seriously questions the effectiveness of CLIL to enhance learners' oral skills in a foreign language. The results of this research suggest that more work needs to be done to increase the quantity and quality of the oral input students receive. On the one hand, CLIL practitioners should broaden the learning scope for learners by encouraging them to listen to English through the media and facilitating the use of English in lingua franca settings. On the other hand, education authorities need to provide the necessary support to CLIL practitioners in order for them to be in a position to offer learners all the advantages available through the CLIL teaching system.

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Lexico-Grammatical Development in Secondary Education CLIL Learners

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1 Introduction

Research on the impact of immersion programmes on second language acquisition has generally shown benefits in comprehension and fluency, while lexico-grammatical accuracy has traditionally been seen to lag behind (e.g. Lyster 2007). This has led scholars to postulate the need for more focus on form in immersion and semi-immersion settings (e.g. Pérez-Vidal 2007).

However, the case has also been presented for content and language integrated learning (CLIL) approaches as beneficial learning contexts for the learner to acquire and eventually master lexico-grammatical competence in the target language (TL). After all, CLIL aims at fostering the learner's overall TL competence (Dalton-Puffer 2008). Thus, as opposed to traditional Focus-on-Form formal instruction (FI), CLIL has been said to present vocabulary and grammar in "authentic", "specific" contexts through "social activities in which students interactively construct their knowledge of language use and practices" (Wilhelmer 2008: 20–21).

This has led to claims that CLIL students cognitively process their L2 at a deeper, more intense level (Aliaga 2008). And there are even those who want to see in this approach the long-sought tool with which to bridge the gap between Krashen's (1987) desirable "acquisition" and more limited "learning". Thus, for Coyle et al., successfully implemented CLIL involves "the subtle overlap between language learning (intentional) and language acquisition (incidental)" (2010: 11), which could lead to the effective internalisation of morphosyntactic structures.

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Apart from the mostly theoretical views highlighted above, empirical studies have also been produced providing evidence of CLIL's potential language benefits. Among these, Dalton-Puffer (2008) signals vocabulary acquisition (crucially as opposed to syntax, a field in which research has not yet noted any conclusive advantage for CLIL students, as will be seen below). In her review, Dalton-Puffer argues that TL vocabulary gains are particularly significant when lexis is dealt with explicitly in the CLIL class, in fact a common occurrence (Llinares et al. 2012: 163–172; Mesquida and Juan-Garau 2013: 126). This might be seen to back up those views (see, e.g., Pérez-Vidal 2007) advising a greater presence of Focus on Form (FoF) in the CLIL classroom.

Ruiz de Zarobe's review (2015) is largely congruent with Dalton-Puffer's (2008), adding that vocabulary gains tend to be more visible in receptive, not productive, skills. Interestingly, findings are reported that CLIL learners generally outperform their non-CLIL peers in lexical richness and sophistication, "producing a higher number of lexical inventions", which Ruiz de Zarobe interprets as evidence that CLIL may foster a higher reliance on the TL rules that may help counterbalance undesired L1 transfer which non-CLIL learners are more dependent on.

Dalton-Puffer's (2008) findings are also largely congruent with those in Aguilar and Rodríguez (2012), an impressionistic interview- and questionnaire-based study enquiring into the perceptions of a group of engineering students. Their participants perceive vocabulary growth and improved listening skills after a 15-week semester in English-medium instruction at a Spanish university. Such perceptions are very much in line with those of the 670 12–14-year-old CLIL students from eleven schools across two different English-speaking countries that Coyle (2013) reports on. Combining three different data collection methods (questionnaires, respectful discussions and LOCIT) over 1 year, Coyle finds that participants generally report improved TL vocabularies (in this case, Spanish, French or German), including "the extension of content related lexis" (2013: 256).

For their part, Jiménez Catalán and Ruiz de Zarobe (2009) have researched the receptive vocabulary of both CLIL and non-CLIL primary school students, a crucial measure which has been related to both reading comprehension and incidental word learning. Their findings show significant differences to the advantage of CLIL learners. More recently, López-González (2014) provide evidence of the usefulness of CLIL, especially intensive (i.e. not extensive) bilingual programmes, in vocabulary building among Polish secondary-school learners of Spanish. Additionally, earlier research by Jiménez Catalán et al. (2006) also showed richer, more sophisticated active vocabulary among CLIL learners, although these authors carefully avoid attributing this exclusively to CLIL. Indeed, Sylvén (2004) had already found that CLIL students in Sweden were in possession of a significantly larger vocabulary than their non-CLIL counterparts. Although CLIL may have played a role in this, it was thought that additional exposure to the English language, regardless of method or learning context, also had a role to play. Thus, Sylvén (2006) specifically enquires into the reading of English texts outside the classroom context and its possible effects on the latter. When piloting her study, Sylvén found that CLIL students were substantially more exposed to English outside school, reading English books and

checking web-based materials in English twice as much as non-CLIL students. Needless to say, this has important attitudinal and motivational implications which deserve to be studied in their own right (see, e.g., Amengual and Prieto-Arranz 2015). Surprisingly, however, in her main study Sylvén finds that "[t]he […] extra-curricular exposure to English was […] strikingly similar [among both groups]", with the CLIL students showing a tendency to be more exposed to Swedish than their non-CLIL counterparts (Sylvén 2006: 50–51). This finding can of course be read in different ways, although it certainly seems to point back to the amount and quality of exposure to the English medium that CLIL offers to learners as a significant variable to be taken into account.

On the other hand, and as mentioned above, morphosyntax has been noted as one of those areas that do not particularly benefit from CLIL instruction. Thus, overall results seem to indicate that fluency tends to benefit more visibly from CLIL than accuracy, although Ruiz de Zarobe (2015) also reports "greater lexical and syntactic complexity" to be found among CLIL learners. However, she reports otherwise mixed results. For example, she states that, while research has shown that CLIL may have positive effects on some morphosyntactic aspects, many others seem to remain unaffected. This is very much in line with the results provided by García Mayo and Villarreal Olaizola (2010), showing no significant differences between CLIL and non-CLIL secondary school learners of L3 English in the Basque Country as to the acquisition of suppletive and affixal tense and agreement morphemes.

At first sight, this may be found slightly surprising when evidence has also emerged pointing to CLIL having a positive impact on the learner's competence in other highly complex language areas. By way of example, Nikula's (2007) report provides evidence of learners demonstrating near-native pragmatic behaviour in L2 English, although note should also be taken that her study is conducted in Finland, a country in which L2 English teaching and learning conditions might not be extrapolated to other (especially southern) European countries.

In any case, there seem to be reasons to be optimistic in the light of some of the evidence produced by the latest research. In her very vast study of CLIL student perceptions, Coyle shows that her participants (12–14-year old CLIL learners of Spanish, French or German) perceive that CLIL has aided them to "'put together' words into longer utterances" (2013: 256). Reporting from Hungary, Vártuki (2010) claims that CLIL students at secondary school level show higher social and academic language competence in English than their non-CLIL counterparts, the gap being particularly significant in such fields as context-appropriate lexical use, mastery of morphosyntactic rules and the discursive aspects of linguistic competence, including text coherence and adaptation to sociolinguistic context. Additionally, she puts parents' fears at rest concluding that the generally higher linguistic performance to be found among CLIL students is not at odds with their general metalinguistic, cognitive performance. This latter result, namely that CLIL does not result in defective content processing, is also obtained by Costa and Coleman (2010) who, for their part, report from Italy in a pioneering study of Italian higher education using English as the language of instruction.

Similarly, optimistic results have been shared by Lázaro Ibarrola and García Mayo (2012). In their study, the authors highlight that it is precisely in the field of morphosyntax that their CLIL participants, Spanish secondary school students, place themselves at an advantage over their non-CLIL peers. Similar participants can be found in Lázaro Ibarrola's (2012) study of morphosyntactic development in CLIL and non-CLIL secondary-school Basque-Spanish learners of L3 English. Her results place CLIL learners at a clear advantage, with higher correction rates as to the use of inflected verbs and pronouns, and significant growth as to the use of subordination.

Other studies, however, show no significant advantage for CLIL over non-CLIL learners. This is the case of Martínez Adrián and Gutiérrez Mangado (2009), who investigate whether CLIL instruction may minimise the impact of L1 transfer on English as a foreign language (EFL) learners. Their participants, again Basque-Spanish bilinguals, were lower secondary education learners of L3 English, and their morphosyntactic competence in English was measured through oral narration. Their results show that CLIL participants only significantly outperform their non-CLIL peers in one out of four different measures. This leads the authors to conclude that, although a trend has been detected pointing to CLIL somehow contributing to the minimisation of undesired L1 transfer in L3 English, results are far from definitive.

Taking into account the existing research into the possible effects of CLIL programmes on the learner's lexico-grammatical competence, Teddick and Cammarata (2012) conclude that results thus far obtained are at best mixed. This complexity is perhaps best illustrated by Aguilar and Muñoz (2013). Reporting from Spain, the authors attempt to measure the impact of one-semester CLIL programmes at postgraduate level. Among their findings, overall improvement is detected concerning the participants' grammar skills after treatment, although this does not reach statistical significance. Their results also show a clear effect of the participants' previous TL proficiency level, with the more proficient students performing more poorly after treatment whilst the least proficient participants improve significantly after a one-semester CLIL course.

Considering, therefore, that no conclusive results have so far been obtained regarding the development of lexico-grammatical competence in CLIL contexts, and that the empirical evidence available is still scanty, it is the aim of the present study to make a contribution in this direction by presenting findings on the growth of lexico-grammatical accuracy in lower secondary education CLIL learners. Thus, we intend to find out how context of learning (CLIL and non-CLIL) affects the lexico-grammatical development in lower secondary education English learners. To fulfil this objective, the following research questions were posed:

1. How does lexico-grammatical performance develop longitudinally—over 3 years—within each context of learning (CLIL and non-CLIL)?
2. How does CLIL participants' lexico-grammatical performance compare to that of their non-CLIL counterparts when hours of exposure to the target language are equated?

2 Method

2.1 Participants

Participants were two groups (CLIL vs. non-CLIL) of 13-year-old students ($N = 105$)[1] enrolled in year 2 of compulsory secondary education (CSE) at the start of the study, which coincided with the onset of the CLIL programme. They were all Catalan/Spanish bilinguals from five state-run schools in the Balearic Islands, Spain. Participants in the first group were learning either science or social science through the medium of English (CLIL group: $N = 70$) in addition to English as a Foreign Language (EFL), while the informants in the second group were exclusively learning EFL (non-CLIL group: $N = 35$). CLIL students had a total of 6 h of class delivered through English per week (3 h of content subjects taught in English + 3 h of EFL), whereas non-CLIL students had 3 h of EFL lessons per week. There were more male (59.7 %) than female (40.3 %) participants. Data examined in this study are part of the COLE project (see Juan-Garau and Salazar-Noguera 2015).

2.2 Research Instruments

Participants' lexico-grammatical development was analysed on the basis of their performance on a cloze test and a fill-in-the-blank tense-and-aspect test over a 3-year span.

Cloze tests are fully meaningful texts in which words have been deleted at certain intervals, so that the reader has to fill in the resulting blanks in order to reconstruct the meaning of the text (Lennon 1998). Successful cloze test completion goes beyond pure focus on form (Gibbons and Lascar 1998; Storch 1998; Keshavarz and Salimi 2007) and prompts text-level processing (Yamashita 2003), thus tapping into the learners' broader lexico-grammatical continuum, asking them to resort to their organisational knowledge. The cloze instrument used in this case included 15 gaps.

The fill-in-the-blank tense-and-aspect test used in this study contained a total of twelve blanks, which had to be filled in by marking the appropriate tense and aspect of verbs included in nine short dialogues. This type of exercise, based on the use of correct verbal forms, is mainly designed to test L2 learners' grammar skills through their ability to locate the situation at some point in time as well as to detect the internal temporal constituency of the situation (Huddleston and Pullum 2002). It is a type of task that participants were used to carrying out in their EFL classes.

[1] Our study being a longitudinal one, only participants that had completed all four data collection times, as described in Sect. 2.3, were eligible for analysis. Thus, participants that dropped out or failed to complete one of the two tests under study at a given data collection time were not considered.

2.3 Procedure

CLIL and non-CLIL learners' lexico-grammatical results were examined at four data collection times corresponding to three school years: T1 (at the beginning of year 2 of CSE, when the CLIL programme started), T2 (at the end of year 2 of CSE), T3 (at the end of year 3 of CSE), and T4 (at the end of year 4 of CSE).

In order to ensure reliability, tests were piloted, administered and marked consistently. On the basis of the item analysis conducted on the pilot sample using two classical measures, the facility value and the discrimination index, certain modifications were made to the initial cloze test so as to exclude those items that had proved too difficult and had very low discrimination. Correction was led by the so-called "acceptable word" method, i.e. taking as valid not necessarily the exact missing word but any word taken as correct by the authors with the help of two experienced native English teachers. No modifications were needed in the case of the fill-in-the-blank test. Two raters were involved in test scoring. Inter-rater reliability was calculated by having 10 % of the tests scored by both raters at the start of the correction process. The concordance correlation coefficient revealed a very strong agreement (0.98) between them. The few existing disagreements were discussed and settled before the remaining tests were assessed. To guarantee the requirements of validity, in the development of both tests, care was taken to include items that were deemed to measure the lexico-grammatical competence acquired by students through either context of learning (FI or CLIL).

The following statistical analyses were applied. After conducting satisfactory Kolmogorov-Smirnov and Shapiro-Wilk normality tests on our sample, the mean scores obtained at each data collection time (T1, T2, T3 and T4) for each of the measures, cloze and tense and aspect, were first compared using ANOVA tests and then by means of paired comparisons conducted with the Tukey technique. Intra-group analyses and inter-group analyses were carried out. Regarding inter-group analyses, both groups were compared by keeping the hours of exposure to the target language constant. Thus, CLIL participants at T2 (end of year 2 of CSE; age 14) were compared to their non-CLIL counterparts at T3 (end of year 3 of CSE; age 15).

3 Results

Results corresponding to participants' longitudinal lexico-grammatical development in CLIL and non-CLIL learning contexts are presented next for the cloze and tense-and-aspect tests. Additionally, comparisons between these two groups' performance in the aforementioned tests are provided.

Table 1 Cloze descriptive statistics for CLIL participants at T1, T2, T3 and T4

	N	Minimum	Maximum	Mean	SD
T1 cloze	70	0	10	4.4571	3.0923
T2 cloze	70	0	13	6.9286	3.4489
T3 cloze	70	0	14	7.8714	3.3120
T4 cloze	70	1	15	9.5714	3.2845

SD standard deviation

Table 2 Cloze statistics for non-CLIL participants at T1, T2, T3 and T4

	N	Minimum	Maximum	Mean	SD
T1 cloze	35	0	9	3.5714	2.0881
T2 cloze	35	0	11	4.3143	2.8754
T3 cloze	35	0	13	6.0571	3.6051
T4 cloze	35	1	15	7.5429	3.5930

SD standard deviation

3.1 Cloze

3.1.1 CLIL Group

Basic statistical information corresponding to cloze test scores for the CLIL group on a 15-point scale at T1, T2, T3 and T4 can be found in Table 1. The mean column indicates that CLIL participants make steady progress in the lexico-grammatical domain over the period under scrutiny.

A one-way within-subjects ANOVA with four levels (T1-T2-T3-T4) was applied to cloze measures revealing significant differences between data collection times for CLIL learners. Post-hoc paired comparisons were subsequently carried out using Tukey tests. Such paired comparisons produced significant differences between T1-T2 ($p<0.000$), with a 2.471 increase, T3-T4 ($p=0.014$), with a 1.700 rise, and T1-T4 ($p<0.000$), with an overall 5.114 increment, while the growth detected between T2-T3 did not reach significance ($p=0.334$). These results suggest that combined CLIL and EFL instruction had a positive effect on CLIL participants leading to visible overall gains, as well as gains in two of the three academic years considered.

3.1.2 Non-CLIL Group

The descriptive statistics corresponding to cloze test scores for the non-CLIL group at the different data collection times are presented in Table 2. Similarly to what has been observed in relation to the CLIL group, the mean column shows that there is a tendency towards progressive improvement for non-CLIL participants over the period studied.

As in the case of the CLIL group, data were submitted to an ANOVA analysis that revealed significant differences between times. Post-hoc Tukey comparisons between T1-T2, T2-T3 and T3-T4 produced no significant differences regarding the means obtained by non-CLIL participants ($p=0.753$, $p=0.096$, and $p=0.198$, respectively), indicating that the progress observed did not reach significance in cloze scores after any single academic year of EFL instruction. Significant differences, however, appeared after 2-year spans and overall: between T1 and T3 ($p<0.006$), with a 2.486 increase, between T2 and T4 ($p<0.000$), with a 3.229 rise, and between T1 and T4 ($p<0.000$), with a 3.971 global increase.

3.2 Tense and Aspect

3.2.1 CLIL Group

Descriptive statistics for the tense-and-aspect test, on a 12-point scale, are provided in Table 3 below. As was the case with cloze test analyses, results reveal a tendency for CLIL learners to gradually improve performance as regards the target-like use of tense and aspect forms.

CLIL participants' tense-and-aspect results were analysed through a one-way within-subjects ANOVA, with performance in the test as the dependent variable and time as the independent variable, which evinced significant differences between data collection times. More specifically, post-hoc Tukey analyses revealed all comparisons, except for the T1-T2 period, to be significant (i.e. T2-T3: $p<0.000$; T3-T4: $p=0.16$; and T1-T4: $p<0.000$; with increments of 2.100, 1.114 and 4.100, respectively). These results point to overall positive effects of combined CLIL and EFL treatment for CLIL participants resulting in a more accurate use of tense and aspect in English.

3.2.2 Non-CLIL Group

Tense-and-aspect mean scores and other statistical data corresponding to the non-CLIL group are given in Table 4. Once again, data show a clear incremental trend over time.

Table 3 Tense and aspect descriptive statistics for CLIL participants at T1, T2, T3 and T4

	N	Minimum	Maximum	Mean	SD
T1 T & A	70	0	6	1.6571	1.5108
T2 T & A	70	0	9	2.5429	2.0332
T3 T & A	70	0	9	4.6429	2.3545
T4 T & A	70	0	12	5.7571	2.6962

T & A tense and aspect, *SD* standard deviation

Table 4 Tense and aspect statistics for non-CLIL participants at T1, T2, T3 and T4

	N	Minimum	Maximum	Mean	SD
T1 T & A	35	0	4	1.0857	0.9061
T2 T & A	35	0	6	1.7429	1.5654
T3 T & A	35	0	9	2.8571	1.8128
T4 T & A	35	0	9	3.5714	2.3386

T & A tense and aspect, *SD* standard deviation

As in the previous sections (Sect. 3.1.1, 3.1.2, 3.2 and 3.2.1), the ANOVA analysis conducted enabled us to reject the null hypothesis. The subsequent post-hoc Tukey comparisons proved significant for 2-year periods (T1-T3: $p<0.000$; T2-T4: $p<0.000$) and overall (i.e. T1-T4: $p<0.000$), but only the second academic year on its own was significant (i.e. T2-T3: $p=0.048$) and barely so. These results suggest that EFL lessons were beneficial for the non-CLIL group in terms of increasing these learners' ability to use tense and aspect accurately in the target language. However, they needed longer than their CLIL counterparts to reap those benefits.

3.3 Comparisons Between CLIL and Non-CLIL Groups

CLIL and non-CLIL participants' results on the cloze and test-and-aspect tests were submitted to one-way between-subjects ANOVA analyses to ascertain if the performance of these two groups was significantly different at each data collection time. No significant differences were found between the two groups of learners at T1 on either test (cloze: $F=1.424$, df=2,105, $p=0.243$; tense and aspect: $F=2.158$, df=2,105, $p=0.121$), indicating that participants in the study were comparable at the start of the study in terms of their lexico-grammatical ability as shown through cloze and tense-and-aspect test completion.

By T2, differences between the groups, to the advantage of CLIL participants, were already significant in the case of the cloze test ($F=9.067$, df=2,105, $p<0.000$), but not yet for tense and aspect ($F=2.116$, df=2,105, $p=0.126$). At both T3 and T4, however, differences between CLIL and non-CLIL participants, with higher mean scores for the former, were significant for both tests (cloze T3: $F=4.403$, df=2,105, $p=0.015$; cloze T4: $F=5.599$, df=2,105, $p=0.005$; tense and aspect T3: $F=7.678$, df=2,105, $p<0.001$; tense and aspect T4: $F=8.435$, df=2,105, $p<0.000$). These results suggest that, although both groups start with comparable lexico-grammatical levels, they tend to grow apart to the advantage of the CLIL group, which seems to benefit from the CLIL programme surplus. This tendency is illustrated in Fig. 1 and particularly in Fig. 2 in relation to the cloze and tense-and-aspect tests respectively.

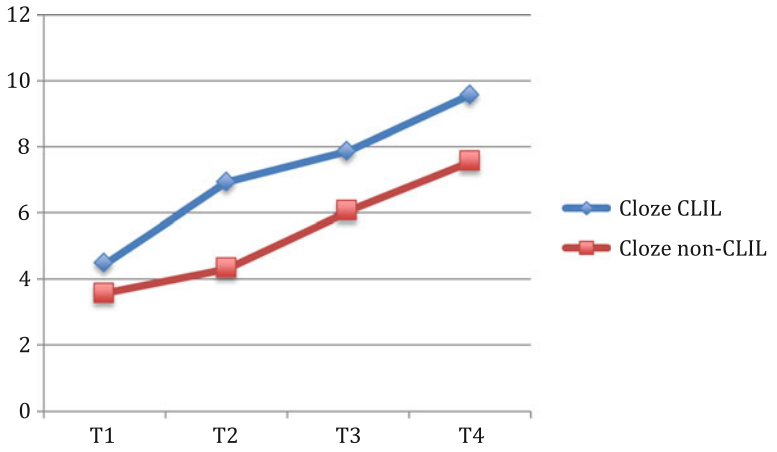

Fig. 1 Cloze: longitudinal development between T1 and T4

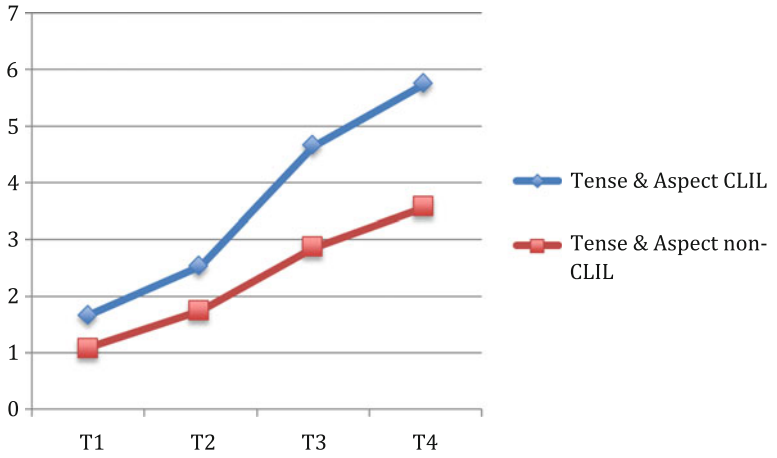

Fig. 2 Tense and aspect: longitudinal development between T1 and T4

Nonetheless, when CLIL and non-CLIL participants' performance is compared keeping hours of exposure constant (i.e. CLIL learners at T2 vs. non-CLIL learners at T3) the difference in mean scores between the two groups in both the cloze (CLIL: 6.929; non-CLIL: 6.057) and the tense-and-aspect test (CLIL: 2.543; non-CLIL 2.857) does not prove to be statistically significant. This indicates that the advantage exhibited by CLIL learners no longer holds when hours of instruction through the medium of English are the same for both groups of students.

4 Discussion

The first research question explored the extent to which lexico-grammatical performance developed over 3 years within each learning context (CLIL and non-CLIL). Results show that both CLIL and non-CLIL participants significantly improved their overall longitudinal lexical and grammatical ability. That is to say, after 3 years of instruction (T1-T4) both programmes, CLIL combined with FI and FI on its own, yielded significant differences in participants' overall achievement in the cloze and the fill-in-the-gap tense-and-aspect tests, indicating that both learning contexts appear to be beneficial for students' lexico-grammatical growth in the long term. However, our results also demonstrate that, while CLIL students significantly improved their lexico-grammatical skills each year except for cloze results between T2-T3 and the tense-and-aspect scores between T1-T2, the non-CLIL students did not significantly improve in any particular school year, apart from tense-and-aspect results between T2-T3. For the latter group, significant improvement was only found after two consecutive years of FI, T1-T3 and T2-T4, for both tests. In short, significant overall longitudinal improvement was generally seen each academic year for the CLIL group, and only after 2 years for the non-CLIL group.

These results reveal that combining CLIL with FI enables students to improve their lexico-grammatical development at a faster pace than FI on its own, thereby proving that the CLIL context makes more immediate progress possible and is more effective for short-term lexical and grammatical growth. Our findings concur with the results obtained by Lázaro Ibarrola (2012), Lázaro Ibarrola and García Mayo (2012) and Vártuki (2010), who found significantly better performance by secondary education CLIL students in mastering target language morphosyntax. Our results are also in line with Bürgi's (2007) 3-year longitudinal findings from three secondary schools in Switzerland, where CLIL learners' general English proficiency and vocabulary skills were superior to their non-CLIL classmates. Similarly, Villarreal Olaizola and García Mayo's (2007) analysis of tense and agreement inflectional morphology in oral English yielded significantly better end results from CLIL secondary students in the use of the third person singular –s verb marker. Hüttner and Rieder-Bünemann's (2007) results also pointed to the pre-eminence of CLIL secondary school students' skills in some micro-level features, such as consistency in the use of tenses and correct use of verbal forms.

Our results also support the findings by Dalton-Puffer (2008), Coyle (2013) and López-González (2014) on CLIL secondary education students' vocabulary growth as well as those in primary education scenarios by Jiménez Catalán et al. (2006) and Jiménez Catalán and Ruiz de Zarobe (2009), who reported greater vocabulary acquisition in CLIL students.

Nevertheless, the superior lexico-grammatical achievement by CLIL students in our study raises the question as to whether the progress achieved by students in the CLIL group in a single school year, as opposed to 2 years in FI, is due to the additional hours in a foreign language or to the introduction of a new learning context. The question as to whether the time frame—one academic year—is possibly too

short to judge the true impact of CLIL is also posed by Muñoz (2015), who enquires how long the minimum exposure time to the target language using CLIL should be before its benefits are noticeable. For her part, Sylvén's (2006) findings reveal that both the amount and the quality of exposure to English that CLIL provides prove effective when it comes to improving learners' target language vocabulary acquisition.

The results of our study also show that the only significant lexical and grammatical growth achieved in a single school year by the FI group was in one of the three time frames assessed (T2-T3), and only in the tense-and-aspect test. This finding reveals that FI students may achieve higher levels of correction in using tense and aspect nuances, possibly due to the regular practice of these grammatical areas in the FI classroom. Nevertheless, the more complex understanding of full textual meaning required to successfully fill in cloze gaps, which goes beyond the practice of discrete language items and into discursive features, was never significantly mastered in any of the periods assessed, as revealed by cloze test results. This suggests that input-rich environments, focused on meaning over form and where L2 knowledge is usually acquired indirectly (Lantolf 2011), appear to enable higher text processing levels, empowering students to put all their formal knowledge into play and thus develop their grammar, vocabulary and reading comprehension skills. Therefore, contextual communication environments, which encourage interaction and negotiation of meaning, appear to have enabled CLIL students to incidentally acquire complex lexico-grammatical abilities. This is along the lines of Aliaga (2008), who claimed that CLIL students cognitively process L2 in a more profound manner.

The considerably regular behaviour pattern of each group (CLIL and non-CLIL), achieving significant gains after one and two school years, respectively, in two different assessment tools, indicates, to a certain extent, that these tools measure the same domain of the language—i.e. their level of lexico-grammatical accuracy in the target language.

In relation to the comparison between the two groups studied, at the start of the study (T1), both CLIL and non-CLIL learners exhibit a similar onset level of lexico-grammatical competence in English, as no significant differences appear between them in the cloze and the tense-and-aspect test at that time. Hence, the two groups are comparable as far as their initial level of lexico-grammatical competence is concerned. However, as time goes by, the difference between the CLIL and non-CLIL groups becomes significant, with the former coming out top, mainly in the cloze test, at all research times (T2, T3 and T4) and also in the tense-and-aspect test for two data collection times (T3 and T4). These results indicate that a semi-immersion communicative context which activates procedural knowledge is more advantageous than the FI context in isolation in developing students' L2 grammar skills.

The reasons for lexico-grammatical growth by CLIL participants may relate to the type of test used. While fill-in-the-gap tense-and-aspect exercises are not unusual in the FI setting, cloze tests are more holistic and thus more complex, as students have to look beyond the gap's immediate context to fill in each blank with a suitable word, which involves making use of one's lexico-grammatical knowledge in a textual context.

Hence, in the case of the cloze, the CLIL setting, which is more linguistically demanding, appears to enhance the students' overall lexico-grammatical accuracy.

The second research question explored how CLIL students' lexico-grammatical performance compared to that of their non-CLIL counterparts when hours of exposure to the target language were equated. A comparison of CLIL students at T2 (end of year 2 of CSE; age 14) and their non-CLIL counterparts at T3 (end of year 3 of CSE; age 15), when hours of exposure were kept constant, found no significant differences between these two groups in either the cloze or the tense-and-aspect test. Thus, when accumulated hours of foreign language instruction are the same, the CLIL group does not obtain better results than the FI group, implying that the additional hours were beneficial to CLIL students but did not grant them a clear advantage in lexico-grammatical competence over their non-CLIL peers. The former students, who were 1 year younger and possibly had lower cognitive development but certainly more exposure, could acquire the same target language developmental level as the FI group. On the one hand, it can be interpreted that what CLIL participants learn in a formal EFL context may then be transferred to a context with added practical content (DeKeyser 2007) and, on the other hand, that students may benefit from a semi-immersion context as long as they are developmentally ready to acquire given linguistic forms (Ellis 2005).

However, our findings from the older non-CLIL students obtaining the same results as younger CLIL learners can also be interpreted in line with other scholars (e.g. Villarreal Olaizola 2011; Muñoz 2015) who claim that, with higher cognitive development but lower exposure to the target language, good results in lexico-grammatical accuracy can also be achieved through FI.

Finally, subject specialists' insufficient L2 proficiency (Nikula 2010; Hillyard 2011; Escobar Urmeneta 2013; Ruiz de Zarobe 2015) and limited abilities to teach through a foreign language (Whittaker and Llinares 2009), especially when explicit attention to learners' linguistic demands is required in CLIL settings (Swain 1990), might partly explain why CLIL students' lexical and grammatical development was not boosted to its maximum potential, and thus they did not do better than their older FI classmates.

Conclusions

The results of the present longitudinal study show that CLIL in combination with FI appears to accelerate lexico-grammatical learning, whereas FI on its own takes longer in order to exert the same positive effects. A significant contribution of this research is that over three consecutive years a considerably regular pattern has been found in both contexts, CLIL and FI, leading to enhanced lexico-grammatical abilities over one and two years respectively. Thus, greater target language exposure through CLIL appears to yield

(continued)

significant lexico-grammatical gains, although when the accumulated hours of instruction are equated, the superior performance of the CLIL group is attenuated. Several factors may have had an impact on CLIL and FI students attaining the same overall lexico-grammatical results. On the one hand, CLIL learners may have had an advantage due to the greater number of hours of exposure to the target language, through a semi-immersion TL learning environment whereby, upon learning a content subject through a foreign language, students become more used to inferring meaning from context and to transferring what has been learned in the EFL class to a more practical setting that focuses on meaning. However, this progress could be offset by the scarce response to explicit formal questions arising from semi-immersion environments, and by the lower cognitive development of the younger CLIL students. On the other hand, for non-CLIL students, greater cognitive development and enhanced practice in EFL settings of exercises focused exclusively on linguistic form may have had a positive bearing.

The question our study thereby raises is, given the significant results obtained in the development of lexico-grammatical accuracy in a single school year for CLIL plus FI, how expedient it is to wait 2 years in order to obtain the same development through FI on its own. In order to achieve more immediate effects in the lexico-grammatical domain, the results of the present study might lead to a review of secondary education curricula in Spain as regards the number of hours per year of EFL instruction, as well as of the aims set annually as far as lexico-grammatical content and competencies to be attained through EFL sessions are concerned, avoiding a repetition of similar grammatical contents over the academic years. The question should also be considered whether more communicative activities—more focused on meaning than on grammatical accuracy—ought to be introduced into EFL sessions in a regular way, as this may promote a faster development of learners' text processing skills, which does not seem to be achieved with one single type of instruction at present. Our study demonstrates that a combination of two approaches—CLIL plus FI—may be more powerful than a single approach—FI—in order to develop overall lexico-grammatical accuracy year after year. Therefore, it would appear that a renaissance of Focus on Form is called for (Lyster 2007; Pérez-Vidal 2007; Dalton-Puffer 2009), as this intentional focus may perfectly align with incidental learning (Coyle et al. 2010) in order to maximise the linguistic opportunities provided by the CLIL environment.

Future studies should carry out more observations of CLIL and FI teaching and learning processes in order to detect the specific factors that impact lexico-grammatical development, such as the degree of explicitness involved in the formal study of the language, the actual presence of communicative activities in the classroom, and the use of learners' L1. In sum, more intensive research needs to be conducted on the CLIL and FI contexts so as to further improve the quality of foreign language teaching.

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Exploring Affective Factors in L3 Learning: CLIL vs. Non-CLIL

Marian Amengual-Pizarro and José Igor Prieto-Arranz

1 Introduction

1.1 Contextualisation and Definitions of Key Terms

"Affectivity" is an umbrella term that has been widely used to refer to a range of individual variables that have been perceived to interact with second language acquisition (SLA). Indeed, research has foregrounded affective factors so as to account for the fact that language gains, in whatever learning context, do not always follow clear patterns. Thus, there is evidence pointing to such factors and ultimate achievement in the target language being highly interrelated (Gardner 1985; Bernaus 1994; Dörnyei 2001; Masgoret and Gardner 2003; Bernaus et al. 2004; Polat and Schallert 2013). This has led to the growing visibility of combined "mixed-methodologies" (Allen and Herron 2003; Ellis 2008), especially in the wake of the publication of Firth and Wagner (1997, re-published 2007), somehow uniting the strengths of quantitative research with a qualitative dimension which enquires into those "affective factors" that are believed to influence SLA, including (language) attitudes, beliefs (and/or opinions), and motivation.

Richards et al. (1992) and Richards and Schmidt (2002) regard attitudes as expressions of positive or negative feelings towards a language. Language attitudes, therefore, are abstractions to be inferred from stated beliefs or observed patterns of behaviour, reflecting the perceived simplicity or difficulty of learning, degree of importance, elegance, or social prestige of a target language, which may play an important role in the language learning process.

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For their part, Richards and Schmidt (2002: 297) consider beliefs (often also referred to as, or together with, "opinions") to be relatively stable sets of ideas and attitudes about such aspects as language learning, teaching methodology, personal abilities or goals in language learning, which may sometimes impede the acceptance of new ideas and practices. As a result, such beliefs may influence learners' attitudes and motivation during the language learning process.

Finally, Gardner defined motivation as a "combination of effort plus desire to achieve the goal of learning the language plus favourable attitudes toward learning the language" (1985: 10). Accordingly, motivation can only be artificially separated from attitudes or beliefs (Gardner 2006). Research has distinguished two main types of motivation, namely, *instrumental* and *integrative motivation* (Brown 2000). The former involves concepts of practical value for learners such as career promotion, business opportunities, prestige, power, access to scientific and technical information or just passing a test or exam (Gardner 1983: 203; Saville-Troike 2006: 86). On the other hand, *integrative motivation* has focused on the individual's need to belong. This, referred to as "integrativeness" by Gardner (1983), assumes the existence of an increasing identification process with a valued community on the part of the learner (Dörnyei 2009: 22–23).

However, the internationalisation of English has problematised the very notion of that "valued community", which has led Dörnyei and Csizér (2002) to reformulate "integrativeness" in terms of their "L2 motivational self system" (already applied in foreign language acquisition research—see Polat and Schallert 2013). Thus, integrativeness now becomes an identification process with "the ideal L2 Self" (Dörnyei 2009), an ideal image of oneself as a proficient L2 speaker which learners are assumed to have and which reinforces their integrative disposition. Interestingly, in the Dörnyeian model the ideal L2 Self is seen to feed on both attitudes towards members of a (possibly international) L2 community and purely instrumental aspects such as future professional success (Dörnyei 2009). Consequently, the re-defined concept of integrativeness is now seen as the gateway to the learners' intended effort to study their language of choice. In this way, the L2 motivational self system blurs the clear-cut distinction between intrinsically- and extrinsically-oriented motivation.

1.2 CLIL and Affectivity

Interestingly, experts have been quick to point out that CLIL may play a role in the promotion of positive affective factors. Thus, Banegas (2012: 113) highlights the motivational benefits to be drawn from carefully-implemented CLIL programmes. Casal and Moore (2009), for their part, attribute the higher language gains found among CLIL learners to motivational issues. In particular, experts have pointed to CLIL as providing that "comprehensible input +1" which, according to Krashen's (1987) influential learning/acquisition model, learners should find challenging yet motivating (Wilhelmer 2008). By placing language as a tool

(and not only as the target) in the L2 learning process, CLIL programmes may give rise to holistic, cognitively-engaging classroom activities (Brewster 2004: 26), which may in turn have important side-effects such as improved learner confidence, motivation and autonomy (Coyle 2006a, b), especially when lack of interest seems to have characterised secondary education contexts like Spain's for at least the last two decades (Alcalde et al. 1994).

In this regard, research suggests that younger students appear to show a stronger desire to learn, and more positive attitudes towards language learning in general, and English in particular, than their older counterparts (Tragant and Muñoz 2000). These findings are supported by Cenoz (2001), who concludes that younger students generally hold more positive attitudes towards the foreign language than older learners due to psychological and educational issues. In other words, there seems to be a general decline in positive attitudes towards foreign language learning in students from the highest grades, which in the Spanish context would predictably affect the last years of compulsory secondary education (CSE). Interestingly, higher education contexts do not seem to be affected by this problem (Karahan 2007; Yassin et al. 2009).

There seems to be, however, remarkably little research available on CLIL and its possible effects on affectivity, particularly in those specific contexts in which CLIL is used in bilingual settings (see Lasagabaster 2015 for a full report). This is relevant since evidence has emerged of other variables interacting with affectivity in language learning contexts. One such variable is the learner's language profile since, apart from the fact that research points to the acquisition of additional languages possibly being fostered in multilingual speakers (Lasagabaster 2015), multilingualism has also been linked to multicultural attitudes (Bourhis et al. 1981; Cenoz and Gorter 2011). This partly accounts for the growing interest in CLIL programmes on the part of the European institutions in their effort to promote plurilingualism (North 2000; Council of Europe 2001). Among other findings, Lasagabaster and Sierra (2009) have found that positive attitudes to not only English but also Spanish and Basque are higher among CLIL than non-CLIL students. However, such results should also be taken with some caution. Thus, Seikkula-Leino (2007), reporting from Finland, finds that English CLIL primary-school students may combine low self-concepts in the foreign language (not significantly different from those found among their non-CLIL peers) with a strong motivation to learn. Lasagabaster (2015) also reviews examples from other (mainly Asian) contexts showing that the viability of English CLIL instruction in bi- or multilingual settings is highly dependent on attitudinal factors at macrosocial levels.

Finally, even though research is still scanty in the area (Anya 2011: 442), students' attitudes also seem to be related to gender issues. Thus, although there is no general agreement on this as yet, female students are mostly reported to have more positive language learning attitudes and be more strongly motivated than male students (Merisuo-Storm 2007; Pavlenko and Piller 2008), although such differences have not always proved significant (Weseley 2012; Henry and Cliffordson 2013).

1.3 Aims

This chapter aims at exploring the role CLIL may play in the development of affective factors in learners of L3 English. The novelty of the study resides in that, despite the relevance of affective factors, research that compares such factors among both CLIL and formal instruction (FI) students remains scarce (Lasagabaster and Sierra 2009); secondly, most of the literature on attitudes, beliefs and motivation in the field of SLA has generally focused on university contexts (Weseley 2012), whilst the present study will centre on CSE; and finally, attention will also be paid to the learners' gender and language profile, in order to measure their possible impact on attitudes.

More specifically, our study addresses the following research questions:

RQ1 Does learning context (CLIL vs. non-CLIL) play a role in the development of affective factors?
RQ2 What is the impact of CLIL programmes on affective factors related to the content subject taught through English?
RQ3 Does the participants' language profile have an effect on their interest in language learning?
RQ4 Does learning context in combination with the learner's gender influence the development of affective factors?

Our study's methodological considerations are presented in Sect. 2 below. The main findings can be found in Sect. 3, duly subdivided into four subsections, each addressing a separate research question. Section 4 provides a discussion of the main findings. Finally, some general conclusions will be presented.

2 Method

2.1 Participants

The present research was designed as a longitudinal study. Its participants (all from the COLE project pool) were two groups (CLIL vs non-CLIL) of Catalan-Spanish bilinguals enrolled in CSE at five state-run schools in the Balearic Islands (see Chapter "Learning English and Learning Through English: Insights from Secondary Education"). They were asked to complete a questionnaire tapping into the affective factors signalled above, namely, attitudes, beliefs and motivation (ABM). Participants completed the questionnaire at the beginning of year 2 of CSE (T1, marking the onset of the CLIL programme) (CLIL $n = 93$; non-CLIL $n = 77$; age 13–14); additionally, a subsample of participants (CLIL $n = 85$; non-CLIL $n = 66$) completed their questionnaires at a second collection time (T2, end of year 3 of CSE; age 14–15). This second collection time coincides with T3 within the general COLE project research design (see Chapter "Learning English and Learning Through English: Insights from Secondary Education").

Table 1 Participants' gender distribution

			Gender			
			Female	Male	Total	Percentage
TIME 1	Group	CLIL	44	49	93	54.7 %
		Non-CLIL	48	29	77	45.3 %
	Total		**92**	**78**	**170**	100.0 %
TIME 2	Group	CLIL	47	38	85	56.3 %
		Non-CLIL	39	27	66	43.7 %
	Total		**86**	**65**	**151**	100.0 %

CLIL students had 6 h of English classes per week (3 h of EFL plus 3 h of content subjects through English). For their part, non-CLIL students only had 3 h of EFL lessons per week. In three of the participating schools, CLIL programme admission criteria included the student's general academic record, their previously obtained EFL grades, and / or their performance in an EFL placement test. Table 1 shows the gender distribution per group.

As can be seen, female participants clearly outnumber males within groups at both collection times [T1 = 92 (54.12 %) vs. 78 (45.88 %) and T2 = 86 (56.95 %) vs. 65 (43.05 %)].

2.2 Research Instruments

As stated in Chapter "Learning English and Learning Through English: Insights from Secondary Education", a questionnaire (ABM) was developed to capture the opinion of both groups of students at both T1 and T2. The questionnaire was adapted from another questionnaire used by the SALA-COLE research group in the SALA (Study Abroad and Language Acquisition) Project, with a Cronbach's alpha measuring internal consistency between .74 and .93 (see Pérez-Vidal 2014).

The ABM questionnaire was divided into three main sections, each focusing on the following: attitudes (19 items), students' beliefs and opinions on the learning of English (20 items), and motivation (14 items). Each section included a set of items which were only answered by CLIL students, as they concerned their experience in this programme: items 14–19 (first section), items 11–20 (second section) and items 9–14 (third section). The questionnaire was administered in Catalan since this is the preferred language of communication at the participating schools.

Participants were also asked to complete a language profile questionnaire (see Chapter "Learning English and Learning Through English: Insights from Secondary Education"), which was only administered at T1. It elicited factual data concerning the participants' personal details, L1 and L2 language use, EFL instruction, learning experiences, (foreign language-related) habits and contact with EFL speakers.

2.3 Analysis

Students were asked to indicate the extent to which they agreed or disagreed with the statements of the two first sections of the ABM questionnaire on a 1–5 Likert-type scale, ranging from 1 ("totally agree") to 5 ("totally disagree"). The third section asked students to choose 1 out of the 5 different options included in each of the items. Results were analysed using the Statistical Package for the Social Sciences (SPSS) programme.

3 Results

3.1 Learning Context and Development of Affective Factors

3.1.1 Language Attitudes

T-test results from questions 1–13 (section 1 ABM questionnaire) indicate that, although there were differences between both groups of students, such differences were not statistically significant. The comparison of the means between the two groups reveals, however, the tendency of the non-CLIL group to have more negative learning attitudes at T1 (see Table 2). It should be noted that the highest mean scores (5) show negative attitudes towards English, whereas the lowest scores show positive attitudes towards the language. For the sake of readability, items 1, 7 and 8 (in which, contrary to all other items, high scores signal positive attitudes) have been transformed and recoded so that the values obtained in all the items can be compared in a consistent manner. Interestingly, research findings show that the non-CLIL group score slightly higher than their CLIL peers on these aspects at T2.

The only significant difference between both groups was found in item 1 ("I am studying English because it is a compulsory subject") at T2 ($t=-2.212$; $p<0.05$), with CLIL students expressing clearly lower agreement with this item.

Time, however, is an intervening variable as far as the development of language attitudes is concerned. Thus, statistically significant differences were found among students as a whole (CLIL and non-CLIL students altogether) in items 4, 5, 8, 10 and 11 ($p<0.05$) as time progressed (T1 vs. T2). Results indicate that students' overall opinions improved considerably at T2 in the aforementioned items: "In general I like English music and I want to understand it" (item 4); "I like watching English films and to be able to understand them" (item 5); "I want to travel abroad and speaking English will be useful" (item 10); and "I want to speak English because I want to communicate with people from different countries" (item 11). The exception was item 8, "I like the English language but I do not like the English lessons", which obtained lower ratings at T2.

Table 2 Learning attitudes: descriptive statistics

	TIME 1				TIME 2			
Items	Group	N	Mean	S.D.	Group	N	Mean	S.D.
Q1A1* "I am studying English because it is compulsory"	CLIL	92	2.88	1.366	CLIL	83	2.68	1.343
	Non CLIL	77	3.28	1.413	Non CLIL	63	3.19	1.390
Q1A2 "I like English"	CLIL	93	1.85	.807	CLIL	84	1.90	.965
	Non CLIL	77	2.03	1.013	Non CLIL	65	1.85	.922
Q1A3 "I like English because it will help me to get a better job"	CLIL	92	1.58	.855	CLIL	84	1.76	.873
	Non CLIL	77	1.86	1.060	Non CLIL	65	1.72	.839
Q1A4 "I like English music and I want to understand it"	CLIL	92	1.85	1.176	CLIL	84	1.49	.736
	Non CLIL	76	1.72	1.066	Non CLIL	64	1.39	.769
Q1A5 "I like watching English films and to be able to understand them"	CLIL	92	3.00	1.222	CLIL	84	2.48	1.375
	Non CLIL	77	2.95	1.395	Non CLIL	65	2.55	1.358
Q1A6 "English will help me understand videogames"	CLIL	91	2.60	1.307	CLIL	84	2.80	1.429
	Non CLIL	77	3.01	1.419	Non CLIL	65	2.68	1.336
Q1A7* "I do not like the English language"	CLIL	91	1.67	.989	CLIL	83	1.56	.858
	Non CLIL	77	1.81	1.178	Non CLIL	65	1.70	1.057
Q1A8* "I like English but not English lessons"	CLIL	91	2.59	1.174	CLIL	84	2.97	1.202
	Non CLIL	77	2.70	1.268	Non CLIL	65	2.86	1.184
Q1A9 "I get good marks in the English lessons"	CLIL	93	2.22	1.072	CLIL	84	2.40	1.031
	Non CLIL	74	2.30	1.095	Non CLIL	65	2.37	1.112
Q1A10 "I want to travel abroad and learning English will help me"	CLIL	92	1.64	.909	CLIL	84	1.50	.925
	Non CLIL	77	1.71	1.050	Non CLIL	64	1.39	.748
Q1A11 "I want to learn English to be able to communicate with foreign people"	CLIL	92	1.67	.962	CLIL	83	1.48	.802
	Non CLIL	77	1.69	.990	Non CLIL	64	1.36	.743
Q1A12 "I like learning other foreign languages"	CLIL	91	1.87	.968	CLIL	85	2.05	.987
	Non CLIL	77	1.94	.937	Non CLIL	64	1.80	1.086
Q1A13 "I would like to study another foreign language besides English"	CLIL	92	2.14	1.115	CLIL	85	2.31	1.215
	Non CLIL	75	2.24	1.239	Non CLIL	64	2.05	1.214

3.1.2 Beliefs on the Learning of English

Section 2 ABM aimed at gathering information on both CLIL and non-CLIL students' opinions on various aspects of the English language learning process. Results show that both groups of students share similar views. In fact, the *t*-test performed only revealed statistically significant differences in item 5 ($t=2{,}116$; $p<0.05$): "I get nervous when I have to speak English". When speaking English is required, non-CLIL students report higher degrees of anxiety than their CLIL counterparts.

Across time (T1 vs. T2), statistically significant differences were only found for item 7, "I would like to get to know more English language speakers". At T1 ($t=-2.729$; $p<0.05$), CLIL students show greater interest in this aspect, registering values closer to the positive end of the scale (1 = totally agree; 2 = agree) (Table 3). At T2, nevertheless, results indicate that both groups show greater interest in meeting native English speakers. This growing interest is more apparent among non-CLIL students who, at T2, show even greater willingness to get to know native English speakers than CLIL students, although this difference is not significant. In fact, no statistically significant differences were observed between groups at T2.

3.1.3 Motivation Towards Learning English

Section 3 ABM enquired into motivational issues. CLIL students admit to being more highly motivated during the English lessons (item 8), but differences between CLIL and non-CLIL students were not significant over time (T1 and T2), all students' responses gathering at the positive end of the scale (1 = extremely motivated, and 2 = highly motivated) (Table 4).

Table 3 Beliefs (item Q2.7): "I would like to know more English people"

Time	Group	*N*	Mean	SD	SEM
T1	CLIL	93	2.37	1.040	.108
	Non CLIL	74	2.81	1.056	.123
T2	CLIL	85	2.34	1.075	.117
	Non CLIL	65	2.17	1.112	.138

Differences across time

Table 4 Motivation (item Q3.8): "My motivation in the English lesson is very high… very low"

TIME	Group	*N*	Mean	SD	SDM
T1	CLIL	92	2.04	.710	.074
	Non CLIL	71	2.25	.712	.084
T2	CLIL	83	2.24	.805	.088
	Non CLIL	65	2.46	.752	.093

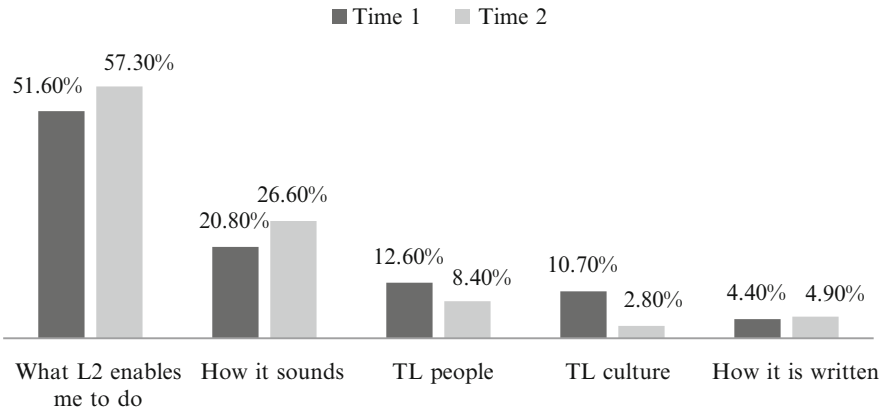

Fig. 1 Motivation: "What I most like about English"

Likewise, both groups of students acknowledge either studying "a great deal" (value = 1) or at least doing a "fair enough" amount of study work (value = 2) (item 3), with no significant differences between groups over time.

As far as the identification of the key motivating factors in the EFL class is concerned (item 5), the following aspects were ranked in order of importance at both times: "marks", "group work", "activities", "teaching method", and "amount of work". The time variable does not seem to affect such factors. This also applies to the identification of the less motivating factors related to the EFL class, which seemed to remain stable across time (item 6). The following were ranked in order of importance: "amount of work", "activities" and "teaching method".

Students were also asked to identify the aspect they liked the most about the English language (item 7). In this respect, both groups of students report that "the number of things that English enables them to do" is the most motivating factor for them (Fig. 1). This interest increases over time (51.6 % vs. 57.3 %). Lagging quite far behind this, students also acknowledge being motivated by such aspects as "the way English sounds", "English people" and "English culture". The first of those three aspects ("the way English sounds") becomes an even more appealing option at T2 (20.8 % vs. 26.6 %). On the contrary, the students' interest seems to diminish across time regarding the other two aspects, namely "English-speaking people" (12.6 % vs. 8.4 %), and especially their "culture" (10.7 % vs. 2.8 %).

Results also indicate that students identify two major reasons for learning English (item 2): "getting a good job" (T1 39.13 % vs. T2 29.17 %) and "being able to communicate with people around the world" (T1 33.54 % vs. T2 43.75 %). This last reason scores higher at T2, that is, as students' command of the English language increases. Participants also admit to "liking English" as a relevant factor, although this obtains similar values over time.

Table 5 CLIL participants' attitudes at T1 and T2

Items	TIME 1			TIME 2		
	N	Mean	S.D.	N	Mean	S.D.
Q1A14* "I like English but not the content subject in English"	142	2.60	1.116	111	2.57	1.164
Q1A15 "The content subject teacher explains the contents clearly"	143	2.28	1.090	113	2.14	1.149
Q1A16* "I do not like having the content subject in English"	143	2.34	1.028	113	2.51	1.118
Q1A17 "I obtain good marks in the content language subject"	138	2.36	0.870	113	2.37	1.019
Q1A18 "I like the extra content subject in English"	142	2.30	0.944	113	2.46	1.027
Q1A19 "I am glad to study an extra content subject in English"	141	2.08	1.122	112	2.20	1.265

[a]Transformed: recoded variables

3.2 *CLIL and Affective Factors: The Content Subject Taught Through English*

3.2.1 Attitudes

Section 1 ABM contained a sub-section (items 14–19) exclusively addressing CLIL students' language attitudes. *T*-test results indicate that there are no statistically significant differences among CLIL students regarding this issue. Time does not seem to affect their opinions to a significant extent either. On the whole, CLIL students seem to share more homogeneous attitudes towards learning than non-CLIL students.

Table 5 shows the descriptive statistics for the aforementioned items. As can be seen, CLIL students show a positive attitude towards all the aspects concerning English, since the mean values of all the items are situated at the positive end of the scale (1 = totally agree, and 2 = agree).

3.2.2 Beliefs

The results discussed here have been drawn from questions 11–20 in section 2 ABM. As was the case with attitudes, no significant differences were observed among CLIL students over time except for item 20: "It is difficult for me to understand the CLIL subject", which obtained more positive results at T2 (Table 6).

3.2.3 Motivation

CLIL students' motivation regarding their CLIL subject was addressed in Section 3 ABM (items 9–14). Concerning the CLIL subject (item 13), students report being either "very highly" (T1 15.4 %, vs. T2 24.8 %) or "highly" motivated (T1 61.8 % vs.

Table 6 Self-perceived difficulty to understand the CLIL subject: T1 vs. T2

	T1	T2
N	143	115
Mean	3.18	3.55
SD	1.142	1.094
SEM	.096	.102

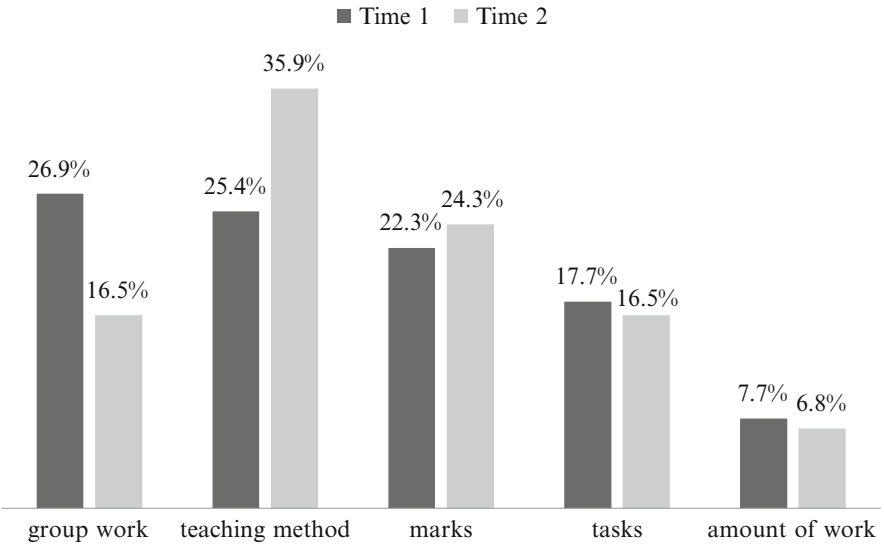

Fig. 2 "What motivates me most in the CLIL lesson is…"

T2 46.8 %), with little overall difference over time. Students also report studying "a lot" (T1 17.9 % vs. T2 26.6 %) or "hard enough" (T1 64.3 % vs. T2 56 %) for their CLIL subject (item 10), again with little difference across time.

As regards the major motivating aspects related to the CLIL subject (item 11), on the one hand, students identify "group work" and "teaching method" at T1 and T2 respectively. In general, T2 scores are lower for all the aspects except for "teaching method". "Marks" are also relevant, especially at T2, being placed second in order of importance after "teaching method" (Fig. 2).

On the other hand, the least motivating factors (item 12) seem to be "amount of work" and "tasks", ranked in this order of importance at both times (T1 and T2). Lagging behind this, students also report "teaching methodology" and "marks" among the least appealing factors. However, "teaching methodology" appears to be seen in a more positive light at T2, whereas "marks" are seen as equally relevant at both times (T1 12.1 % vs. T2 12.4 %) (Fig. 3).

At T1, CLIL students' willingness to study their CLIL subject (item 9) is mainly motivated by their wish "to have a good job", although the second major reason reported is simply "because [they] like it". In fact, this latter factor obtains the highest score at T2 (Fig. 4).

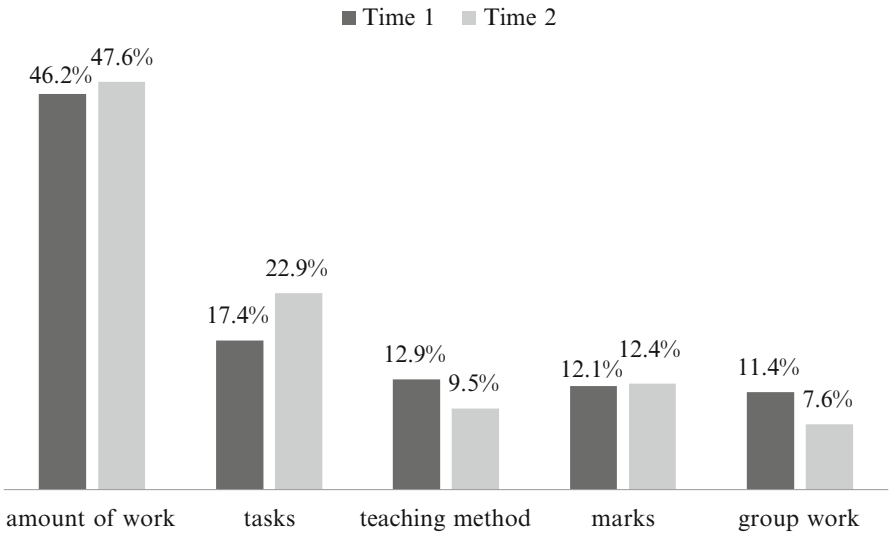

Fig. 3 "What motivates me the least in the CLIL lesson is…"

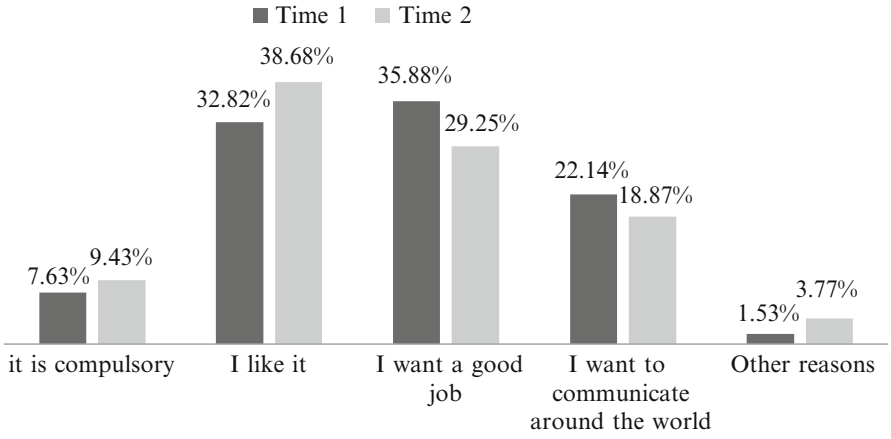

Fig. 4 CLIL: Most motivating factors

3.3 Language Profile: Interest in Language Learning

In order to ascertain the possible effect of the CLIL programmes under study on the learners' interest in language learning, the participants' language profile was examined. Firstly, attention was paid to the languages that the participants claim they usually speak to communicate with both their parents. Results show a very different language distribution among CLIL and non-CLIL participants. As can be seen in Fig. 5, Catalan-dominant speakers (i.e. those that use only this language in their

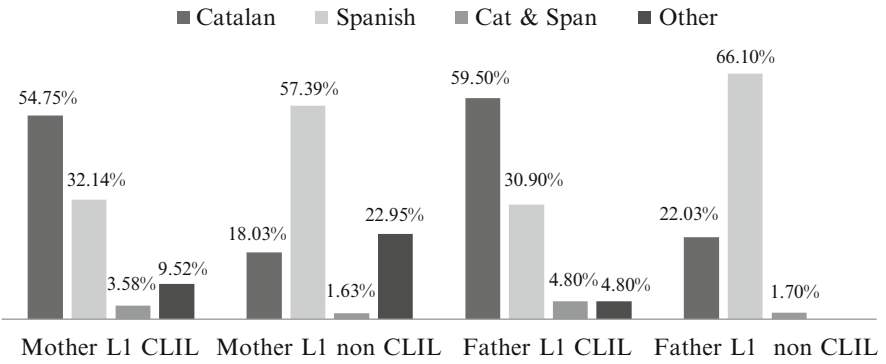

Fig. 5 Participants' language profile (Note: *Mother L1 CLIL* Language used by CLIL students to communicate with their mothers, *Mother L1 non CLIL* Language used by non-CLIL students to communicate with their mothers, *Father L1 CLIL* Language used by CLIL students to communicate with their fathers, *Father L1 non CLIL* Language used by non-CLIL students to communicate with their fathers)

Table 7 Comparison of CLIL vs. non-CLIL participants' grades

	Group	*N*	Mean[a]	SD	Std. error mean
Grades Catalan	CLIL	80	3.03	.763	.085
	Non CLIL	55	2.78	.896	.121
Grades Spanish	CLIL	81	2.94	.827	.092
	Non CLIL	54	3.02	.921	.125
Grades English	CLIL	84	3.14	.730	.080
	Non CLIL	56	2.89	.985	.132

[a]Mean score values: *value 1* grades <5 points, *value 2* grades between 5 and 6 points, *value 3* grades between 7 and 8 points, *value 4* grades between 9 and 10 points

daily communication with their parents) are far more representative in the CLIL group than in the non-CLIL group. Conversely, Spanish prevails in this latter group, which is also characterised by a much higher percentage of participants who use languages other than Catalan, Spanish or English in such habitual communication.

Additionally, the grades CLIL and non-CLIL participants obtain in the Catalan, Spanish and EFL subjects were looked into. The comparison of the means on a 4-point scale between both groups of students reveals that CLIL participants obtain higher marks in EFL. As for the two official languages in the Balearic Islands, CLIL students obtain higher grades in Catalan and slightly lower marks in Spanish (Table 7), although such differences are not significant.

Table 8 shows the grades that CLIL students obtain in their CLIL subject on a 10-point scale. As can be seen, these are slightly lower than those obtained in their EFL course, although differences are not significant.

Finally, results reveal statistically significant differences between CLIL and non-CLIL students concerning the learning of a second language other than English

Table 8 CLIL participants' grades in the CLIL subject

		Frequency	Percentage
Valid	Less than 5 points	4	6.3 %
	Between 5 and 6	19	30.2 %
	Between 7 and 8	36	57.1 %
	Between 9 and 10	4	6.3 %
	Total	63	100.0

($t=-2.044$; $p<0.05$). Unlike their non-CLIL peers, the majority of CLIL students report speaking a second foreign language in addition to English.

3.4 Learning Context and Gender: Impact on Affective Factors

3.4.1 Female vs. Male Students' Attitudes (CLIL and Non-CLIL)

Although no significant differences were found when comparing the possible interaction of gender and attitudinal factors in CLIL and non-CLIL students (as measured in Section 1 ABM, items 1–13), *t*-test results reveal statistically significant differences between male and female students as a whole in items 2($t=-2.498$), 5($t=-2.388$), 6($t=2.048$), 11($t=-2.236$) and 12($t=-2.427$) at $p<0.05$ at T1. Significant differences were also found in items 2($t=-2.263$), 4($t=-3.308$), 6($t=3.158$), 10($t=-2.478$) and 12($t=-2.254$) at $p<0.05$ at T2. As can be seen, the difference between both groups remains constant across time except for items 5 ("I like watching English films and being able to understand them") and 11 ("I want to learn English to be able to communicate with foreign people"), which are only significant at T1. Additionally, results indicate statistically significant differences at T2 between male and female students in two other items: item 4 ("I like English music and I want to understand it") and item 10 ("I want to travel abroad and learning English will help me").

As Table 9 below shows, mean value results indicate that female participants have more positive attitudes towards the English language (item 2) and language learning in general (item 12) at T1 and T2. Female students also show greater interest in English films and seem to derive more pleasure from their ability to understand them (item 5). They also tend to show more visible appreciation of English as a tool enabling communication with foreign people (item 11). Male students, on the other hand, consider that the English language helps them understand videogames (item 6) and value this aspect higher than their female counterparts at both times.

As can be seen in Table 9 below, female students show a more favourable attitude towards items 4 ("I like English music and I want to understand it") and 10 ("I want to travel abroad and learning English will help me") at T2.

Table 9 Gender-based differences in attitudes: group statistics

TIME		Gender	*N*	Mean	SD	Std. error mean
TIME 1	Q1Att2 "I like English"	Female	92	1.77	.813	.085
		Male	78	2.12	.980	.111
	Q1Att5 "I like watching English films and to be able to understand them"	Female	92	2.76	1.235	.129
		Male	77	3.23	1.337	.152
	Q1Att6 "English will help me understand videogames"	Female	91	2.99	1.370	.144
		Male	77	2.56	1.343	.153
	Q1Att11 "I want to learn English to be able to communicate with foreign people"	Female	91	1.53	.779	.082
		Male	78	1.86	1.136	.129
	Q1Att12 "I like learning other foreign languages"	Female	92	1.74	.888	.093
		Male	76	2.09	.996	.114
TIME 2	Q1Att2 "I like English"	Female	85	1.73	.836	.091
		Male	64	2.08	1.044	.130
	Q1Att4 "I like English music and I want to understand it"	Female	84	1.27	.523	.057
		Male	64	1.67	.927	.116
	Q1Att6 "English will help me understand videogames"	Female	85	3.05	1.371	.149
		Male	64	2.34	1.312	.164
	Q1Att10 "I want to travel abroad and learning English will help me"	Female	85	1.31	.598	.065
		Male	63	1.65	1.080	.136
	Q1Att12 "I like learning other languages"	Female	84	1.77	.949	.104
		Male	65	2.15	1.107	.137

Table 10 Gender-based differences in beliefs: "In our community it is necessary to know how to speak English"

Time	Gender	*N*	Mean	SD	SEM
T1	Female	88	1.74	0.977	.104
	Male	78	2.32	1.455	.165
T2	Female	85	2.05	1.234	.134
	Male	65	2.22	1.305	.162

3.4.2 Beliefs on English Language Learning: The Interaction of Learning Context and Gender

With regard to both CLIL and non-CLIL participants' views on the learning of English (section 2, items 1–10), the only significant difference between male and female students was found in item 10 at T1: "In our community it is necessary to know how to speak English" ($t = -3.055$; $p < 0.05$). As can be seen (Table 10), mean value results show that female participants exhibit more positive views on this issue.

However, this gender gap decreases over time since no significant differences were found at T2.

Table 11 Group statistics: gender and motivation in CLIL and non-CLIL participants

Time		Gender	*N*	Mean	SD	SEM
T1	Q3.3 "In the English lesson I am studying a lot…nothing"	Female	86	2.16	.765	.082
		Male	78	2.12	.683	.077
	Q3.8 "My motivation in the English lesson is very high…very low"	Female	85	2.14	.710	.077
		Male	78	2.13	.727	.082
T2	Q3.3 "In the English lesson I am studying a lot…nothing"	Female	85	2.26	.789	.086
		Male	64	2.58	.922	.115
	Q3.8 "My motivation in the English lesson is very high…very low"	Female	85	2.27	.793	.086
		Male	63	2.43	.777	.098

3.4.3 Gender and Motivation (CLIL and Non-CLIL)

Results reveal overall statistically significant differences between male and female students in item 3 (section 3 ABM): "In the English class I study a lot…nothing" ($t = -2.273$; $p < 0.05$) at T2. As can be seen (Table 11 above), mean value results reveal that, as time progresses, self-perceived study work is higher among females (1 = a lot; 5 = not at all). Male students, on the contrary, seem to lose interest over time and admit studying significantly less at T2.

Female students also express higher motivation than their male counterparts (item 8), especially at T2, although the gender gap is not significant here. Overall results, however, suggest a slight decline in the participants' interest and motivation over time.

3.4.4 Female vs. Male CLIL Students' Attitudes, Beliefs and Motivation

As mentioned above, the three sections of the ABM questionnaire included a set of questions which addressed CLIL students exclusively. No statistically significant differences between males and females were reported across time among CLIL students regarding the issues concerned, indicating that both male and female CLIL participants held more homogeneous attitudes, beliefs and motivation than their non-CLIL counterparts.

4 Discussion

4.1 Learning Context (CLIL/Non-CLIL) and the Development of Affective Factors

With regard to the first research question, which enquired into the role that learning context may play in the development of affectivity, results show no statistically significant differences between CLIL and non-CLIL students concerning the

affective factors measured. Thus, even though attitudes and beliefs do grow and motivation improves among CLIL participants between T1 and T2 (in line with claims put forward by Coyle 2006a or Wilhelmer 2008), this also holds true for non-CLIL students. An interesting finding was that all participants highlight the importance of English as a major tool enabling communication all around the world. This may be seen as a sign that both groups are aware of the status of this language as a *lingua franca* and that communication in English may well take place between non-native speakers of the language (McKay 2003; Llurda 2004; Ives 2010).

Among non-CLIL students, a tendency was detected to present more negative attitudes, already noticeable at T1. The only item for which significant differences have been found at T2 between CLIL and non-CLIL students ("I am studying English because it is a compulsory subject") points to the latter being more instrumentally-motivated. Non-CLIL students, therefore, appear to be less intrinsically motivated to study English.

Time, however, seems to be a relevant variable for all students, and significant differences were found between T1 and T2 concerning different aspects, namely their interest in English music and films, and awareness of the usefulness of English as a tool that will enable them to travel abroad and communicate with a wide range of people.

Taken as a whole (i.e. both CLIL and non-CLIL), participants seem to show less appreciation for their EFL classes over time, in line with Tragant and Muñoz (2000), Cenoz (2001) and Lasagabaster and Sierra (2009). In light of this and other results discussed below, students' negative attitudes seem to be related to language teaching methodologies. On the other hand, students' increased contact with the foreign language seems to be linked to the formation of more positive attitudes towards it.

Results also seem to suggest that learning context does not play a major role in the development of participants' affective variables. In fact, significant differences were only found across time regarding two aspects. One was the lower anxiety level claimed by CLIL students when having to speak English in class. This is probably due to the fact that CLIL students have been more amply exposed to, and encouraged to speak in English in class and, therefore, have greater confidence in their oral foreign language skills (see Lorenzo et al. 2011).

The other aspect for which significant differences were found concerns the learners' willingness to meet more native English speakers. Although this wish is significantly stronger among CLIL students at T1, this interest grows in both groups at T2, and even more so among non-CLIL students (although this difference is not significant). This may be due to different reasons. CLIL students were already relatively highly motivated at T1 and therefore it could be argued there was little room for improvement in this respect.

Finally, students also report on those aspects they find most motivating about their target language. The results obtained point to both CLIL and non-CLIL students seemingly granting more importance to the amount of things that speaking English enables them to do, which may be taken as a sign of students being more instrumentally-motivated. However, this also needs to be interpreted in combination with other results such as the growing interest expressed by participants concerning

English music and films, which points to the more integrative end of the motivation continuum. This could be read in the light of the L2 self theory lately put forward by Dörnyei (2009; see also Polat and Schallert 2013), which no longer neatly separates integrative and instrumental motivation, and points to the learner as gradually learning to see him/herself as a member of a target community which is transnational in nature (see also Yashima and Zenuk-Nishide 2008). This may at least help explain the fact that native English-speaking people and their culture(s) are of no particular interest to our participants.

4.2 CLIL: Effects on Affectivity Related to the Content Subject Taught Through English

Concerning the second research question, which looked at the effects of a CLIL programme on affectivity related to the content subject taught through English, no significant differences were found among CLIL students regarding their positive attitudes to CLIL subjects, which indicates that such attitudes are fairly homogeneous.

As for their beliefs towards the content subject taught through English, no significant differences were found between T1 and T2 except for one particular aspect, which indicates that CLIL students find it easier to understand their CLIL subject at T2 (Section 2 ABM, item 20). Thus, the greater and more meaningful exposure to English in CLIL programmes seems to be effective when it comes to increasing students' language understanding, particularly as far as their receptive skills are concerned. This is something that had already been reported about language immersion programmes (Genesee 1994; Grabbe and Stoller 1997) and, more recently, about CLIL itself (Ruiz de Zarobe 2015).

Results also point to CLIL students being remarkably motivated in their EFL lessons, reporting individual hard work, with no significant differences across time. This may be taken as further evidence that they were highly motivated in the first place. Therefore, CLIL might not play a major role in increasing an already high motivational level (see Trenchs-Parera and Juan-Garau 2014, who find a very similar pattern in a higher education context).

As regards motivation in relation to their CLIL subject, there is little variation across time, although scores tend to be slightly lower at T2. It is worth noting, however, that the scores obtained by the "teaching method" are higher at T2, which might be an indicator of CLIL students' growing appreciation of CLIL. Surprisingly, "teaching method" is also cited among those least motivating factors about the CLIL subject, but it should be added that, even when considered a drawback, methodology is on the whole seen in a more positive light at T2.

Additionally, evidence has also been found that CLIL students' willingness to study their content subject through English is driven by a mix of instrumental and

integrative motivation factors at T1, although the latter clearly prevail at T2. Thus, it can be posited that the CLIL programmes under study have a positive effect on the students' motivation, particularly of the integrative kind, again in line with Coyle (2006a) or Wilhelmer (2008). Further support of this thesis can be found in the fact that CLIL students increasingly enjoy having to use and communicate in English in their CLIL subject.

4.3 Language Profile and Interest in Language Learning

In order to enquire into our third research question, which considered the possible relationship between language profile and interest in language learning, the participants' language profile was examined. Results show that the CLIL and non-CLIL groups are different as regards their L1s, with Catalan prevailing over Spanish among the former whilst the reverse applies to the latter. The percentage of users of languages other than Catalan, Spanish and English is also much higher among non-CLIL participants. This points to the non-CLIL participants in our sample being more ethnically diverse than their CLIL counterparts.

Additionally, CLIL students obtain higher marks in Catalan (the schools' vehicular language) and English, and slightly lower marks in Spanish, even though these differences are not significant. This may be related to the different language background found among participants.

The different language profile found between both groups of participants may be an indicator of extrinsic factors (e.g. socio-economic context and cultural capital) which may have played a role in the participants' academic performance, including their language-related subjects (for a fuller discussion, see Boada et al. 2011). Such performance, therefore, might be related to aspects and factors other than learning context (CLIL or FI, in our case). Indeed, the greater ethnic diversity detected among the non-CLIL students may in turn be illustrative of the high immigration rates that have of late characterised Majorcan society (see Chapter "Learning English and Learning Through English: Insights from Secondary Education" for further details). The greater diversity of cultural traditions, economic and linguistic backgrounds found among non-CLIL participants may therefore have had an impact on their school performance and other related issues. In this respect, it is important to highlight that results reveal statistically significant differences between CLIL vs. non-CLIL students as far as the learning of an additional foreign language other than English is concerned ($t = -2.044$; $p < 0.05$). Unlike non-CLIL students, the majority of CLIL participants report speaking a second foreign language in addition to English. Therefore, CLIL students present a richer, more complex language profile which, linked to the socio-economic and cultural capital issues referred to above, may be related to higher motivation and linguistic performance.

4.4 Do Learning Context and Gender Influence the Development of Affective Factors?

Regarding our fourth research question, and taking both CLIL and non-CLIL students in combination, significant differences were found between male and female participants concerning attitudes towards English as a foreign language. This may be seen to be in line with Block's post-structuralist view that gender is a "multilayered, graded" phenomenon, "grounded in social interaction" (2007: 866). The L2 self would therefore also be gendered, and this variable may interact with others such as "race, ethnicity, age, […] and social class" (Block 2007: 869) in the development of attitudes, beliefs and motivation. This is in agreement with previous research carried out by Brecht et al. (1995), Kinginger (2004), Isabelli-García (2006), Merisuo-Storm (2007) or Pavlenko and Piller (2008).

In our study, females seem to be more fully aware of the importance of being able to communicate in English, considering the importance of the tourism sector and the size of the resident tourist population in the Balearic Islands. This, which may point to a higher level of instrumental motivation among females (it is difficult to get a job in Mallorca if applicants do not speak English), may also be attributed to greater social sensitivity and eagerness to embrace a wider society than their own. In this respect, it should be noted that research has concluded that "many women around the world see learning English as a way of liberating themselves from the confines of gender patriarchy" (Pavlenko and Norton 2007: 677). This would again signal a rather blurred line separating instrumental and integrative motivation. In fact, overall female participants express remarkably more positive attitudes towards language-related issues which point to female learners being more integratively-motivated than their male counterparts. This is in line with most of the research conducted in the area (see, e.g., Sunderland 2000; Kobayashi 2002; Schwieter 2008).

However, it is worth noting that no significant gender-related differences were found among CLIL students concerning attitudes, beliefs and motivation. This finding is also consistent with the available literature showing that gender-based attitudinal differences seem to wane in the so-called "immersion" (Baker and MacIntyre 2000) and content-based language learning programmes (Lasagabaster and Sierra 2009).

Conclusions

The main aim of this study was to provide insights into affective factors concerning English and foreign language learning among secondary school students in two different learning contexts (CLIL vs. non-CLIL) in Mallorca. Overall, the following findings can be highlighted. First, although CLIL students tend to have more positive attitudes and beliefs than their non-CLIL

(continued)

peers, such differences are not significant; secondly, motivation grows among both CLIL and non-CLIL participants, reaching higher levels among the former, but CLIL students are already highly motivated at T1, leaving less room for improvement at T2; thirdly, there is evidence that CLIL and non-CLIL groups are different as regards their L1s, Catalan being more widely represented among students in the CLIL group, and Spanish and languages other than English being clearly more representative in the non-CLIL group; finally, significantly more positive overall attitudes are found among female participants, although gender-based differences are not statistically significant within the CLIL group.

To conclude, a possible reading of such findings could be as follows. To start with, CLIL seems to prove beneficial regarding the development of attitudes, beliefs and motivation. However, this cannot be taken as the sole factor playing a role here. Thus, the CLIL and non-CLIL students in our sample behave differently in that the former show far more homogeneous patterns regarding affectivity and are already more highly motivated prior to treatment.

Secondly, CLIL students report lower anxiety levels when speaking English in class. CLIL does seem to have played a role in increasing their confidence since this methodology substantially increases the participants' exposure to the English language. However, this does not seem to result in significantly higher grades in EFL, as reported by participants.

Thirdly, the different language background of the CLIL and non-CLIL groups (and the implications this may have in terms of social background and cultural capital) should also be considered when accounting for the more positive attitudes that CLIL students show towards foreign language learning in general. In this regard, the CLIL participants' higher motivational standpoint at T1 above may be seen as an indicator of the possible streaming of the best students into the CLIL group (common practice within CLIL programmes throughout Europe, including Spain—see Eurydice 2006; Bruton 2011). This interpretation is largely congruent with the information provided by three of the schools involved in this research, which use the student's general academic performance as a screening factor for admission into CLIL pilot programmes.

Finally, female students in general present more positive attitudes than their male counterparts, but gender-based attitudinal differences do not prove to be statistically significant within the CLIL group. Although this affords different readings, it may also suggest that CLIL programmes may contribute to the neutralisation of widely-reported gender-based differences concerning attitudes, beliefs and motivation in foreign language learning, in line with the successful results reported in this regard by the UK Department of Education (2011) in relation to a pilot CLIL programme developed jointly at primary schools in the UK, France and Spain.

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English Learners' Willingness to Communicate and Achievement in CLIL and Formal Instruction Contexts

Edleide Menezes and Maria Juan-Garau

1 Introduction

1.1 Understanding WTC

The acquisition of a second language depends inevitably on the learner's willingness to communicate (WTC). This premise is based on the fact that, according to prevailing theories in second language learning (see, e.g., Brown 2006), the acquisition of communicative skills is achieved mainly through the practice of communication. Thus, WTC is not only an essential requirement but also "the principal aim of language teaching" (MacIntyre et al. 1998: 545), since it affects communicative frequency and learning (Hashimoto 2002). Without doubt, the study of WTC can contribute to the final goal of language learning: real communication between people of diverse linguistic and cultural backgrounds (MacIntyre et al. 1998; Yashima et al. 2004).

WTC brings together psychological, linguistic, educational and communicative approaches to the investigation of L2 learning and can be conceived as a factor of individual differentiation that facilitates the acquisition of an L2, especially in a system that focuses on communication in the process of language learning (MacIntyre 2007). It is considered as the individual's tendency to participate in communication, when given the choice (McCroskey and Baer 1985), and is defined as "the readiness to enter into discourse at a particular time with a specific

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person or persons, using an L2" (MacIntyre et al. 1998: 547). WTC is seen as an aim in second language teaching, a variable that facilitates language learning, and an internal psychological event with significant social consequences (MacDonald et al. 2003). Above all, WTC is regarded as a volitional act (i.e. emerging from one's own will), which has the potential for organizing multiple and competitive influences (motivational, cognitive and emotional) in specific actions perceptible to the learner (MacIntyre 2007). Departing from the notion of volition and susceptibility, Kang (2005: 291) defines WTC as "an individual's volitional inclination towards actively engaging in the act of communication in a specific situation, which can vary according to interlocutor(s), topic and conversational context, among other potential situational variables". Thus, WTC emerges dynamically through the *roles* of the situational variables and can change during communication.

The study of WTC has evolved from a biological conception towards the inclusion of a more situational perspective. McCroskey and Richmond (1991), for instance, considered WTC as a feature of personality, related to individual variables such as introversion and extraversion (MacIntyre et al. 2007), self-esteem (McCroskey and Richmond 1991; MacIntyre et al. 1998), communicative competence and perception of communicative competence (MacIntyre and Doucette 2010; MacIntyre et al. 2011), apprehension about communication (Díaz-Pinto 2009), motivation and attitude (Cetinkaya and Bektas 2005) and cultural background (Cao and Philp 2006; Peng 2007a). In more recent research, however, the situational feature of WTC has also been highlighted. Among the most representative works of this trend, we find Kang's (2005) model, in which the author shows that WTC emerges and fluctuates during communication, changing from one moment to the next, thus becoming a situational variable more than a fixed predisposition or a personality trait. WTC, according to this author, is based on the interaction of psychological (security, excitement and responsibility) and situational (topic, interlocutors and conversational context during conversation) antecedents. Kamprasertwong (2010) corroborates this conception stating that WTC varies across time and situations (see also MacIntyre et al. 1998), being more affected by situational variables, such as conversational topic, than by individual or cultural ones.

The heuristic model of the variables that have an influence on WTC described by MacIntyre et al. (1998) also encompasses individual, cultural and situational factors. The model includes variables such as: personality and social environment among groups (the individual and social context that is at the basis of the development of WTC); attitudes between groups, social context and communicative competence (affective and cognitive context); interpersonal motivation, motivation between groups and self-confidence (motivational trends); the desire to communicate with a specific person and the state of communicative self-confidence (situational antecedents). In MacIntyre et al.'s (1998) pyramidal hierarchy, situational antecedents have their place just below WTC, as they are the aspects that affect the emergence of willingness more directly and, consequently, of communicative language use.

1.2 Variables Influencing WTC in Foreign Language Lessons

Having signalled WTC as an essential factor in second language learning, since it affects communicative frequency and learning (Hashimoto 2002; Yashima et al. 2004), a great deal of research has been devoted to mapping the variables that relate directly or indirectly to the increase or decrease of WTC in language learning contexts.

Among the aspects that exert an influence on learners' WTC (Clément et al. 2003), some variables may be highlighted. They may be individual (e.g. the student's linguistic and communicative competence, affect, and teacher characteristics), contextual (e.g. teaching approach and classroom atmosphere) or social variables (e.g. the relationships between the subjects involved in the process of foreign language (FL) teaching and learning). Research has explored these different factors that affect WTC. Thus, a considerable number of individual variables have been investigated, including the perception of communicative competence in the FL (Hashimoto 2002; Baker and MacIntyre 2003; Liu and Jackson 2008; Kamprasertwong 2010; MacIntyre and Doucette 2010), gender and age (MacIntyre et al. 2002), the student's ethnographic vitality (Clément et al. 2003), inter- and intrapersonal intelligence (Díaz-Pinto 2009), as well as affective factors such as motivation (MacIntyre et al. 2002; Peng 2007b), confidence (Peng and Woodrow 2010) and the learner's attitudes towards class activities (de Saint Léger and Storch 2009) and towards the international community (Yashima 2002; Yashima et al. 2004). Contextual variables, including the learning context (Baker and MacIntyre 2003; Clément et al. 2003), the size of the learning group and the familiarity with the interlocutor(s) in class (Cao and Philp 2006), along with other broader social variables, such as limited access to the FL (Liu and Jackson 2008), social support (Maclntyre et al. 2001), satisfaction with interpersonal relationships (Yashima et al. 2004) and stays in the target language community (Yashima and Zenuk-Nishide 2008) have also deserved some attention.

Within contextual variables, which are of particular relevance to this chapter, group work management, classroom atmosphere, error correction, teaching approach and the role of the teacher have been seen to have an impact, whether positive or negative, on students' WTC. Díaz-Pinto (2009) has shown that group work, cooperative learning and the development of inter- and intrapersonal intelligence foster students' desire to communicate in class.

Error correction has also been related to WTC and self-confidence in communication. Actually, error correction was identified as one of the major issues impinging on WTC (MacIntyre et al. 2011). A study conducted by MacDonald et al. (2003) identified a significant percentage of participants who related the correction of errors to WTC. It was concluded that learners are more willing to speak in the L2 when they know their errors will not be corrected, whereas they feel less competent and confident when their errors are pointed out. In addition, learners feel more at ease talking in the FL with friends and family, and less willing when they are with the teacher, when they have to ask for information, in evaluation contexts or when

the conversation focuses on an unknown topic (e.g. MacDonald et al. 2003; Lai et al. 2012). In fact, WTC is intrinsically related to the idiosyncrasies of the communicative context and to interpersonal motivation (e.g. Hashimoto 2002; Lafford 2004; Peng 2007b; Gallagher 2013). It has also been shown that familiarity with the conversational topic and friendship between social agents are key factors for the development of WTC (e.g. Kang 2005; Lai et al. 2012). Thus, the construction of a familiar and friendly environment in FL classes should be of major concern to language teachers.

Teachers have particularly attracted researchers' attention as they play a crucial role in students' WTC, both in contributing to their motivation to communicate and interact and in creating an environment of calm and confidence. Piechurska-Kuciel (2008) considers that the role of the teacher in language classes is vital to the achievement of academic goals, as well as to the regulation of social and emotional processes. To make the teacher's action effective, pedagogical efforts should be oriented towards the increase of WTC (Peng 2007b), the development of students' autonomy, and the strengthening of their affective variables (self-esteem, self-confidence and assurance).

Certain features of the teaching process can contribute as much to the increase as to the decrease of WTC. Liu and Littlewood (1997) state that a record of inadequate learning experiences (mostly focused on the teacher's discourse) could explain why many students present unwillingness to communicate in FL classes. On the other hand, a good class environment increases WTC (Peng and Woodrow 2010). Courses having communication and interaction as their backbone contribute to a larger extent to the development of WTC. Yashima and Zenuk-Nishide (2008) claim that students taught within a communicative framework and involved in a great number of interactive activities in the FL show considerably higher levels of motivation, disposition and, therefore, WTC. Students that participate in such programmes are more involved in class tasks than those whose instruction is mostly form-focused.

Similarly, Liu and Littlewood (1997) explain that the reluctance teachers observe in FL students is actually due to previous inappropriate learning experiences in which the most frequent activity is listening to the teacher. This type of approach reduces WTC and communicative confidence while it increases the uneasiness caused by anxiety and certain error correction techniques applied by the instructor. In this sense, Kang (2005) argues that it is possible to develop WTC in the L2 through the creation of environments in which learners feel at ease and engage in real communication. Students with a high WTC are more likely to use the L2 in real situations, which contributes to the successful acquisition of the target language. Furthermore, learning activities should relate to students' interests. The proposal of inadequate activities can arouse a negative attitude in learners and, consequently, a lower willingness to participate in class. In summary, it has been observed that the teacher's appropriate performance, a suitable classroom environment, adequate error correction techniques, engaging activities, and the adoption of a communicative approach are features associated with a good development of WTC in foreign language classes.

The study of the factors that predict WTC makes the understanding of its dynamic and multifaceted nature possible. Moreover, it reasserts the important role played by situations, contexts, and types of communicative characteristics and relationships in learners' WTC. However, much of this research has focused so far on personal variables that influence WTC. As a result, very little is known about the influence of the variables related to specific language learning contexts and in particular to CLIL (Content and Language Integrated Learning).

1.3 WTC in Specific Language Learning Contexts

While it is often assumed that certain approaches or programmes such as immersion are more suitable for the development of WTC than others, few studies have been devoted to comparing different learning contexts. Yashima and Zenuk-Nishide (2008), for example, carried out research in this area by contrasting the level of WTC of students taking part in a study abroad programme, with domestic learners in either content-based courses with a communicative approach or grammar-based courses. Their results showed that students in communicative courses had more WTC than those in grammar-based courses, even though students in immersion programmes overseas obtained better results than those in the other two categories. Baker and MacIntyre (2003) concluded that immersion students, besides exhibiting a high level of WTC in the L2, demonstrated low anxiety in communication, high perceived competence in the L2 and high communicative frequency. Similarly, MacIntyre et al. (2002) have shown that immersion programmes favour the increase of WTC.

To date, there has been no research to our knowledge focusing on WTC in CLIL settings. Nevertheless, in a study about anxiety carried out in CLIL and English formal instruction (EFI)[1] contexts, Pihko (2007: 137) suggested that "CLIL classes manage to support, and perhaps even strengthen, students' willingness to use English 'publicly' even during the teenage years, when language learners' linguistic self-confidence often is fragile". Moreover, the results of immersion programmes indicate that CLIL could stimulate WTC, since the latter programme also promotes authentic and meaningful communication. In addition, as Cummins (2013: 9) remarks, "the findings of thousands of research studies conducted under widely varying sociolinguistic conditions show that well-implemented bilingual programs promote strong oral and written language skills in the minority or target language". CLIL produces a significant improvement in students' competence in a FL, allows them to acquire a higher level of oral fluency, develops their motivation, increases confidence and self-esteem and encourages participation in the classroom (Dafouz 2009), among other linguistic, cognitive and affective abilities related to WTC.

Although studies on CLIL to date are still inconclusive in many respects and some of them suggest that CLIL does not perceptibly affect the development of certain linguistic-communicative components, there is clear evidence that CLIL encourages

[1] EFI refers to the compulsory English subject in the school's curriculum.

second-language learning in different ways (e.g. Beardsmore 2002; de Bot 2002; Coonan 2007; Lasagabaster 2008; San Isidro Agrelo 2009; Brady 2009; Dillon 2009; Lorenzo et al. 2010; Grandinetti et al. 2013, among others). More specifically, existing research shows that CLIL fosters abilities directly related to WTC development, such as oral communication skills and fluency (Juan-Garau 2010; Ruiz de Zarobe and Lasagabaster 2010), active participation in communication and communicative frequency (Mariotti 2006; Wiesemes 2009), and spontaneous oral production (Dalton-Puffer 2011). For a review of the areas that thrive best under CLIL provision and those which register fewer benefits, see Ruiz de Zarobe (2015). In brief, CLIL studies on language learning, despite the scant research on affective variables in this learning context, seem to suggest that CLIL can contribute to the development of WTC in the learners' target language. However, confirmation of this assumption would greatly benefit from specific studies of WTC in CLIL contexts.

1.4 WTC and Language Achievement

Research into WTC has mainly focused on the analysis of its antecedent factors and determinants, rather than on academic results and their influence on FL learning and competence. Studies to date have mostly tried to point out the effects of WTC on communication behaviour, which is a key indicator of performance in the FL, and have found that FL competence increases WTC, which in turn feeds into FL competence, thereby developing it.

It has been shown that, in fact, WTC has a crucial effect on students' competence, since it predicts the frequency and amount of FL communicative interactions. Hashimoto (2002) found that students who were more willing to communicate spoke in the FL more frequently in class. Similarly, in a study of 160 Japanese students, Yashima et al. (2004) found that those with higher WTC tended to communicate more both in and out of class: they initiated more interactive communicative exchanges in class; they asked teachers questions outside the classroom; and they communicated with friends outside the school context. These studies indicate that learners with more WTC usually increase their communicative behaviour and take an active attitude to learning, which leads to better performance.

More specifically, Pourjafarian (2012) analysed 120 students and found that there was significant evidence that those with more WTC in English exhibited higher achievement in the language. Similar results were obtained by Lai et al. (2012), whose research revealed that WTC had a significant effect on learning. Thus, students who interacted with their peers, asking or answering questions on the specific content knowledge dealt with in class, improved their FL performance more than those who showed no willingness to ask questions or give answers to their classmates.

The few studies conducted to date seem to indicate that learners who are more willing to talk in class (with peers or teachers) show better achievement in the target language. However, several factors influence WTC behaviour in class, including group size, familiarity and involvement with partners, familiarity with

the issues under discussion, self-confidence, media and culture (Cao and Philp 2006). This evidence contributes to the understanding of the dynamic nature of WTC and leads us to consider that the interaction between WTC and achievement is permeated by the characteristics of the context, pointing to the need for studies into the relationship between WTC and achievement in specific learning contexts, particularly CLIL.

2 Method

In the light of the above, this chapter presents a study carried out in a bilingual community in Spain, the Balearic Islands, with the aim of furthering WTC research by observing the influence of learning context (CLIL and EFI, i.e. non-CLIL) on this variable. This research was conducted in three semi-private schools and aims at answering the following research questions: (1) Is there a relationship between learning context and participants' WTC? (2) Is there a relationship between language achievement and WTC in CLIL learners?

2.1 Participants

The sample of this study consists of 185 2nd year students (ages 13–14) in compulsory secondary education (CSE) in three semi-private schools in Majorca. Forty-seven per cent of the participants take English (EFI) and social science courses delivered through the medium of English (CLIL), whereas the remaining 53 % take English (EFI) and study social science in the L1 (non-CLIL learners). Boys constitute a slightly larger part of the sample (55.1 %) than girls (44.9 %).

EFI students received 3 h of formal instruction in English per week, while CLIL students had a total of 6 h of weekly instruction conducted in English: 3 h of English language class plus three additional hours of social science delivered through the medium of English (CLIL). In the participating schools, EFI sessions focus on teaching the English language through the development of the four major skills (i.e. listening, reading, speaking and writing). There is considerable attention to form and linguistic correction. CLIL classes, on the other hand, revolve around teaching non-linguistic content and create an environment that promotes the use and acquisition of English while focusing on meaning and communication.

2.2 Data Collection Instruments

The collection of data was carried out through two questionnaires: the Willingness to Communicate Scale (WTCS), and the WTC-Meter. The WTCS was adapted from the W*illingness to Communicate Scale* (McCroskey and Baer

1985) by Díaz-Pinto (2009). The original WTCS has 20 items. It is composed of three sub-scales based on the addressees or participants who engage in communication (e.g. strangers, acquaintances, friends) and four sub-scales based on the type of communicative contexts (i.e. in public, groups or pairs). The adaptation used by Díaz-Pinto (2009) contains 10 statements related to the willingness of language students in L2 classes. Each question can have a 'Yes' or 'No' answer. The version used in this study maintains the same content and structure as the version by Díaz-Pinto (2009), but the statements have been rated using a five-point Likert scale (0-Never, 1-hardly ever, 2-sometimes, 4-usually, 5-almost always), with a range of results from 0 to 50. The scale was used in this study with the aim of evaluating students' general willingness to talk in English in class and obtained a range from 1 to 47.

The second tool used was the WTC-Meter. This tool is a visual simulation of a thermometer in which the participants indicated their WTC in English in each of the two learning contexts included in this study. It is an adaptation carried out by Kamprasertwong (2010) of the original WTC-Meter, devised by MacIntyre and Gardner (1991). The WTC-Meter contained two numeric scales (simulating a thermometer) with a range between 0 and 10 in which the participants had to register their willingness to speak in English in social science lessons (CLIL) and in English classes (EFI). The range of scores obtained in this study was from 2 to 10.

As far as the internal reliability of the WTC scales used in the study is concerned, the WTCS obtained a Cronbach's Alpha[2] coefficient of 0.853 and the WTC-Meter of 0.736, indicating that both tools measured participants' WTC reliably.

Records of student achievement were obtained through the final score for each subject (social science in English and formal English teaching), provided by the three participating schools through a report card at the end of the academic year. In the case of social science, the final score reflected, mostly, achievement in the subject content and, to a lesser extent, performance in English (focusing on the correct use of the target language to transmit non-linguistic content). EFI assessment, on the other hand, looked at the development of the four language skills in the target language and the proper use of vocabulary and grammar. The final score of both subjects was based on written tests and tasks plus oral presentations.

2.3 Procedures

The data collection instruments were first presented to both CLIL and non-CLIL participants in an EFI class (first data collection) and then exclusively to CLIL participants in a CLIL lesson (second data collection). Thus, CLIL students answered the same questionnaires twice, in relation to each of these two learning contexts.

[2] Cronbach's Alpha was calculated to examine the internal coherence of the scale employed. The higher the rate, the more reliable the scale. According to the standard criterion, a rate around 0.90 shows high reliability and values around 0.60 indicate low reliability.

The first data collection in the EFI context was used to conduct an inter-subject study that compared CLIL and non-CLIL participants in that setting, while the second data collection served to carry out an intra-subject analysis comparing the levels of WTC of CLIL students in the two learning contexts they experienced. The data analysis was carried out using SPSS (Statistical Package for the Social Sciences). These data were collected at the end of the first year of CLIL instruction, which corresponded to the second year of compulsory secondary education in the participating schools.

3 Results

3.1 Relationship Between Learning Context and WTC

The inter-subject analysis, comparing the WTC index (WTCS) of CLIL and non-CLIL learners in EFI lessons through a *t*-test for independent groups, revealed that the difference between the averages of CLIL and non-CLIL groups was significant ($p = 0.001$). Thus, while the average WTCS of CLIL participants was 25.18 (SD = 10.575), that of non-CLIL students was 17.45 (SD = 9.939), as shown in Table 1. These results indicate that general WTC in English is higher among CLIL students than among their non-CLIL counterparts.

The second inter-subject analysis, comparing the WTC index (WTCS) of the two groups of participants in different learning contexts (i.e. CLIL participants in a CLIL context and non-CLIL participants in an EFI context), also showed that CLIL students presented significantly higher WTC rates than non-CLIL students. The WTC average of non-CLIL students was 6.03 (SD = 1.884), while that of CLIL students was 6.63 (SD = 2.025). The difference between averages obtained a significance rate of $p = 0.045 < 0.05$ (see Table 2). This analysis suggests that CLIL students have a higher WTC in the target language in CLIL classes than non-CLIL students in EFI classes, revealing a significant positive relationship between WTC and learning in CLIL contexts.

Table 1 WTC statistics for CLIL and non-CLIL groups in EFI contexts

Participants/context	Average	Standard deviation (SD)	*t*	*p*
CLIL/EFI	25.18	10.575	4.536	0.001
Non-CLIL/EFI	17.45	9.939		

Table 2 WTC statistics for CLIL and non-CLIL groups in CLIL and EFI contexts

Participants/contexts	Average	SD	*t*	*p*
CLIL/CLIL	6.63	2.025	−2.097	0.045
Non-CLIL/EFI	6.03	1.884		

Table 3 WTC statistics for CLIL participants in CLIL and EFI contexts

Participants/contexts	Average	SD	*t*	*p*
CLIL/EFI	6.85	2.190	−0.343	0.732
CLIL/CLIL	6.92	1.947		

Table 4 Correlation between CLIL learners' WTC and achievement in EFI and CLIL contexts

Achievement/WTC		CLIL WTC	General WTC	EFI WTC
CLIL	*r*	0.446**	0.082	
	p	0.001	0.549	
EFI	*r*		0.342**	0.427**
	p		0.001	0.001

**Correlation is significant at the 0.01 level

To conclude the inter-subject analysis, we compared the rates of the WTCS of the three participating schools. The results showed significant differences in the rates of overall WTC of the schools ($p = 0.003$) and that school C had higher WTC rates ($m = 25.69$) than school A ($m = 19.97$) and school B ($m = 15.70$).

The intra-subject analysis, comparing the WTC index (WTC-Meter) of CLIL students in the two contexts (CLIL and EFI) through a *t*-test for related samples showed that the difference between the WTC average of CLIL students in CLIL and EFI contexts was not significant, with a rate of $p = 0.732$. The average of WTC in EFI lessons was 6.85 (SD = 2.190), while in CLIL classes it was 6.92 (SD = 1.947) (see Table 3). These results indicate that the WTC index of CLIL students remains stable, with no significant variation in the two different learning contexts under scrutiny (i.e. formal instruction in English and social science delivered through the medium of English).

3.2 Relationship Between Language Achievement and WTC

The results of the Pearson correlation analysis conducted showed that CLIL participants' WTC had a significant relationship ($p = 0.001$) with achievement in CLIL and EFI contexts (see Table 4). The observed correlation was 0.446 for WTC in the CLIL context, 0.427 for WTC in the EFI context, and 0.342 for general WTC. These results suggest that learners who are more willing to communicate get better grades and hence exhibit higher achievement both in CLIL and EFI contexts.

According to the linear regression model applied, 19.9 % of the participants' achievement in CLIL classes—18.3 % in the case of EFI classes—related to participants' WTC in English. Thus, the model indicates that students with higher WTC rates exhibit higher achievement, because the relationship between these variables is significant ($p = 0.001$), as illustrated in Table 5.

Table 5 Relationship between WTC and achievement

Predictor variable	Answer variable	Linear regression		ANOVA	
		R	R^2	*F*	*p*
WTC CLIL	Achievement in CLIL	0.446	0.199	4.535	0.001
WTC EFI	Achievement in EFI	0.427	0.183	4.307	0.001
General WTC	Achievement in EFI	0.342	0.117	4.164	0.001

4 Discussion

Our results have shown that CLIL students' WTC is higher than that of non-CLIL participants in an EFI context, and that it remains stable in the different learning contexts (CLIL and EFI). In fact, the first inter-subject comparison produced a significant difference in the WTC index of CLIL and non-CLIL students, providing evidence that CLIL students appear to have more WTC than their non-CLIL counterparts. These findings corroborate the results obtained by MacIntyre et al. (2002), Baker and MacIntyre (2003) and Yashima and Zenuk-Nishide (2008) as regards the fact that students in more communicative courses (such as CLIL, immersion programmes, content-based L2 instruction and study abroad) are more willing to communicate in the FL during lessons.

These results also agree with the study by Pikho (2007), who, when investigating anxiety in CLIL and EFI contexts, observed that CLIL students were more willing to use English in the classroom than their non-CLIL peers. They also extend the findings of Coyle et al. (2010), according to which CLIL differs from traditional teaching approaches in its potential to foster motivation and cognition. The present study has revealed that CLIL also differs from other approaches in its potential to boost students' WTC. This evidence is confirmed by the fact that the learners participating in CLIL as an integral part of their school's curriculum (school C) increased their WTC in much the same way as students who had chosen to participate in CLIL.

A possible explanation as to why CLIL students show more WTC is that the CLIL approach provides them with a more intensive exposure to the target language and with more real opportunities to use this language than traditional EFL learning contexts (Lorenzo et al. 2010). Additionally, the difference in WTC between CLIL and non-CLIL students can also be related to the hypothesis by Yashima et al. (2004), according to which learners who have an image of themselves as possible or ideal users of the foreign language make more effort to become proficient users and develop a higher WTC in the FL. The acknowledgement of the practical usefulness of the FL and the need to master it as a means to achieve other goals may also stimulate WTC in students. It could also be hypothesized that linguistic and communicative competence (considered to be higher in CLIL students) could be a determinant factor in CLIL students having higher WTC. In short, in line with what Peng and Woodrow (2010) indicate, it could be related to a more positive self-assessment of their competence in the FL, more confidence and motivation.

It is also possible that the higher WTC rates of CLIL students are connected with CLIL-related practices such as the predominance of cooperative learning in small groups (Díaz-Pinto 2009; de Saint Léger and Storch 2009), a classroom environment conducive to communication (Peng and Woodrow 2010), a low rate of correction (MacDonald et al. 2003), the frequent use of communicative activities (Ruiz de Zarobe and Lasagabaster 2010), the prevalence of high motivation and positive attitudes towards FL learning among CLIL learners (Coonan 2007; San Isidro Agrelo 2009), and learners' familiarity or interest in the subject discussed (Cao and Philp 2006).

Among these explanatory factors of students' WTC in CLIL contexts, it is worth mentioning familiarity with the subject. In fact, topic familiarity significantly affects the ease of language use (MacIntyre et al. 1998). In this sense, Kang (2005) reports that learners tend to feel insecure about discussing a topic of which they have little background knowledge. In the same vein, Cao and Philp's (2006) findings show that preparing the topic can produce greater confidence, but too much preparation can result in lack of motivation or willingness to participate in a group discussion. From this evidence, we might surmise that CLIL classes increase students' WTC as themes are generally worked on in some depth in this learning context, unlike EFI classes, which may treat topics more superficially. This suggestion, however, would need further investigation in order to verify if this is indeed the case.

The results of the present study also demonstrated that CLIL participants' WTC does not vary in CLIL and EFI contexts. This finding contradicts the results obtained by Gefaell and Unterberger (2010), according to whom CLIL students preferred to speak English in EFI classes rather than in CLIL classes, where they often kept silent even when allowed to use their mother tongue. Our results could suggest that, although the manifestation of WTC is conditioned by the learning context among other factors (Kang 2005), it also has a stable component linked to the variables of personality, which enable it to remain unchanged in different educational environments, as suggested by McCroskey and Richmond (1987) and Barraclough et al. (1998). In this regard, WTC has been associated with stable aspects such as self-esteem, self-confidence and perceived competence in the FL, as suggested by McCroskey and Richmond (1991).

Finally, our research findings showed that achievement in the FL was significantly related to the participants' WTC in English, and that students with higher WTC rates exhibited higher achievement, in both English as a subject (EFI) and in social science taught through English (CLIL).

This relationship between WTC and achievement corroborates the results by Pourjafarian (2012), who found that there was significant evidence that students with more WTC in English show a better performance in the target language, and Yashima et al. (2004), who claimed that competence in the FL depends on satisfactory levels of WTC. Similarly, Hashimoto (2002) reported that WTC affects communication frequency in the classroom and, consequently, learning. For their part, Lai et al. (2012) studied the relationship between WTC online and learning outcomes. They concluded that WTC has a significant effect in raising the learner's level of linguistic achievement, in line with our findings. Indeed, the higher

achievement of students with high levels of WTC can be related to the fact that WTC in the FL is the main determinant of its use (Ortega 2009) and, therefore, one of the most important determinants of achievement, as learning an FL depends inescapably on the frequent use of that language (Widdowson 1991). The results obtained herein regarding the relationship between WTC and achievement could also be explained by a higher perceived competence on the part of CLIL participants. Thus, Cao and Philp (2006) suggest that students who have a better perception of their competence have more WTC and hence better results. In short, students with more WTC exhibit higher attainment rates probably due to their having more opportunities to interact in the classroom, a better self-concept, and higher engagement. These students seem to get more out of their learning opportunities and that is reflected in their achievement.

Conclusions

To sum up, the study has revealed that the CLIL approach seems to foster CLIL participants' WTC and that the latter remains stable in different class environments (CLIL and EFI). From the contextual point of view, it is important to point out that: (1) the CLIL experience appears to exert a positive influence in communicative learning; and (2) the promotion of WTC in other language learning contexts can be achieved through the adoption of pedagogical practices characteristic of CLIL. Among these practices, it appears that the prevalence of communicative language use, interactive tasks, collaborative work and low emphasis on explicit correction can play an important role in the creation of classes with students willing to communicate in the target language and, consequently, capable of acquiring additional languages.

Our data have enabled us to corroborate previous findings in favour of the potential of communicative approaches to generate WTC, communicative frequency and, hence, acquisition of the FL. In particular, it has been suggested that this premise is also valid for CLIL contexts.

A second research finding of the present study is that WTC is related to FL achievement. It was found that students with higher WTC in the FL showed better achievement (grades) than the students with lower WTC levels, both in content and language subjects (social science in English and English lessons). Thus, it was concluded that the CLIL experience significantly favoured participants' WTC and their achievement in foreign language.

It could be especially fruitful for further research to focus on an analysis of the contextual factors responsible for the increase or decrease of WTC in CLIL, EFI and other language learning contexts. It would also be useful to carry out a longitudinal investigation comparing student's WTC at the beginning and at the end of a period of CLIL instruction. The study of individual, affective, and contextual variables of CLIL implementation is an incipient area that deserves further attention.

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CLIL in Context: Profiling Language Abilities

Carmen Pérez-Vidal and Helena Roquet

1 Introduction

The contrast of different learning contexts and their impact on learners' linguistic development in a second or foreign language is one of the new areas of interest in SLA research. Collentine and Freed (2004: 158) have argued for the relevance of analysing context dependent effects: "[…] The study of SLA within and across various contexts of learning forces a broadening of our perspective of the most important variables that affect and impede acquisition in general". Their study dealt with an unconventional learning context, Study Abroad (SA), and its impact on learners' linguistic and attitudinal development. The CLIL (content and language integrated learning) approach to education represents another unconventional learning context in that respect. It is also one that holds enormous promise for the field of SLA research, in spite of being still in its infancy, in terms of both accumulated experiences and assessment of results. Indeed, in France, Italy, Spain, Finland, The Netherlands, to take a few reported cases, programmes, either in foreign or second languages, really only got off the ground at the beginning of and throughout the 1990s, as described in Grenfell (2002). However, there are a few exceptions such as Germany, where the first CLIL programmes date from the mid 1960s (Wolff 2002; Zydatiss 2012), and Belgium (Van de Craen et al. 2007). They were visibly dovetailing the European policies of the time (European Commission 1995). In sum, both CLIL experiences as such and CLIL studies are young, particularly in comparison with nearly 50 years of Canadian immersion experiences.

CLIL has been defined as an European approach to education in which a language different from the domestic language is used as the medium of instruction for

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curricular subjects at primary and secondary stages of education.[1] The origins of the CLIL proposal lie in bilingual approaches to education in Europe and around the world either in particular schools or school regions (see Lasagabaster 2015). CLIL rapidly showed the capacity to take on board lessons drawn from them and in particular from the Canadian and US immersion programmes and content based instruction (CBI).[2] The ultimate objectives of CLIL programmes have been summarised by Zydatiss, who underscores the 'bifocal' nature of the approach encompassing both content and language, as has been strongly advocated by specialists, in the following highly realistic terms:

> […] the overriding purpose of the CLIL approach in our multilingual highly mobile societies would seem to be empowerment of school learners (through the performance of scholastic tasks) to acquire subject knowledge, study skills and cognitive operations (based on verbal thought) via a foreign language, almost regardless of which particular school subject or topic may be chosen in a specific instructional setting. (Zydatiss 2012: 23)

It is indeed true that CLIL can be described as an idiosyncratic development in modern European educational policies vis-à-vis languages, as Pérez-Vidal (2015) and Lasagabaster (2015) present in detail. It reflects multilingual policies and the promotion of mobility and internationalisation as the ultimate goal across the educational systems of the 27 member states in the Union, with its total 23 languages and populations "exhibiting mostly a monolingual habitus", as Dalton-Puffer (2011: 185) very rightly points out (for an update on European multilingual educational policies, see Cenoz and Genesee 1998; Cenoz and Jessner 2000; Wilkinson 2004; Dalton-Puffer 2007, 2008; Dafouz and Guerini 2009).[3]

If we now turn to CLIL studies, research on the linguistic, content and attitudinal effects of CLIL has gained momentum throughout the past decade producing the first interesting findings both regarding its pedagogical dimension, with an emphasis on the pragmatic and discourse features of classroom language, content learning attainment and linguistic progress, the latter being the focus of the study presented in this chapter. The psycholinguistic dimension of CLIL has been described in terms of the quality of its input (meaning oriented) and interaction (focused on subject matter) and the cognitive/learning abilities which it fosters (see Muñoz 2015). Focusing on such language learning outcomes, we are beginning to identify the areas of second/foreign language competence, which are most likely to benefit from CLIL instruction and those which seem to do less so, and the variables which seem to affect progress or lack thereof (see in this volume: Ruiz de Zarobe 2015; Prieto-Arranz et al. 2015; Gené-Gil et al. 2015; Rallo Fabra and Jacob 2015; Juan-Garau et al. 2015;

[1] 'Integrating content and language' (in 'higher education'), that is ILC/ILCHE are the corresponding terms used to refer to the same or similar approaches, respectively, at tertiary level, or the specific ones 'English-medium instruction' (EMI) and 'English taught programmes' (ETP) (see Pérez-Vidal 2015 for further details).

[2] See Pérez-Vidal (2009, 2013) for the European perspective; Genesee (1987, 2013) and Wesche (2002) on the Canadian experiences; and Brinton et al. (1989) for an update of CBI in the US.

[3] Dalton-Puffer (2011: 184) also notes that an analogous process seems to have taken place in other continents, Latin America and China being cases in point.

Amengual-Pizarro and Prieto-Arranz 2015; Menezes and Juan-Garau 2015). This chapter focuses on such different linguistic gains when analysing secondary school CLIL learners enrolled on a programme offered at a school in a large Catalan city in Spain (see Juan-Garau and Salazar-Noguera 2015 for a general description of secondary school contexts in our setting). The programme was carefully designed by the school board and language specialists, both internal and external, well in advance of its implementation, in order to ensure maximum efficacy and stability over the years. The study features intergroup contrasts with a non-CLIL group. The chapter first summarises the current state of thinking regarding CLIL effects on linguistic progress, then presents the study and its results and finally discusses them and draws some conclusions.

2 CLIL Under Scrutiny

The interest in the investigation of CLIL programmes is undeniable, and only paralleled by the undiminishing interest in the analysis of the educational experiences on which CLIL has undoubtedly been modelled. These are the immersion programmes set up in the U.S., mostly for Spanish, and those in Canada, both in the mid 1960s, the latter, at the start, with the explicit goal of "additive bilingualism" for English-speaking students in a language other than that of their home and wider community, namely French. It is thus not surprising that research on the effects of European CLIL contexts of learning has often sought to substantiate North American findings with regard to such immersion programmes and probed in the same areas of learner development.[4]

The CLIL research literature has thus focused on three main areas of enquiry in which such an educational approach was expected to have an impact and become a "catalyst for change", as Dalton-Puffer calls it (2011: 186): the learners' L1 and how it may be affected by the use of an L2 as the medium of instruction; content learning attainment through an L2 and target language progress (see Ruiz de Zarobe 2015 as an example of a chapter encompassing those three research strands).

With respect to the first issue, Canadian research not only shows the absence of negative effects of immersion on the development of learners' L1s but it actually posits cognitive benefits (see for example Cummins 1976) and advantages on content learning (Genesee 1994). Turning to the linguistic effects of immersion, "meticulous research has put it under the microscope in its various forms for the past 35

[4] In Canada, early French immersion started with a well-researched experiment in St. Lambert, Quebec, in a kindergarten in 1965. Thirty-five years later, the last count stood at over 325,000 students enrolled on the programmes, that is 10 % of the children in English language schools studying French (that represents 55 % of elementary school students and 47 % of secondary school students) (Wesche 2002: 358). Immersion exists in indigenous and non-official heritage languages. In the U.S., immersion started in the Coral Way school programme in Miami in the 1960s to serve school populations with either English or Spanish in both languages. It is highly successful in around 248 two-way programmes in 23 states and Washington D.C. in more than ten languages.

[now 45] years, and documented it in several thousands of reports to school boards, articles, book chapters, master and doctoral theses, and books" (Wesche 2002: 357).[5] What emerges from those studies is that, in comparison to non-immersion students, immersion students develop (a) almost nativelike comprehension skills as measured by tests of listening and reading comprehension; and (b) high levels of fluency and confidence in using the second language and a more open attitude towards French culture "helping to close the gap between Canada's English and French solitudes" (Swain 2000: 208), while (c) production skills seem to be non-nativelike in terms of grammatical accuracy, lexical variety and sociolinguistic appropriateness. Consequently, immersion students in Canada have been found to be second language speakers who are relatively fluent and effective communicators, but non-targetlike in terms of grammatical structure and non-idiomatic in their lexical choices and pragmatic expression in comparison to native speakers of the same age. In contrast with students learning French in traditional core French language arts courses, Wesche (2002) summarises results stating that all types of French immersion programmes, that is early immersion—starting between 4 and 6 years of age—, middle or delayed immersion—starting at age 9— and late immersion—starting at either 11 or 12—consistently lead to far stronger French proficiency in all skills than does traditional language instruction (forty minutes per day) and prepare students for bilingual secondary school programmes with approximately a third of the course work taught through French.

Against such a backdrop, if we now turn to CLIL effects concerning language achievement, general statements regarding the CLIL impact on students' language learning outcomes are by and large very positive. This is the case of the Netherlands (Admiraal et al. 2006); Spain (Lasagabaster 2008; Alejo and MacArthur 2009; Lasagabaster and Ruiz de Zarobe 2010; Lorenzo et al. 2010; Pérez-Vidal and Juan-Garau 2010); Austria (Ackerl 2007; Dalton-Puffer 2007, 2008, 2011); Norway (Hellekjaer 2010); Sweden (Sylvén 2004); Finland (Nikula 2007), Belgium (Van de Craen et al. 2007) or Germany (Zydatiss 2007, 2012), to name but a few.

More specifically, recent updated replications by Dalton-Puffer (2011) and Ruiz de Zarobe (2008) to initial well-known reviews of findings (Dalton-Puffer 2007, 2008) emphasize the potential contrasting CLIL versus non-CLIL effects on receptive versus productive abilities as follows: (a) reading clearly improves in CLIL groups but results are mixed with respect to listening (Hellekjaer 2010); (b) CLIL groups' receptive vocabulary clearly improves: it is larger, including words from lower frequency bands used more appropriately and with a wider stylistic range than in non-CLIL groups (Zydatiss 2007; Jexenflicker and Dalton-Puffer 2010); (c) only some morphological phenomena such as sentence complexity and affixal inflation improve with CLIL (Dalton-Puffer 2007), but not the use of null subjects, negation and suppletive forms (Villarreal Olaizola and García Mayo 2009); (d) spoken fluency rates and risk-taking rise most noticeably (Escobar Urmeneta 2004; Zydatiss 2007; Lasagabaster 2008; Ruiz de Zarobe 2008; Moore 2009); (e) written fluency

[5] See, for example, Genesee (1987), Allen et al. (1990), Harley et al. (1990), Johnson and Swain (1997), and Genesee (2013).

and lexical and syntactic complexity improve (see previous references); and (f) so do emotive-affective factors. On the other hand, those aspects which are either unaffected by CLIL or for which research is inexistent or inconclusive are: (a) syntax; (b) productive vocabulary; (c) written accuracy and discourse skills such as cohesion and coherence, discourse structuring, paragraphing, register awareness, genre and style and pragmatic efficiency (see Whittaker and Llinares 2009; Llinares et al. 2013 for comparisons of L2 and L1 subject writing); (d) informal/non-technical language; (e) pronunciation (degree of foreign accent).

Of particular interest are studies which triangulate findings in an attempt to model patterns of learning. Zydatiss' (2007) empirical study relating language proficiency scores in the L2 and academic development is a case in point. He suggests a double language threshold (a lower one and an upper one), which would act as "intervening variables that either impede or support subject-matter learning in German CLIL classrooms" (Zydatiss 2007: 27).

However, critical voices are beginning to make themselves heard both in relation to the CLIL programmes themselves and to the research measuring outcomes. One shared general observation with data from Austria seems to be reduced active student participation in the classroom, which, as stated by Dalton-Puffer et al. (2008), may lead to less learning. Another is the finding that content teaching is conducted almost entirely without writing activities, as reflected by research findings. Criticism has been strong at the methodological level and indeed CLIL research is still at an early stage: due to the continuous growth in the number of CLIL programmes, often those under scrutiny are either in a pilot phase (see Eurydice 2006, 2008) or are purely experimental, with the array of methodological consequences that entail in terms of the reliability and validity of findings (as discussed in Moore 2009). In addition to that most samples analysed can only be compared to the same age groups of learners exposed to foreign language instruction, without the time advantage of the CLIL lessons unless ages are matched, thus representing yet another obstacle for the generalizability of results. In that vein, Bruton (2011) re-evaluates some of the existing research on CLIL particularly in terms of sampling, pretesting and observation data and questions both quantitative and qualitative results and the conclusions drawn thus far.

3 The Study: A CLIL Programme in Practice

In the study presented in this chapter, the effect of a CLIL programme on English as foreign language (EFL) linguistic progress is examined. Data were collected at a well-established school located in the city of Barcelona, Catalonia. The whole process which the school went through to launch the programme can be seen to be an example of good practice with regard to the implementation of a robust long-term programme (see Escobar Urmeneta and Pérez-Vidal 2004 for a full description of the planning phase). Eventually, assessment of results was allowed to take place and afforded the data presented in this chapter.

3.1 The CLIL Programme in Context

The school council of the Catalan educational institution in which data for this study were collected had decided to adopt a CLIL approach after taking into consideration and evaluating different innovative initiatives for their language department. Their aim was to guarantee adequate exit levels in English as a foreign language and a good preparation for a university degree where knowledge of languages was seen to be an asset.

A team of university experts, one of them being the first author of this chapter, was contacted to act as school consultants for the preparation and subsequent follow-up of the programme. They were to: (a) provide the school managers with advice on the decisions to be taken in relation with the design of the programme; (b) provide advice on how best to communicate the novelties and the rationale behind them to parents; (c) train the teachers and advise them in the design and selection of appropriate activities and materials, and in their choice of suitable teaching techniques; and (d) counsel and monitor the teachers during the first year of the programme.

Throughout that year and prior to the implementation of the CLIL programme the school undertook a preparatory period which, stage by stage, involved the three distinct parties with a major role in the programme:

- Stage I was devoted to the School Board: the Head teacher and the Language Coordinator. At this stage decisions were made as to the design of the implementation programme. It was to affect Grades 3 and 5 (8- and 11-year-olds respectively) with CLIL lessons in Science.
- Stage II included the families: a lecture was given and a leaflet was issued with answers to the most frequently asked questions in relation with CLIL.
- Stage III was addressed to the teachers and it involved an extensive 30-h Teacher Education Programme over 1 year. Twelve primary class teachers, four primary English teachers, and four secondary teachers (two specialised in EFL and two in Science) took part. The course was centred on developing strategies for fostering learners' listening and speaking abilities, unit design and lesson planning, and, finally, assessment.

Thus, the model adopted by the school constitutes an unusual case of fruitful collaboration between research experts and school administrators and practitioners taking place in Europe (Escobar Urmeneta and Pérez-Vidal 2004).

3.2 The Linguistic Impact of the CLIL Programme

In order to analyse the linguistic impact of the CLIL programme described above, the present study collected data from the first cohort of learners on the Science CLIL programme in Grade 7 and compared them with learners who had not been involved

in the programme. They both followed the conventional official curriculum in which EFL is taught as formal instruction (FI). That is, the CLIL group (Group A), follows FI and in parallel CLIL instruction (FI + CLIL), and hence it receives some 'extra' hours which are CLIL hours. The non-CLIL group (Group B) follows an FI only programme. The combination of FI and CLIL in parallel is the current arrangement in most CLIL programmes in Barcelona.

The study addresses the following research question: When contrasting a group experiencing FI in combination with CLIL, and a group experiencing FI only, which programme results in linguistic benefits, if at all, and which skills benefit the most, if any? On the basis of the review of the literature presented above, we establish the hypothesis that the group in the FI + CLIL programme will improve significantly more than the FI group, and the receptive skills to a larger degree than the productive skills.

3.3 Participants

Participants were 2 groups of Catalan/Spanish bilingual EFL learners for which English was their L3. Group A ($N = 50$) was the experimental group experiencing the FI plus CLIL, so they are the FI + CLIL group (from now on GA: FI + CLIL group). Group B is the control group ($N = 50$) experiencing only FI, so they are the FI group (from now on GB: FI group). There are 50 % of males and females in each group.

Having been together in the same school since nursery, both groups had started learning English at the age of 5/6 (Nursery), hence shared the age of onset of instruction (AoI). Data collection started when at the end of their first year of secondary education (Grade 7) at the age of 13. They had both therefore had 8 years of FI. However, GA: FI + CLIL had received 3 years of the extra CLIL hours from the age of 10 years (Grade 5). In order to make comparisons possible, GA: FI + CLIL was not matched for age with GB: FI, which would have created a disadvantage in terms of time of exposure to English, but for total number of hours of exposure. Consequently, this entailed that the latter group included learners who were a year older than the former, as Table 1 displays.

Table 1 Participants ($N = 50$)

	Data collection	
AoI in English	T1	T2
GA: FI + CLIL	Grade 7 (12/*13* years)	Grade 8 (13/*14* years)
FI: Nursery (5/6 years)		
CLIL: Grade 5 (10/11 years)		
GB: FI	Grade 8 (13/*14* years)	Grade 9 (14/*15* years)
FI: Nursery (5/6 years)		

3.4 Design and Rationale of the Study

The study has a longitudinal pretest-posttest design as Table 2 below shows. Both groups of learners were measured respectively before and after one academic year in order to tap into gains obtained over the course of that year. Then, as their respective accumulated hours of exposure to English were very similar at the first data collection time (T1), although for GA: FI + CLIL some of the hours were CLIL hours, the difference in gains obtained by each group over that year was calculated. The quantity of hours being similar and the quality being different, any contrasts in the gains obtained by each group over a year treatment was expected to reveal whether or not CLIL hours have a significantly higher positive effect on learners' linguistic progress than non-CLIL hours of FI.

GA: FI + CLIL learners were measured in secondary when they were 13 (pretest) and 14 (posttest) years old at the end of Grades 7 and 8 respectively. They had had altogether 8 years of FI and 3 years of CLIL when data were collected for the first time (T1), and 9 and 4 respectively when data were collected a second time (T2). G: FI learners were measured in Grade 8 and 9 when they were 14 (pretest) and 15 (posttest) years old respectively, also at the end of each academic year. They had had altogether 9 years of FI when at the first data collection time (T1), and 10 years of FI when data were collected second time (T2).

Table 2 below displays the accumulated number of hours of English at T1 and T2 for each group. In the case of GA: FI + CLIL, at T1 data collection, in addition to 1,120 h of FI (approximately 140/year since Nursery) they had had 3 years of CLIL, hence a total of 210 CLIL hours (70/year). Their total exposure to English was 1,330 h. One year later, at T2, GA had had 1,260 h of FI and 280 h of CLIL, that is 1,540 h in total. GB: FI, at T1 data collection, had had 1,260 h of FI (approximately 140/year since Nursery), and at T2, 1,400 h.

In order to assess the differential degree of gain between both groups, GA: FI + CLIL gains between T1 and T2 are compared with gains by GB: FI, the control group. The design allows for a between-groups comparison of the effect of a relatively similar amount of hours of instruction: 210 h (140 FI + 70 CLIL) in GA versus 140 h (FI) in GB.

Table 2 Design

	T1	T2
GA:	Grade 7 (12/*13* years)	Grade 8 (13/*14* years)
FI + *CLIL*	FI: 1,120 h + *CLIL: 210 h*	FI: 1,260 h + *CLIL: 280 h*
	= 1,330 h	= 1,540 h
GB: FI	Grade 8 (13/*14* years)	Grade 9 (14/*15* years)
	FI: 1,260 h	FI: 1,400 h

3.5 Instruments and Data Collection Procedures

Data were elicited from intact class groups in an exam-like situation, both for productive and receptive skills. Production was elicited in writing, and reception in writing and orally. In addition, lexico-grammatical abilities were also tapped into. The instruments used to obtain the data were: (i) a composition on a given topic measuring written production; (ii) a reading task (cloze) and a dictation measuring written and oral comprehension; (iii) a sentence transformation test and a grammaticality judgement test with progressive degrees of difficulty in multiple choice format measuring lexico-grammatical ability. Data collection in two 1-h sessions was handled by the class teachers due to institutional conventions. It took place in an exam-like situation.

3.6 Analysis and Measures

Different procedures were used for the analysis of the data gathered. The reading task, the dictation, the grammar and the grammaticality judgement tests were straightforwardly corrected using objective criteria with a correcting profile. The data obtained from the writing test were transcribed using the CLAN programme. They were then analysed quantitatively for lexical and syntactic complexity, fluency and accuracy features, as Table 3 shows (Wolfe-Quintero et al. 1998). The data were also analysed qualitatively following a rating scale (Friedl and Auer 2007) whereby task fulfilment, organisation, grammar and vocabulary features were measured. Results were introduced to a Stats Graphic matrix, and the formulae for each ratio were calculated. Finally, mean results for all measures per group were drawn and compared with an ANOVA statistical analysis, the significance level set at <0.05.

Finally, the frequency figure counting for correct/incorrect items was calculated per task. A final figure representing a general score was thus obtained for each task in order to calculate linguistic progress for each specific competence dimension analysed.

Table 3 Measures used to analyse written development

Quantitative measures	Syntactic complexity	Lexical complexity	Accuracy	Fluency
Qualitative measures	Task fulfilment	Organisation	Grammar	Vocabulary

4 Results and Discussion

The results of this study for the measures presented above are displayed in Table 4. The degree of significance has been set at .05. The T2 column for each group displays amount of gains (+) or losses (−). Results reveal that both groups improve over the course of the year under study, between T1 and T2, not surprisingly, in all measures but written fluency, in which they both even lose. GB also suffers losses at T2 in written syntactic complexity, that is, amount of subordination used. However, when the degree of gains achieved by each group is compared, it is only GA, and not GB, which exhibits levels of improvement. These gains are significantly higher than GB's in three out of the four domains of competence gauged, affecting the abilities of writing, reading and lexico-grammatical competence.

Concerning the results skill by skill, GA's performance in the written composition task yields significantly larger gains for accuracy than GB's ($F[1,196]=4.41$, $p=0.037$), and a tendency towards higher use of subordination ($F[1,196]=0.25$, $p=0.6201$), whereas GB tends to show larger gains in vocabulary ($F[1,196]=0.69$, $p=0.406$). They both show losses rather than gains in written fluency, higher in the case of GB ($F[1,196]=0.08$, $p=0.7801$). As for the qualitative measures of written production, GA also outperformed GB, even in vocabulary, in contrast to the already mentioned quantitative measures ($F[1,196]=2.37$, $p=0.1256$). However, no qualitative results reached statistical significance. GB seems to only make a larger improvement than GA as far as listening is concerned, and in one written measure, lexical complexity, albeit not significantly either.

Turning to results related to reading comprehension, as tested by means of a cloze test, they reveal that GA gained significantly more than GB over the course of a year ($F[1,98]=5.14$, $p=0.0255$). When focusing on listening comprehension, as tested by

Table 4 Mean values

	GA: FI + CLIL		GB: FI	
Writing	T1	T2	T1	T2
Syntactic complexity	0.40	0.39 (+0.01)	0.47	0.49 (−0.02)
Lexical complexity	6.50	6.71 (+0.21)	6.31	6.73 (+0.42)
Accuracy	*0.120*	*0.078 (+0.042*)*	0.092	0.086 (+0.006)
Fluency	146.2	145.1 (−1.1)	149.1	144.7 (−4.4)
Task Fulfilment	2.92	3.29 (+0.37)	2.63	2.87 (+0.24)
Organisation	2.84	3.24 (+0.4)	2.49	2.76 (+0.27)
Grammar	2.40	3.06 (+0.66)	2.34	2.70 (+0.36)
Vocabulary	2.52	3.18 (+0.66)	2.53	2.74 (+0.21)
Reading	*14.3*	*16.1 (+1.69*)*	14.6	14.8 (+0.22)
Listening	109.4	112.2 (+2.8)	109.7	112.7 (+3.1)
Grammar (Lexico-grammatical ability)	*37.1*	*39.8 (+2.72*)*	38.5	38.8 (+0.3)

Note: The higher the value for syntactic complexity and accuracy, the lower the competence level
T1 first data collection time, *T2* second data collection time

means of a dictation given by the teacher, our results yield no significant differences between both groups ($F[1,198]=0.01, p=0.924$). In fact, they both showed improvement at T2, however, and contrary to what we had hypothesized, GB also presented a tendency towards higher results than GA. Finally, when turning to the last linguistic domain scrutinized, grammar results, as tested through a fill-in-the-gaps task and an error correction task, results related to lexico-grammatical ability again indicated that GA's performance was significantly better than GB's ($F[1,98]=7.39, p=0.0078$).

In sum, GA consistently produced significantly more accurate texts and grammar manipulation tasks, and read significantly better. Their written texts tended to use more subordination, be better organized, lexically richer and more purposeful. However, they were less fluent. GB showed a tendency towards better listening abilities and use of lexis when measured quantitatively. They improved in the rest of the measures, but less than GA, lost ground in fluency, like GA, and, contrary to GA, also lost in the use of subordination. GA's significant leap forward in accuracy and general lexico-grammatical ability is relevant since, as already mentioned, CLIL courses are thought to focus on meaning rather than on form. In this respect, only the extra amount of practice or transfer of skills can explain these results, as is discussed further below.

Looking at these differences in greater detail, in written accuracy, GA shows a 0.042 progress over one academic year. This is significantly higher than GB's results, which only improved 0.006 from T1 to T2 ($F[1,196]=4.41, p=0.037$). As for reading, GA obtained a 1.69 figure, which is significantly higher than GB's 0.22 improvement ($F[1,98]=5.14, p=0.0255$). In the case of listening, GA's progress reached a value of 2.8 whereas GB's progress reached 3.1, but the difference is not statistically significant. This, together with lexical complexity in writing ($F[1,196]=0.69, p=0.406$), is the only areas in which GB shows a tendency to outperform GA, as already noted.

In the light of these findings, we can address the hypothesis in the study. Our results show that the CLIL programme seems to lead learners to improve significantly more than non-CLIL learners in their abilities to write more accurate and syntactically complex texts, and to generally improve in the whole set of qualitative measures (task fulfilment, organisation, grammar and vocabulary). Significantly higher improvement also accrues in their reading comprehension and lexico-grammatical competence. It is only in the domain of listening comprehension that GB tends to perform better than GA. These findings allow us to state that the second part of our hypothesis concerning the greater progress in receptive skills for the CLIL group is only partially confirmed. Indeed, whereas reading improves significantly, listening does not. Furthermore, our findings show a significant improvement in productive skills, whereas we had hypothesized they would lag behind those for receptive skills, as writing, and particularly accuracy, significantly progress. The same occurs with lexico-grammatical abilities. This is in contrast with findings published in previous studies and will be discussed further below.

Furthermore, although it is true that significant benefits do not accrue in all skills and measurements, it is also true that tendencies in the differential progress between both groups can allow us to establish the benefits of the school's CLIL programme. Where no benefits are found it can be argued that an academic year might not have been sufficient for learners to register more substantial benefits, and that a longer course of study

might eventually show that tendencies become significant differences. Hence we would posit that our results confirm the effectiveness of a CLIL programme.

Several general considerations concerning such general progress made by the CLIL group should be made here. First, when we review the research conducted in such settings, and more specifically in other bilingual contexts, such as Catalonia and the Basque Country, studies with detailed results for each skill seem to report similar findings to ours regarding productive skills (Muñoz and Navés 2007; Lasagabaster 2008; Ruiz de Zarobe 2008; Villareal and Gacía-Mayo 2009; Pérez-Vidal and Juan-Garau 2010). This is in contrast to other studies from Europe, as CLIL students in Spain tend to show an improvement not only in receptive but also in productive skills. It is interesting to highlight that in Lasagabaster's study (2008), as in ours, younger CLIL groups also scored lower than 1 year older non-CLIL groups in the listening tests (in the present study CLIL learners scored lower than FI learners for the listening ability not only when they were younger but also when both groups shared the same age).

Second, it has to be noted that the CLIL group has more hours of exposure. However, it is of utmost importance to realise that in spite of GA having a few more hours (70) than GB, when measured at T1 GA did not always outperform GB. For example, while it is true that, as far as written competence goes, the former started at a higher onset level in the domain of lexical complexity, task fulfilment organisation and, in contrast, grammar, they had a lower onset level in the domain of accuracy, vocabulary and fluency, just as in the domains of reading, listening comprehension and lexico-grammatical ability. Hence, it could be argued that in those domains in which GA is lower at T1, quantity of hours is not what matters but other factors such as quality, readiness to learn, and motivation, among others. Another possible explanation would be the maturational constraints of GA, as the group is a year younger than GB, an issue which is beyond the scope of this chapter (but see Muñoz 2015 on this issue). What is interesting is that even in some of those domains in which GA had lower onset levels, such as reading and lexico-grammatical ability, they still outperformed GB at T2, after 70 extra CLIL hours plus 140 FI hours.

We now turn to a different set of considerations concerning the specific language skills analysed. We will first address the issue of accuracy and lexico-grammatical ability. The significant improvement found in the area of accuracy in the writing skill and in lexico-grammatical abilities is a rather surprising finding. Opposite results were obtained by the empirical studies carried out in Canada and Europe. In Canada, this led to a concern for fostering accuracy, as proposed by Harley et al. (1990) and more recently Lyster (2007). More specifically, these authors have proposed balancing the experiential and analytical approaches, that is, introducing approaches that focus on form in order to compensate for the low level in accuracy. Therefore, the fact that accuracy in the writing skill and lexico-grammatical abilities in general showed significant improvement in the case of our CLIL participants might be explained by transfer of knowledge and skills from a FI context to a CLIL context, since they are "often" and "very often" practised in the FI context. This idea is further developed below (see Table 5).

We would now like to suggest an interpretation of our results in the light of the theories related to the role of practice and skill transfer models. As regards the issue

of transfer of knowledge and skills, there are two main differences between the context on focus in our study, CLIL, and the contrasting context, FI, CLIL being nearer a natural context than FI (see Pérez-Vidal 2015 for a detailed discussion). One is the type and amount of input learners are exposed to in one and the other, the second is the type of skills practice that learners engage in. Regarding the former, we must remember that our setting is one where little input exposure can be expected to be available outside the classroom walls, hence the additional CLIL hours are quantitatively important. Additionally, CLIL's qualitative differences with FI concerning meaningfulness of interaction and authenticity of topics and materials are also key for language development. Regarding the latter, the study of practice in SLA literature has been recently retackled, especially with DeKeyser's (2007a) monographic book on practice, claiming that not only the amount of practice but also the type is crucial to language learning. Previous studies on practice had assumed a dual division between input practice and output practice. Two confronted positions have developed over the years on this issue: VanPattern and colleagues, defending the position within the input processing studies that comprehension practice alone is enough to bring about significant development, not only in comprehension but also in production (vanPatten and Cadierno 1993), and the skill-specificity theory approach, represented by DeKeyser and Sokalski (1996) and DeKeyser (2007b), which replicated vanPatten and Cadierno's (1993) study and reached the conclusion that "input practice is better for comprehension and output practice for production" (DeKeyser and Sokalski 1996: 635). Thus, adopting the latter view, we can expect that in learning contexts where sufficient input practice is provided, comprehension skills (both reading and listening) will improve after a certain period of time. What seems not so straightforward is whether production skills (speaking and writing) will also improve in learning contexts where only comprehension practice is provided (with limited production practice) such as CLIL contexts. Hence we have to resort to a different explanation for our results, that provided by transferability of practice further below.

In our research study, reportedly each of both contexts allows different patterns of language skills practice. As Table 5 below displays, in FI writing and reading skills are often practiced, at least once a week, just as lexico-grammatical abilities, practiced often in every single class session. Listening is seldom practiced, particularly

Table 5 Skill practice

Skill	CLIL context	FI context
Writing	*Seldom practised* (short exercises)	*Often practised* (at least once a week)
Reading	*Highly practised* (every class session)	*Often practised* (at least once a week)
Listening	*Seldom practised* (teacher talk)	*Seldom practised* (teacher talk)
Grammar (Lexico-grammatical ability)	*Very seldom practised* (once a month)	*Very often practised* (at least once a week)

bidirectional listening, only through teacher talk. Oral production practice is limited. In the CLIL context, whereas reading is practiced in every class session with a considerable amount of authentic texts unusual in FI, practice in listening and writing abilities is limited to teacher talk and very short exercises. Furthermore, lexico-grammatical abilities are hardly ever practiced.[6]

In addition to the impact of practice within contexts and in order to interpret our results for written production, we should take into account the possibility of transferability of practice occurring in a particular context onto another. As GA in our study experiences a CLIL context together with a FI setting, their ability to transfer linguistic skills and competences learnt in the FI classes to the communication situations encountered in CLIL sessions might have been at play and foster improvement. This might explain why, although writing skills and lexico-grammatical abilities are hardly practiced in the CLIL sessions, GA participants obtain significantly better results than GB in these domains of competence. It could be argued that the amounts of writing and grammar practice typical of FI are used in the CLIL context and what students proceduralise in a FI context is automatized while in the CLIL setting (DeKeyser 2007b). That is, the accumulated experience of FI is what may play a major role in the relative benefits of an innovative or relatively unconventional and more naturalistic CLIL learning context such as the one enjoyed by the learners in this study.

Conclusions

Results obtained to answer the research question in this study confirmed the effectiveness of the CLIL programme, something which previous research had already shown. However, significant benefits did not accrue in all skills and measurements. Therefore, our hypothesis, which predicted that when contrasting the differential effects on learners' linguistic progress of the two programmes, the group in the FI + CLIL would improve significantly more than the FI group, especially in receptive skills, can be only partially confirmed. Reading, but not listening, improves significantly. Furthermore, our findings show significant improvement in productive skills on behalf of the FI + CLIL group. This is something we had not hypothesised, as writing, and particularly accuracy, significantly progresses. A similar situation occurs with lexico-grammatical abilities. This is in contrast with findings published in previous studies. Therefore, with the present study we have contributed to showing how, under CLIL conditions, certain aspects of language competence which did not seem to register clear gains in previous studies can also be developed. This would be the case for productive skills (writing), and formal aspects such as accuracy (also in writing) or lexico-grammatical abilities.

[6] Oral production is not contemplated in our study due to unavailability of data.

These results are in line with those from the COLE project reported in Chapters "Testing Progress on Receptive Skills in CLIL and Non-CLIL Contexts", "Writing Development Under CLIL Provision", and "Does CLIL Enhance Oral Skills? Fluency and Pronunciation Errors by Spanish-Catalan Learners of English" in Part II of this volume. Indeed, in COLE, receptive skills improve the most in the case of CLIL learners in contrast with results from non-CLIL learners, similarly to what the data presented in this chapter reveal. More specifically, reading comprehension improves to a greater extent than listening comprehension, and particularly with texts of a more specific kind. As for productive skills, COLE data reveal the greater effectiveness of the CLIL approach, in combination with formal instruction, with regard to overall written production, compared to formal instruction on its own, where significant progress is attained by the non-CLIL group only in accuracy. Although this is not in line with the research review made by Dalton-Puffer (2008), it mostly supports the findings by Lasagabaster (2008), Ruiz de Zarobe (2010) and our own.

When examining factors beyond learner linguistic progress, such as attitude, motivation and willingness to communicate, results from the COLE project, as reported in Chapters "Exploring Affective Factors in L3 Learning: CLIL vs Non-CLIL" and "English Learners' Willingness to Communicate and Achievement in CLIL and Formal Instruction Contexts" in this volume, reflect that CLIL students tend to have more positive attitudes and beliefs towards English than their non-CLIL peers, albeit not significantly so. Their motivation to learn is also higher. However, it must be remembered that this is true even before the CLIL experience starts, most probably as a consequence of the fact that CLIL students are screened for good marks before entering the programme, as Chapter "Exploring Affective Factors in L3 Learning: CLIL vs Non-CLIL" clearly describes. The CLIL group also shows lesser anxiety and higher WTC, the latter being related to higher levels of achievement in EFL.

Taken together, the results presented in Part II of this volume point to a general beneficial effect of the CLIL programme over the non-CLIL programme, as it raises the level of learners' ultimate attainment. Interestingly, it might be argued that, by being often first offered to the most advanced learners (or perceived as more attractive by them), it proves effective even before the programme begins! It has often been claimed that education does not present enough interesting and challenging opportunities for those learners who find themselves in the upper levels. CLIL does indeed provide such an opportunity for them, while at the same time, since the approach can be versatile in the hands of properly trained skilled teachers, it also provides fertile ground for lower level learners to make greater progress than on non-CLIL programmes (see Escobar 2004).

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