



Universidad Internacional de La Rioja  
Faculty of Education

Master's Degree in Bilingual Education  
**Sciences and Arts: commonalities and  
differences in CLIL**

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## Abstract

The differences between Arts and Sciences subjects exist not only in the content taught, but also in the methodologies followed by the teachers. These methodologies imply the use of specific resources, materials and even assessment methods whose goals and intentions to achieve the educational objectives are different. There is a vast literature devoted to the analysis and research in new methods to improve the acquisition of knowledge and skills in Sciences or Social Studies. Little by little the implementation of those new methods allows the development of the teaching practice of educators.

In the recent years, Content and Language Integrated Learning (CLIL) programmes have appeared as a new approach to the learning of languages in the context of content subjects. The innovations and new methodologies of this approach have been revisited and improved through rigorous, sustainable and transparent theoretical studies in order to explore practical applications to different subjects, depending on the interest of the authors. However, the gap between Sciences and Arts still exists.

The main objective of the present research is the observation and analysis of the teaching practice of teachers of different subjects in a CLIL programme in order to compare whether there are significant differences between specific aspects of those subjects. The aspects observed will be the teacher's discourse, materials and resources, and assessment methods. The methodology followed to collect all data is based on the use of surveys and direct observation checklists, all of them with a rating scale to help the participants fill in the questionnaires.

Despite the sample size, the results obtained highlighted the existing differences between Arts and Sciences in some of the items observed. However, those differences were not directly related to the CLIL methodologies but to the subjects themselves, as they need specific teaching practices to achieve the educational objectives proposed in each subject.

**Keywords:** CLIL, assessment methods, teacher's discourse, materials, resources

## Table of contents

1. Introduction .....	7
1.1. Justification .....	8
1.2. Brief analysis of the state of the art .....	9
1.3. Objectives of the study .....	11
2. Literature review .....	12
2.1. Considerations about bilingualism .....	12
2.2. Bilingual education and CLIL .....	14
2.2.1. Bilingual education in Spain .....	14
2.2.2. What's CLIL? .....	15
2.2.3. The 4Cs Framework .....	16
2.3. CLIL in practice .....	18
2.3.1. Teacher's discourse .....	18
2.3.2. Materials and resources .....	20
2.3.3. Assessment methods .....	22
3. Experimental framework .....	25
3.1. Context and research participants .....	25
3.2. Methodology .....	26
3.3. Analysis tools .....	27
3.4. Data collection .....	30
3.4.1. Direct observation .....	30
3.4.2. Teacher's discourse .....	31
3.4.3. Materials and resources .....	32
3.4.4. Assessment methods .....	34
4. Results and Discussion .....	36

4.1. Direct observation .....	36
4.2. Teacher's discourse .....	37
4.3. Materials and resources .....	39
4.4. Assessment methods .....	42
5. Conclusions .....	45
6. Limitations and further research .....	48
References .....	49
Annexes .....	53
Annex A. Teacher's discourse survey .....	53
Annex B. Materials and resources survey .....	54
Annex C. Assessment methods .....	55
Annex D. Classroom observation checklist .....	56

## List of figures

Figure 1. The 4 C's framework (Coyle <i>et al.</i> , 2010).....	10
Figure 2. Language abilities & skills related to L2/FL acquisition and bilingualism (Baker, 2011). .....	12
Figure 3. Language Triptych (Coyle <i>et al.</i> , 2010) .....	17
Figure 4: Gottlieb's model of assessment of, for and as learning (2016) .....	23
Figure 5. Feedback diagram of the design of an investigation to define the object of study (Díaz Barriga and Luna Miranda, 2014). .....	26
Figure 6. Steps in the development of a survey (McMillan <i>et al.</i> , 2005) .....	28

## List of tables

Table 1: Cognitive Processes (Adapted from Anderson and Krathwhol, 2001) .....	16
Table 2: Typologies of classroom questions (Adapted from Dalton-Puffer, 2007) .....	19
Table 3: Classification of didactic resources (Adapted from Moya, 2010) .....	21

## 1. Introduction

Sciences and Arts. Arts and Sciences. This is one of the usual dichotomies that has defined our educational system since the beginning and that our students (and we ourselves) face in the last stages of Secondary education.

This important decision implies, of course, a constant comparison between these artificial branches in education. It is said that scientific subjects are more difficult and not recommended if the student has not got high marks in previous courses. It is stated that Humanities require the use of memory as they are full of dates, historical facts, etc. There is a constant fight between students of different tracks claiming that their course is harder than the other. But, is this discrimination between Sciences and Arts real or just a historical construct that simply does not exist?

Actually, the differentiation not only dives under the turbulent waters of the students. Although not always in such an obvious way, teachers have their opinions too. And those opinions undoubtedly permeate in their teaching methodologies. Or maybe the personal points of view about their subjects were transformed into the (illusionary or not) fight we have more than once heard about.

Which came first, the chicken or the egg? As many other myths in the educational practice, it is impossible to know. And maybe it is unnecessary because comparisons are never fair. Maybe it would be better to leave those prejudices aside and tackle an objective analysis of the methodologies used to expose the differences, if any.

During the MD in Bilingual Education we have had the opportunity to open our eyes to new approaches and tools that can be used in Content and Language Integrated Learning (CLIL), but this research was designed to observe and contrast with facts if all of them are used equally in Sciences and Arts or there are significant variances between them. Even knowing that the sample is not representative enough to be considered a scientific study, it can be a good starting point for future studies.

## 1.1. Justification

Although bilingual education has become more visible and accessible in schools in recent times, it existed even centuries ago. During the Roman empire, Roman administrators used Latin and Greek to expose and collect information about taxes, census, petitions, contracts, etc. (Fewster, 2002). Roman families educated their children not only in the Greek language, but also in that culture too, so that they could be more integrated when involved in trade deals or have more opportunities for better occupations.

Maybe some of those reasons have not changed too much during the last 22 centuries, although the methods and tools used to accomplish the same goals have been updated and improved. And that is why CLIL has been raised as one of the best and most used approaches in the development of bilingualism in recent decades.

CLIL was defined by Coyle as

[...] a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language.

(Coyle, 2010)

As said before, the central idea of this approach is far away from the one used in the Roman Empire to teach and learn a foreign language, but with the same goal in mind.

But it is interesting to know why CLIL has become so popular as mainstream theory of language acquisition. According to Ball (2016), CLIL has a recognizable pedagogy allowing students without high levels of the vehicular language used in the classroom to understand new concepts, sometimes reducing the language demands. In other words, CLIL makes content accessible to those who would have found limited their learning capacity.

Another point in favour of CLIL is that it can be used by any teacher no matter which subject they teach. The methodologies can be adapted to Natural sciences, Arts, Music, History and so on, having in mind that CLIL was not designed for language teachers to offer a new point of view to the so existing ones. Coyle developed it without any specific subject in mind. And



that has helped it to be accepted by teachers of any discipline as they can adapt CLIL to their own classes without much effort.

Coyle (2010) also suggests that the subject-specific methods have to be adapted to accommodate the additional language focus, but without adopting the role of a language teacher. Since the origins of integrated learning, every teacher implementing CLIL has used their own methodologies and tools based on their own experience and, sometimes, on previous experiences of their colleagues. This has resulted in an array of ideas, materials, lessons and methods of assessment that prove the flexibility of CLIL.

When looking for new tasks or activities in bilingual courses, the help of ICT is undeniable and thanks to them we can have almost anything only one click away. Each teacher sharing their work will have it focused, as imagined, on their own subject. This can help to easily discriminate what we need or can use from what we cannot. On the other hand, we barely revise and compare materials from other subjects not directly related to ours. Materials that could be helpful just by adapting the topic, for example.

CLIL is flexible enough but with very wide and open methodologies. Some teachers, maybe inexperienced, prefer to stick to the central ideas that academics developed around CLIL, using the general ideas or methodologies as a basis to their classes. Then, other teachers, more experienced or with strong convictions, use specific methodologies to adapt CLIL to their own subject, adapting materials, assessment methods or even their own discourse.

This dichotomy opens the door to the interesting question that underlies this research. If Sciences and Arts teachers share commonalities about their teaching practices under the umbrella of CLIL or if they have developed their own strategies based on the subjects they teach. This wide objective is reached by observing and evaluating classroom practices, assessment methods, teachers' discourse and materials and resources used.

## 1.2. Brief analysis of the state of the art

Although CLIL started to be implemented in the last two decades, the starting point could be found through the 1980s and 1990s using the Canadian immersion experience as a starting point (Swain and Lapkin, 1989). The integration of language and content seemed to be essential to improve the acquisition of foreign languages and so was developed under the umbrella of the CLIL approach.

This integration is considered flexible and adaptable to any subject or context, without forgetting the rigorous theoretical basis it has and being transparent in practice (Coyle, 2010). Those bases can be summarized in two general ideas: 1) Content classes include language learning; 2) Language-learning classes use content from subjects (Mehisto *et al.*, 2008).

Developing these two general guidelines, CLIL is based in the 4C's Framework (Cognition, Content, Communication and Culture) without forgetting the context in which it is developed. The 4C's are interrelated and inseparable, creating a symbiotic relationship between all the elements.

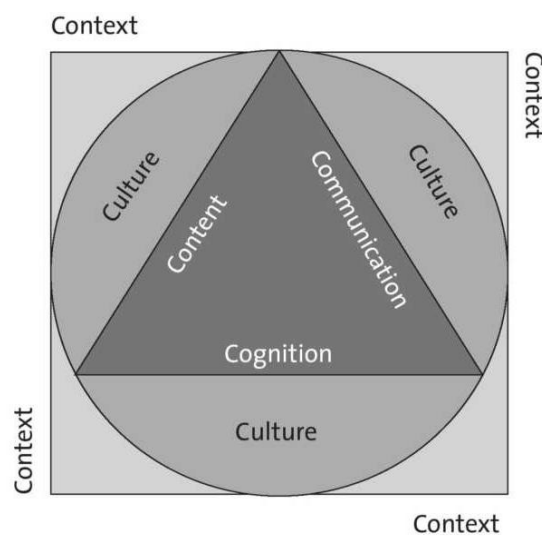


Figure 1. The 4 C's framework (Coyle *et al.*, 2010)

The interest in CLIL greatly increased and it was implemented in many countries. And then, of course, evaluated. As an educational approach with a clear goal in language acquisition, most of the studies around it referred to the outcomes of the learning process and the comparison between schools with and without CLIL. The results were clear, as the CLIL groups obtained better scores than the non-CLIL ones (Madrid and Barrios, 2018). Consequently, a new field of research was opened to academics and so there are interesting contributions related to assessment (Barbero, 2012; Lofft Basse, 2016); implementation (Cano, 2014; San Isidro & Lasagabaster, 2019); strategies (Meyer, 2010; Sierra, 2016), etc.

While the different aspects of CLIL were observed and developed, variations between subjects were only analysed in terms of comparisons and specific materials or resources.

Although there are obvious differences based on the concept of 'context', as Nogués (2021) explains, Sciences and Arts are not usually compared, as they seem so far away ones from the others that their methodologies may differ in the same directions.

That is the starting point of the present research, whether there are evident differences in CLIL methodologies applied to scientific and non-scientific subjects. For this purpose specific aspects such as materials used, teacher's discourse and assessment methods will be examined using surveys and direct observation.

### 1.3. Objectives of the study

The general objective of this study is to observe, test and analyse the different tools, materials and assessment methodologies that may have an impact in the teaching practices of different subjects in a CLIL context. Those subjects will be divided into Sciences and Arts to discuss whether there are significant differences or not.

The specific goals that make the general one more concise are:

1. Compare the teacher's discourse in different CLIL subjects.
2. Analyse the materials used in different CLIL subjects.
3. Identify the assessment tools and methodologies of those subjects.
4. Determine the possible differences between Sciences and Arts in CLIL.

## 2. Literature review

This section includes a review of the general and specific issues related to the present research. First, a brief overview of the concept of bilingualism and how difficult it is to define it. Then, a general idea of bilingual education and more especially in the CLIL approach. The final section is focused on some different aspects of CLIL that will be observed in the data collection chapter.

### 2.1. CONSIDERATIONS ABOUT BILINGUALISM

As CLIL is an educational approach to bilingualism, it is interesting to describe which are the features needed to consider someone a bilingual. Bloomfield (1933) describes bilingualism as ‘native-like control of two languages’. Many people think themselves as bilinguals if they have enough proficiency to understand and be understood in two languages. But both definitions are not as simple as they seem if we ask to the same people ‘Understood how?’ and we open the answers to the four basic language skills: listening, speaking, reading and writing. These skills can be classified in two dimensions: receptive and productive skills; oracy and literacy skills.

	<b>Oracy</b>	<b>Literacy</b>
<b>Receptive skills</b>	Listening	Reading
<b>Productive skills</b>	Speaking	Writing

*Figure 2. Language abilities & skills related to L2/FL acquisition and bilingualism (Baker, 2011).*

Figure 2 must not be seen as a checklist of yes/no answers. Some can read texts in a language, but do not speak that language. In other cases, some understand when listening a language but do not write it. And it becomes even more intricate if it is added the fact that each of us (bilinguals or not) can develop all those abilities in different degrees and depending on the communicative situations. Writing can range from basic (letters and simple words) to fluent (academic texts). Someone can understand conversations in a specific context (e.g. family and friends) but not in another (e. g. a scientific conference).

Despite the difficulty of finding a proper definition for ‘bilingual’, some authors put the spotlight on a group of bilinguals who show an evident proficiency in both languages. Sometimes, the so called ‘balanced bilinguals’ are an idealization of educational objectives

and programmes more than a reality. However, it is quite unusual that anyone can be equally competent across all situations (Fishman, 1971). Baker (2011) states that, actually, most bilinguals use their two languages for different purposes and with different people. For example, one language at work and the other one at home.

Another problem for the use of the 'balanced bilingual' term is that, in essence, balance is defined as 'keeping or showing a balance so that different things or different parts of something exist in equal or correct amounts' (Oxford University Press, n.d.). Bearing this definition in mind, a person with low levels of development in two languages could be considered a balanced bilingual. Of course, this literal idea of 'balanced' is not the one used in research and studies. Baker (2011) argues that there must be a 'reasonable' or 'appropriate' competence in both languages.

Again, the same issue arises as when debating how to measure if someone is bilingual or not. Who set the basis of the 'normal' competence? Where are the borders of basic, proficient, fluent or undeveloped?

Going back to the definition of 'bilingualism', it is impossible to obviate the context where the language is used as it implies changes in the grammar, vocabulary or even intonation. Even if someone knows the formal structure of a language, the 'who', 'where', 'why', 'what' and 'when' questions are vital in every context where communication exists. During a rally, a politician can exhibit a great ability to communicate ideas, but unsuccessful to defend them in a debate. The same idea can be transferred to the use of two languages, because the social context where those languages are used is crucial to understand the bilingual usage. As a bilingual moves from one to another situation, the language will also change regarding the one used, the vocabulary and/or the style itself.

Maybe this is why bilingualism is usually best learned informally and incidentally in 'familiar' contexts while learners naturally communicating outside schools. On the other hand, when foreign languages are acquired formally in schools or academies, the level of acquisition of the language can be considered more adequate but, in general, involving greater effort of the students and not always with the same success in all of them.

## 2.2. BILINGUAL EDUCATION AND CLIL

### 2.2.1. Bilingual education in Spain

In 1996, the Ministry of Education and Science and the British Council signed an agreement to introduce an integrated curriculum of English and Spanish in 43 public schools for students between 3-4 years old. That first promotion of student is now around 24-25 years old and almost certainly they will be finishing their university degrees or now incorporated into the labour market. Nowadays, almost every Autonomous Community has at least one bilingual programme both in public and private centres along the country with more than a million of students studying some of their subjects in English.

As a result of the integration in the European Community and the huge variety of cultural and linguistic situations, the teaching of foreign languages has been a main concern in educational policies. It is reflected in the Presidency Conclusions of the Barcelona European Council in 2002, calling for further action in:

[...] to improve the mastery of basic skills, **in particular by teaching at least two foreign languages from a very early age**: establishment of a linguistic competence indicator in 2003; development of digital literacy: generalization of an Internet and computer user's certificate for secondary school pupils.

(Barcelona European Council, 2002)

In this sense, the multiple implications of this mastery make this issue one of the fundamental objectives of the 21<sup>st</sup> century. And CLIL has been revealed as a fundamental methodological answer to that "perceived need". For this reason, Marsh (2002) states that CLIL is a pragmatic solution to a European need and provides a framework for achieving best practice.

In the last two decades, Spain has not only tried to solve the historical deficit in foreign language teaching, but also assuming a position of leadership in the European context regarding the implementation and research of bilingual education and CLIL programmes. Coyle (2010) reflects this idea when analysing the implementation results and teaching training in Spain:

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.

(Coyle, 2010)

### 2.2.2. What's CLIL?

CLIL (Content and Language Integrated Learning) is an educational approach in which a second language is used to teach both curricular content and language (Coyle *et al.*, 2010). The difference with other language-teaching methodologies is, among others, that the focus is set not only on content, and not only on language. Both are important and, thus, taught and assessed at the same time. Actually, in CLIL programmes the language is integrated in the broad curriculum, as a medium of learning content. And it is possible thanks to the fact that it is a flexible approach and can be adapted to different subjects and situations.

Another feature that differentiates CLIL is that the learner is not necessarily expected to have a second language proficiency to learn the subject. Hence, it is a means of teaching curriculum subjects through the medium of a language still being learned, providing the necessary language support alongside the subject specialism (Graddol, 2006). From another perspective, it can be considered a means of teaching a second language through the study of curricular content.

Regarding language, CLIL is based on language acquisition rather than on language learning. As the second language is used in social and real-life contexts, fluency is more important than accuracy, and learners develop fluency through use. That is what, as said above, it is not necessary a minimum level of proficiency. On the other hand, the subject matter determines the language needed to learn and this brings about language academic specialisation —Cognitive Academic Language Proficiency, CALP (Cummins, 1984).

### 2.2.3. The 4Cs Framework

According to Coyle *et al.* (2010), the 4Cs Framework integrates the different components of CLIL and their interrelationships integrated into four contextualized blocks: content, communication, cognition and culture (see Figure 1).

**Content:** In general, content is easily assimilated to curricular subjects which are included in the national curriculum. But from a wider point of view, it refers to knowledge and skills. It is about the learners creating their own knowledge and understanding as well as about developing their skills. Coyle *et al.* (2010) defend that ‘leaving these skills and knowledge to develop by chance is not an option’. CLIL teachers have to actively involve learners to be aware of their own learning .

**Cognition:** As explained above, the importance of cognitive engagement is a central pillar of CLIL classrooms. However, content learning is related to thinking and problem-solving skills. In 1956 the publication of Bloom’s taxonomy explaining the categorization of six different thinking processes, opened a new field of research and debate (McGuinness, 1999). In 2001, Anderson and Krathwhol published an updated version of Bloom’s taxonomy where the names of the major cognitive process categories were changed to verbs so as to indicate action, because thinking involves active engagements.

Lower Order Thinking Skills (LOTS)		Higher Order Thinking Skills (HOTS)	
Remembering	Recognizing Recalling	Analysing	Differentiating Organizing Attributing
Understanding	Interpreting Exemplifying Summarizing Inferring Comparing Explaining	Evaluating	Checking Critiquing
Applying	Executing Implementing	Creating	Generating Planning Producing

Table 1: Cognitive Processes (Adapted from Anderson and Krathwhol, 2001)



**Communication:** this C is a real challenge for CLIL teachers as language in the classroom is not the goal but the medium. In second language subjects ‘communication’ is usually based on practising grammar and structures rather than meaning-making. According to Coyle *et al.* (2010), teachers need to make explicit the interrelationship between content and language. To show those connections, the authors divided language in CLIL into language *of* learning (language related to subject matter), language *for* learning (language required for interaction and to effectively operate in the learning environment) and language *through* learning (the new language learners generate while learning) and created the Language Triptych (as shown in Figure 3).

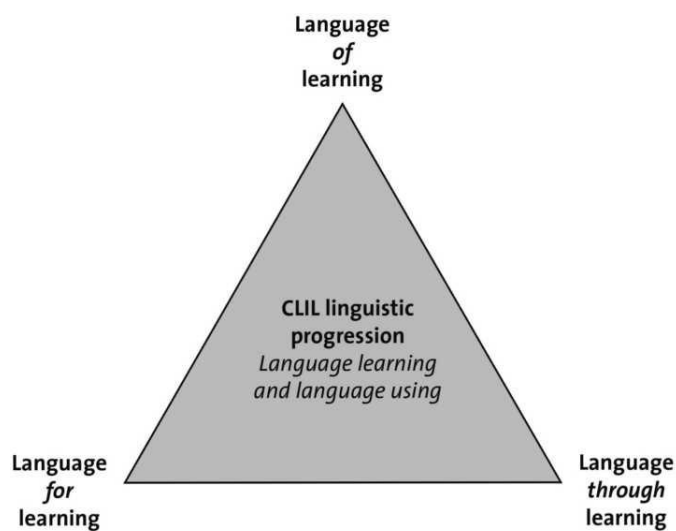


Figure 3. Language Triptych (Coyle *et al.*, 2010)

**Culture:** the inclusion of the ‘culture’ concept was one of the major innovations of CLIL as an educational approach. Although defining culture is still open to debate, it is obvious that culture determines the way we interpret the world. And here it is where CLIL can offer a window to an intercultural world. Inside a classroom, the intercultural understanding refers to peers, teachers and resources related to the language studied. Outside the classroom, involves using skills to mediate between one’s own and other cultures (Coyle *et al.*, 2010). Nonetheless, students need to be involved in interactive learning to acquire the ‘cultural impact’. Culture is not only about food, festivals and holidays, there is a wide range of possibilities for cultural exchange.

## 2.3. CLIL IN PRACTICE

After describing the core principles of CLIL, the big challenge is putting the theoretical issues in practice. As an approach, CLIL offers a basic philosophy about the content taught. Hofler (2010) defines 'approach' as "the set of assumptions or point of view held by individuals concerned with their field." Ball *et al.* (2016) go beyond and refer to CLIL as a term that embraces many different practices and so

when you talk to somebody about CLIL, it is advisable to establish what you both mean by the term in order to avoid talking at cross-purposes.

(Ball et al, 2016)

Being such flexible and adaptable, CLIL allows teachers to adapt their subject methodologies and accommodate what they use and know to their new role. This diversification opens a wide range of possibilities in different aspects of the teaching practice, some of them briefly explained in the following sections.

### 2.3.1. Teacher's discourse

The concept of "teacher's discourse" (or "classroom discourse" for some authors) could cause rivers of ink to flow and, in fact, it did and it does. A 'discourse' is a world with multiple details to be observed and in each detail, a new aspect can be measured, categorized or individualized. The diversification of levels of acts, meanings or intentions can overwhelm even to the most dedicated researchers. Dalton-Puffer (2007) put the spotlight on the challenge of getting an 'outside view' of classroom discourse making it principled, explicit and able to show significant patterns and regularities.

In CLIL, in order to have students actively engaged with meaningful knowledge and authentic interaction, the teacher's multimodal discourse is the key element that can help in the development of the desired educational objectives. Falkenhagen and Spath (2022), consider the teachers' discourse a crucial skill and point out that, in CLIL, is rarely seen as a professional teaching skill. The diversity of factors involved in this skill and the lack of empirical research about this specific issue may be some of the reasons not to include the teachers' communication competence as a topic to be trained and developed.

However, some authors have tried to unravel the threads of the features of the classroom discourse. Talking in a very general way, Christie (2002) cites Bernstein (1990) to define the pedagogic discourse as the rule which includes a discourse of competence into a discourse of social order that dominates that first one. And then divides it in *instructional* discourse (when transmitting specialised competences and their relation to each other) and *regulative* discourse (when creating specialised order, relation and identity). The former can be better understood if we associate it to the transmission of knowledge and skills regarding the subject; the latter is related to the maintenance of the social order inside the classroom.

Inside the instructional discourse, the most used sentences are usually interrogatives in order to get attention, collecting information and confirming the acquisition of knowledge.

Dalton-Puffer defines the role of a question as:

The major function of a classroom question is undeniably as structuring devices to drive the talk forward, introduce new topics and generally direct the focus of the interactants.

(Dalton-Puffer, 2007)

This author categorises questions in three typologies:

Based on the status of the information being sought (whether the answer is known to the questioner or not)		
Display questions <small>(To structure content-oriented classroom talk)</small>	Referential questions <small>(To get extended students' response)</small>	
Based on the scope which the questioner gives the respondent for her/his answer		
Open questions <small>(Leave the respondent more space to answer)</small>	Close questions <small>(Limited to a simple, one-word answer)</small>	
Based on what kind of information is sought		
Questions for facts	Questions for explanations	
Questions for reasons	Questions for opinions	Meta-cognitive questions

*Table 2: Typologies of classroom questions (Adapted from Dalton-Puffer, 2007)*

Questions can also be used by teachers in the context of content-based instruction to give feedback and promote communication. Echevarría and Graves (1998) designed and classified three types of questioning techniques in order to help students in the understanding of

concepts that they would not be able to express by their own: a) Promotion of more complex language and expressions; b) Elicitation of bases for statements or positions; and c) Fewer known-answer questions.

Sometimes, depending on the difficulty of the question or the topic, the feedback provided must be corrective as students do not know that they are wrong if the error is not made visible. The way teachers make it obvious and how they want to direct the next answers/reactions of their pupils lead Lyster and Ranta (1997) to identify the following types of corrective feedback: explicit correction, recasts, elicitation, metalinguistic clues, clarification requests and repetition.

### 2.3.2. Materials and resources

Unlike CLIL, foreign language teaching usually relies on textbooks and plenty of activities and tasks designed for almost every educational goal and assessment criteria. However, as Coyle *et al.* (2010) point out, CLIL teachers complain about a shortage of ready-made resources and, consequently, they need to find or create learning materials. Among other things, a teacher looking for material has the responsibility to select the type of material, if that material/task can be combined with others, and the moment to use it during the development of the unit. Undoubtedly, the time invested in finding the best materials worth it. Ball *et al.* (2016) state that materials are permanent references and the success of a project depends on ensuring that those materials exemplify the methodological principles that the teachers should follow and implement in the classroom.

But before starting a true search of adequate materials for a CLIL classroom, we should define the idea of 'didactic material'. Almost every teacher asked will have an opinion on this issue, based on their own experience and the nature of the subject they teach. Academics have the same problem too. Harmer (2007), defines didactic materials as "a variety of teaching aids to explain language meaning and construction, engage students in a topic, or as the basis of a whole activity". However, the concept is focused on the teaching of language subjects and the scope should be more open. Maybe Ogalde and Bardavid (2003) embrace a more generic idea and express that are "all those means and resources to facilitate the teaching-learning process within a global and systematic educational context, and stimulate the senses to facilitate the acquisition of concepts, abilities and skills, as well as the formation of attitudes and values."

It is important to mention that there is a subtle but unavoidable difference between ‘materials’ and ‘resources’. Moya (2010) explains that didactic resources are “pedagogical supports that reinforce teaching performance, optimizing the teaching-learning process.” Here we can include materials, didactic mediums, physical supports, activities, etc. In other words, the didactic materials can be considered didactic resources but not all the didactic resources are didactic materials.

<b>PRINTED TEXTS</b>	Text books	<b>ICT</b>	Educative software
	Reading books		Internet connection
	School library books		Interactive TV and/or videos
	Notebook		Webs
	Printed material (photocopies)		Blogs
	Press, magazines, etc.		Email
<b>AUDIOVISUAL MATERIALS</b>	Visual presentations	<b>DIDACTIC BOARDS</b>	Chat
	Infographics		Traditional blackboard
	Short videos	Digital blackboard	
	Films		
	Audios		

*Table 3: Classification of didactic resources (Adapted from Moya, 2010)*

However, even when a suitable material is found, it must be revised to ensure that the focus is on both content and language, and not only language or content. Content is related to the curricula, according to the educational level, subject and topic. Language must be analysed bearing in mind the Language Triptych (for, of, through) and the level of performance of the class. In some cases the teacher will need to modify sections of the text or task description if they are too advanced for learners or even create a new text using the one found as a basis.

Regarding adaptation, Moore and Lorenzo (2007) lead a descriptive study into text adaptation for the CLIL classroom. The results offered different strategies employed by different teachers that the authors unified in three categories:

- **Simplification:** the linguistic complexity is sacrificed in favour of factual content. The text is shorter but can have a lack of coherence if some sentences are just deleted.
- **Elaboration:** the cognitive complexity is mainly lost as the reader is guided by the text. The text can provide rich L2 input, but tend to be highly redundant and longer than the original.
- **Discoursification:** there is a deeper approach to text adaptation as it simplifies the text, adapting it to the students, but transforming the genre of the original text to another one easier to read.

### 2.3.3. Assessment methods

Assessment is always a controversial issue among CLIL and non-CLIL teachers. What, when, who, how, why... These and other questions arise when trying to plan the syllabus for any subject. Even trying to be fair, students and families do not always agree with the tools, they are usually more concerned about the marks obtained. Although new methodologies and legislation tend to be more focused on skills and knowledge rather than numbers and grades, the harsh reality is that the better the grade, the better the student.

Leaving aside the preferences and empty discussions, assessment is one of the major aspects in CLIL that must be considered carefully. For decades, the only tool to assess students used to be a test at the end of the unit and a review of the homework. Nowadays the idea has evolved and follows new paths. According to Mahoney (2017) the term 'assessment' embraces "the use of information from various sources to make decisions about a student's future instruction/schooling." This definition points out that assessment is a process, not a specific moment at the end of the term to decide a mark. Actually it is part of the teachers' routines in the classroom, when collecting information to plan or make decisions about lesson planning or any aspect of the students' development of their learning process.

Overall, the two general types of assessment considered are summative and formative. According to Ball *et al.* (2016) the former is focused on assessing what the learners have achieved at a specific point in time. The latter is more diagnostic and usually takes place

during a course. Neither of them can be considered better than the other, as they have different purposes. But it is obvious that both are necessary to get a final mark through a deep meditation of the weight of each type depending on the target we want to get.

But assessment should involve both teachers and students. Taking this into account, Gottlieb (2016) developed a model with five forms of assessment that create a continuum across the idea of assessment *as, for* and *of* (see Figure 4).

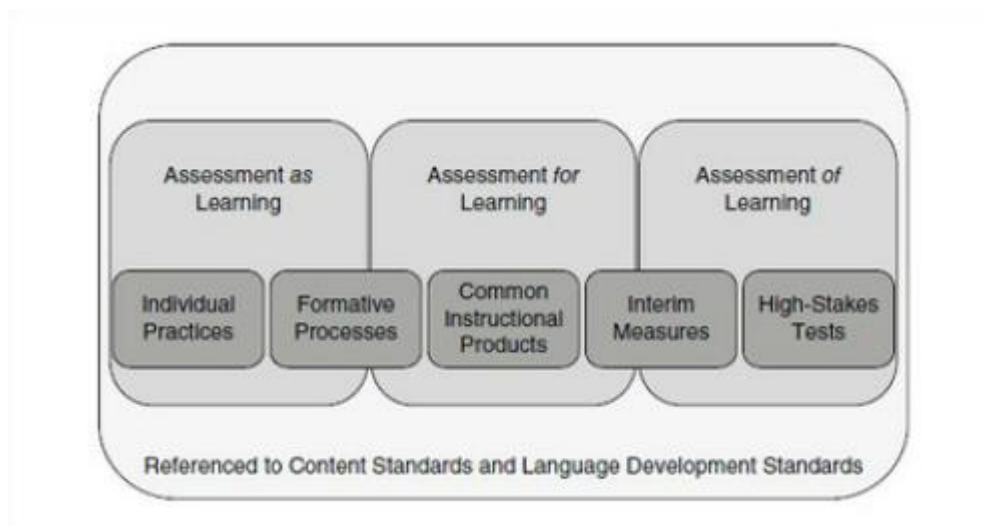


Figure 4: Gottlieb's model of assessment of, for and as learning (2016)

Briefly speaking, assessment *as* learning involves how students are responsible for their own learning working hand in hand with teachers use assessment to generate feedback. In assessment *for* learning, teachers are facilitators within the teaching process. With the help of the feedback provided by the formative processes, students develop projects designed by groups of teachers with tasks integrated into units of instruction. The interim measures are connected with assessment *of* learning and are external tests administered two or three times a year in order to prepare students for the annual high-stakes tests.

Describing all the possible assessment methods could be an impossible task. Even grouping them depends on the criteria followed to discriminate them all. One of the most used categorizations was defined by Mahoney (2017) because of its simplicity and usefulness:

- **Selected response tasks:** in these activities, the response is already given and the student has to choose the correct one (e. g. multiple choice quizzes, true/false exercises, matching, etc.).

- **Written response tasks:** with these activities, students are required to produce more complex language, at a word, sentence or essay level (e. g. essay with rubrics, written short responses, etc.).
- **Performance assessment tasks:** the students need to perform the whole task or action (e. g. oral presentations, role-plays, discussions, etc.).
- **One-to-one communication:** this kind of communication occurs when one person speaks with or writes to another individual (e. g. interview, questioning, etc.).

In all these types of assessment, or any other used, the teacher is usually the one assessing the students. However, to develop students' awareness of their own learning process and reflecting about it, there are other strategies called *peer* and *self-assessment* that have proved to be very useful. William and Leahy (2015) point out that the essence of peer and self-assessment is "that students might be able to assess each other formatively—that is, assessing each other's work not to judge it but to improve it."

To conclude, it is necessary to highlight that one of the difficulties in CLIL assessment lies on how to determine the level of content-language integration as, as Coyle *et al.* (2010) express, the way teachers assess determines the shape of the performance data.

The starting point usually centres on three basic issues: Do we assess content, or language, or both? Which is more important? How do we do this?

Coyle *et al.* (2010)



### 3. Experimental framework

After setting the theoretical bases of the present research, this section describes the tools used for the data collection and the methodology followed. Prior to the development of that information, a brief description of the centre and the research participants will be given in order to contextualize all the stakeholders involved in it.

#### 3.1. CONTEXT AND RESEARCH PARTICIPANTS

IES Inventor Cosme García is placed in the southern district of Logroño, a small town with over 150,000 inhabitants. Logroño is the capital of La Rioja, an autonomous community in northern Spain, well known for the exquisite gastronomy and wines.

The neighbourhood was reformed decades ago, making it one of the newer and directly connected to the city centre and main entrances. The socio-economic characteristics of the area can be considered middle or middle-high class, with most families with parents born in the 1970s and teenage children (Ayuntamiento de Logroño, 2022).

IES Inventor Cosme García is one of 8 public centers located in Logroño. Its location in the southern district and fairly close to the city limits means a privileged space situation with enough families to fill every seat on each course. The level of education offered ranges from Secondary to Baccaureate and Vocational Training. Students can choose between Science and Social Baccaureate, and Vocational Training has many different options to choose from: Administrative Management, Machining Processes, Electrical Installations, Mechatronics, Automation and Industrial Robotics, and more.

The content subjects in which CLIL is being developed in the IES are Mathematics, Visual Education, Ethics and Biology and geology in 1<sup>st</sup> ESO and Music, Ethics and Physics and Chemistry in 2<sup>nd</sup> ESO. The teachers involved in the Bilingual Programme are, in consequence, a Mathematics teacher, a Visual Education teacher, two Sciences teacher, a Philosophy teacher and the only Music teacher in the centre. All of them are coordinated by a Bilingual Coordinator from the English Department and have the support in some of their classes of the Language Assistant.

The Bilingual Programme started three years ago with the idea of developing it starting from initial courses and advancing with those students in following years while offering the

program again to new students in 1<sup>st</sup> ESO. Sadly, the pandemic frustrated part of the initial plans and the requirements demanded to teachers as to obtain the bilingual certificate and the continuous replacement of temporary teachers has slowed down the expansion of the number of CLIL subjects.

### 3.2. METHODOLOGY

As an experimental framework, the present research has been designed from a scientific point of view. In consequence, the methodology followed is inspired in the scientific method. The scientific method follows some consecutive steps based on observation, experimentation, measurement, data collection and analysis of the initial hypothesis with the data collected. However, applying it to educational research requires certain flexibility to redefine certain elements during the design of the tools of analysis and/or the study of the results and further discussion (Díaz Barriga and Luna Miranda, 2014).

These authors propose a new diagram where the main issue is the object of study (see Figure 5).

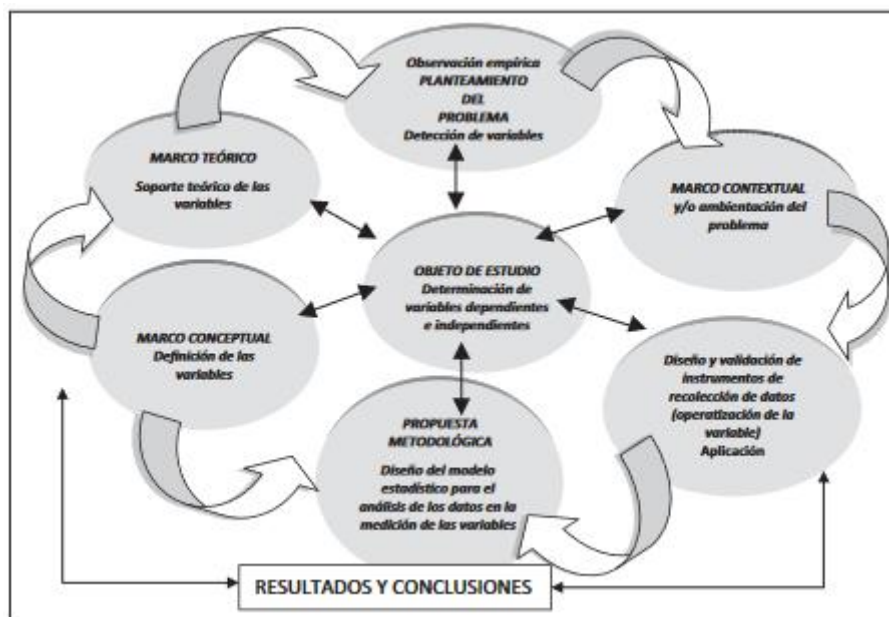


Figure 5. Feedback diagram of the design of an investigation to define the object of study (Díaz Barriga and Luna Miranda, 2014).

The first step to start after determining the **main objective of the study** (see 1.3. Objectives of the study) was deciding what to analyse and observe if there were (or not) any divergence between Sciences and Arts in CLIL. There is a wide range of studies developing different

aspects of this approach, related to assessment (Barbero, 2012; Lofft Basse, 2016); implementation (Cano, 2014; San Isidro & Lasagabaster, 2019); strategies (Meyer, 2010; Sierra, 2016) and so on.

The aspects observed should be: measurable in a scale, independent variables and open to be chosen depending on the content subject. Some of the questions proposed by Díaz Barriga and Luna Miranda (2014) to discriminate possible options helped in the decision-making process. After discarding other options, the **final selection** involved the teacher's discourse in the classroom, the materials used and the types of assessment. And according to the diagram described in Figure 5, the second step was related to the theoretical framework to support those variables. Revisiting previous publications related to the goals of the research and moving forward in the design of the investigation, it became obvious that an empiric and **direct observation** in the classroom should be carried out to delve into the daily practice, as Coyle *et al.* (2010) argued when defining the Lesson Observation and Critical Incident Technique (LOCIT) process.

Moving on to the next phase, the crafting process and **creation of the tools** to collect the data for the research will be developed in section 3.3. Analysis tools. With all the surveys and checklists printed and ready to be filled in, a **meeting with all the teachers involved** in the research was asked via the Bilingual Coordinator. During the session, they all were informed about the purpose of the research and the objectives to be analysed. Afterwards, all the surveys were distributed and every point was explained to avoid misunderstandings or subjective appreciations. The technical terms were clarified and illustrated as not all the participants are experts in educational research. Finally, all of them agreed on a day to proceed with the in-class observation and later feedback about the results obtained.

### 3.3. ANALYSIS TOOLS

As explained above, the crafting of the tools used for the present research was considered after defining the theoretical framework of the variables that would be observed.

Díaz Barriga and Luna Miranda (2014), state that the type of variable determines which level of measurement is more appropriate: nominal or ordinal. In order to compare the use of aspects of discourse, assessment methods and different resources, a yes/no checklist could be too restrictive as even a "yes" mark would offer an incomplete information about the

regular use of each variable. In consequence, the level of measurement would be considered as ordinal and the data collection tool used, a survey.

The survey was considered the best option as is “relatively affordable, includes the same questions for all the participants and can ensure anonymity” (McMillan *et al.*, 2005, p. 237).

They propose a design of consecutive phases in the development of a survey:

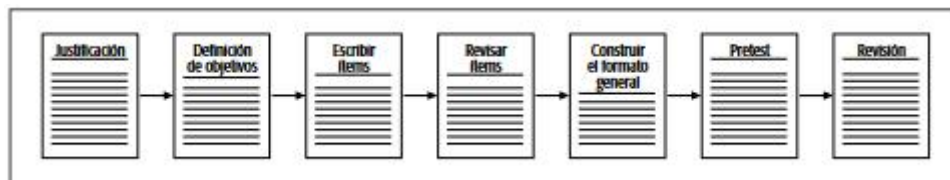


Figure 6. Steps in the development of a survey (McMillan *et al.*, 2005)

The items defined are aligned with the objectives of the research and drafted in a close format, where the participants have to choose among predefined answers. The assumption of this format avoided a wide diversity of different results and facilitated the completion of the surveys themselves. The format also helped the data handling and further analysis.

The type of answers are a rating scale as are mostly used in the evaluation of opinions. And the most common is the Likert scale. This scale “result when survey participants are asked to rank their agreement with survey items on a scale that includes *strongly disagree, disagree, neither agree nor disagree, agree* and *strongly agree.*” (Robbins and Heiberger, 2011) The scale was changed to more appropriate values according to the objective of the research: *very rarely, rarely, sometimes, quite often* and *very often*. This options allowed the participants to evaluate the frequency of use of every item described.

As for the item selection, the surveys were divided in three different tables linked to the objectives of the study: teacher’s discourse, materials and resources and assessment methods.

In the **teacher’s discourse** in the classroom, the selection of the topics to be observed was a fundamental aspect to be considered. The classroom register classification by Christie (2002) was a good starting point followed by the types of questions defined by Dalton-Puffer (2007) depending on the goal they purpose and the length of the answer. It was also included too the types of questioning techniques described by Echevarría and Graves (1998).

To include the Communication component of CLIL and the appearance of continuous corrections in the foreign language, the survey included the types of corrective feedback from Lyster and Ranta (1997) and the types of repairable errors from Danton-Puffer (2007).

Other items included were the use of translanguaging and code-switching during the sessions and some non-verbal features of the discourse, particularly the hand gestures using the classification of McNeill (1992). The final design is available on Annexe A.

Regarding **materials and resources**, it was impossible to find a unified system of classification. However, one of the most used is the one defined by Moya (2010) who organised the different didactic resources that can be used in any classroom (see Table 3). And as some of those resources are didactic materials that could (or need to) be adapted, it was included the strategies defined by Moore and Lorenzo (2007) for CLIL texts that are extensible to other kind of materials.

To complete all the possibilities, it was also included the possible use of social media, content sharing spaces and game-based learning. Gamification was excluded as it is a methodology still in a process of development and rarely used in Secondary education. The design of this survey is available on Annexe B.

Deciding which **assessment methods** should be included seemed a huge task as there are as many possibilities as teachers in any centre. Mahoney (2017) described four big categories for assessment methods that were included with some examples and space to include others if necessary.

Gottlieb (2016) highlighted the importance of the portfolio to collect evidence of the students' performance, so it was included too in a different section. And finally, the self-assessment and peer assessment, the two strategies pointed out by William and Leahy (2015), have their own subsection to reinforce their importance in CLIL. This survey is available on Annexe C.

Finally, with the aim of designing a **classroom observation checklist**, Mehisto *et al.* (2008, p. 232) offered a "planning and observation checklist for professional dialogue between CLIL educators" which covers almost all the aspects to be observed and discussed in a CLIL classroom. However, the use of this table required a thorough and detailed review of the session, recorded if possible. In consequence, it was found more adequate the classroom

observation checklist developed by Washburn (2015) which was adapted to meet the needs of the current research and is available on Annexe D.

### 3.4. DATA COLLECTION

The results of the questionnaires and direct observation of the teachers in the bilingual programme in the IES Inventor Cosme García have been included in a spreadsheet in order to facilitate the management of all data and working with them.

#### 3.4.1. Direct observation

1=Not observed

2=Could improve

3=Acceptable

4=Excellent

		MUSIC	VISUAL EDUCATION	ETHICS 2º ESO	ETHICS 1º ESO	ARTS	BIOLOGY AND GEOLOGY	MATHS	PHYSICS AND CHEMISTRY	SCIENCES
LESSON	1	3	4	3	3	3.25	2	4	4	3.33
	2	2	4	3	3	3.00	4	4	3	3.67
	3	2	4	3	3	3.00	3	4	3	3.33
	4	3	4	4	4	3.75	2	4	4	3.33
	5	3	2	4	4	3.25	3	4	4	3.67
	6	1	4	3	3	2.75	2	4	3	3.00
	7	3	4	4	3	3.50	2	4	3	3.00
	8	1	4	3	2	2.50	1	4	4	3.00
	9	4	4	3	3	3.50	3	4	4	3.67
	10	4	4	3	3	3.50	4	4	4	4.00
	11	4	4	3	3	3.50	3	4	4	3.67
	12	4	2	4	4	3.50	4	4	4	4.00
	13	4	4	2	2	3.00	1	4	2	2.33
	14	3	3	3	2	2.75	3	4	4	3.67
	15	2	4	4	2	3.00	1	4	3	2.67
ENVIRONMENT	16	4	4	4	4	4.00	4	4	4	4.00
	17	3	4	4	4	3.75	3	4	4	3.67
	18	4	4	4	4	4.00	4	4	4	4.00
	19	4	4	4	4	4.00	3	4	3	3.33
	20	4	4	4	4	4.00	4	4	4	4.00
	21	3	4	4	3	3.50	3	4	4	3.67
	22	2	1	4	4	2.75	3	4	3	3.33
23	2	4	3	3	3.00	4	4	4	4.00	

	24	2	4	4	3	3.25	4	4	3	3.67
	25	4	4	4	3	3.75	4	4	3	3.67
	26	4	4	4	4	4.00	4	4	4	4.00
	27	4	4	4	4	4.00	3	4	4	3.67
	28	4	4	4	4	4.00	3	4	4	3.67

MEDIA	29	4	4	4	4	4.00	4	4	4	4.00
	30	4	4	4	4	4.00	3	4	3	3.33
	31	4	4	4	3	3.75	4	4	4	4.00
	32	4	4	3	4	3.75	2	4	4	3.33
	33	4	4	3	4	3.75	1	4	4	3.00

### 3.4.2. Teacher's discourse

NA: Not applicable 1: Very rarely 2: Rarely 3: Sometimes 4: Quite often 5: Very often

	MUSIC	VISUAL EDUCATION	ETHICS 2º ESO	ETHICS 1º ESO	ARTS	BIOLOGY AND GEOLOGY	MATHS	PHYSICS AND CHEMISTRY	SCIENCES
<b>TYPES OF QUESTIONS</b>									
Display questions	0	5	3	3	2.75	4	4	4	4.00
Referential questions	0	5	4	4	3.25	4	4	2	3.33
Open questions	2	5	3	3	3.25	4	4	5	4.33
Close questions	2	5	4	4	3.75	3	5	5	4.33
<b>QUESTIONS BY GOAL PURSUED</b>									
Facts	0	0	3	3	1.5	4	5	4	4.33
Explanations	3	5	3	3	3.5	5	5	4	4.67
Reasons	0	5	2	2	2.25	2	5	5	4.00
Opinions	2	5	4	4	3.75	1	4	2	2.33
Meta-cognitive (why)	2	5	2	2	2.75	2	5	5	4.00
<b>CLASSROOM REGISTER</b>									
Regulative register	5	5	2	2	3.5	3	5	4	4.00
Instructional register	5	5	3	3	4	5	5	4	4.67
<b>TYPES OF QUESTIONING TECHNIQUES</b>									
Promotion of more complex language and expression	0	5	3	3	2.75	3	5	4	4.00
Elicitation of bases for statments or positions	2	0	3	3	2	4	5	2	3.67

Fewer known-answer questions	0	0	3	3	1.5	2	4	3	3.00
<b>TYPES OF CORRECTIVE FEEDBACKS</b>									
Explicit correction	2	4	4	4	3.5	3	5	5	4.33
Recasts	3	4	4	4	3.75	2	4	2	2.67
Elicitation	3	0	3	3	2.25	1	5	4	3.33
Metalinguistic clues	0	0	2	2	1	2	5	5	4.00
Clarification requests	3	5	3	3	3.5	4	5	5	4.67
Repetition	2	5	3	3	3.25	2	5	4	3.67
<b>TYPES OF REPAIRABLE ERRORS</b>									
Grammar	3	4	2	2	2.75	2	5	0	2.33
Vocabulary	4	4	2	2	3	4	5	0	3.00
Pronunciation	2	5	3	3	3.25	3	5	3	3.67
Discourse	4	0	3	3	2.5	2	5	2	3.00
Factual / content	2	0	2	2	1.5	4	5	5	4.67
Channel	0	0	3	3	1.5	3	5	1	3.00
Processing	0	0	2	2	1	3	5	3	3.67
<b>HAND GESTURES</b>									
Beats	4	4	2	2	3	2	5	2	3.00
Deictic	2	4	3	3	3	4	5	2	3.67
Iconic	0	2	3	3	2	1	5	5	3.67
Metaphoric	4	2	2	2	2.5	2	5	4	3.67
<b>TRANSLANGUAGING</b>	4	5	3	3	3.75	4	5	5	4.67
<b>CODE-SWITCHING</b>	3	5	3	3	3.5	1	4	4	3.00

### 3.4.3. Materials and resources

NA: Not applicable 1: Very rarely 2: Rarely 3: Sometimes 4: Quite often 5: Very often

	MUSIC	VISUAL EDUCATION	ETHICS 2º ESO	ETHICS 1º ESO	ARTS	BIOLOGY AND GEOLOGY	MATHS	PHYSICS AND CHEMISTRY	SCIENCES
<b>TEACHING RESOURCES</b>									
<b>PRINTED TEXTS</b>									
Text books	0	0	3	3	1.5	3	5	5	4.33
Reading books	0	0	2	2	1	0	4	2	2.00



School library books	0	0	1	1	0.5	0	4	1	1.67
Notebook	0	0	3	3	1.5	4	5	5	4.67
Printed materials (photocopies)	2	3	4	4	3.25	3	5	5	4.33
Press. magazines. etc.	0	2	1	1	1	1	5	3	3.00
Other:									
<b>Workbook</b>		<b>5</b>							
<b>AUDIOVISUAL MATERIALS</b>									
Visual presentation	2	3	4	4	3.25	5	5	5	5.00
Infographics	0	3	4	4	2.75	1	4	4	3.00
Short videos	4	3	3	3	3.5	3	4	4	3.67
Films	0	0	3	3	1.5	0	4	1	1.67
Audios	4	0	2	2	2	0	3	2	1.67
Other:									
<b>Specific images</b>		<b>5</b>							
<b>DIDACTIC BOARDS</b>									
Traditional blackboard	0	5	4	4	3.25	3	5	5	4.33
Digital whiteboard	0	0	1	1	0.5	0	0	0	0.00
Other:									
<b>ICT</b>									
Educative software	3	0	2	2	1.75	1	5	5	3.67
Internet connection	5	5	4	4	4.5	5	5	5	5.00
Interactive TV and/or videos	0	4	2	2	2	0	5	1	2.00
Webs	4	2	3	3	3	2	5	5	4.00
Blogs	4	1	2	2	2.25	0	4	1	1.67
Email	0	2	3	3	2	3	5	5	4.33
Chat	3	5	3	3	3.5	4	5	5	4.67
Other:									

<b>TYPES OF ADAPTATION</b>									
Simplification	0	4	3	3	2.5	4	3	5	4.00
Elaboration	0	0	3	3	1.5	2	3	4	3.00
Discoursification	0	0	3	3	1.5	1	3	0	1.33
<b>SOCIAL MEDIA</b>									
Facebook	0	0	1	1	0.5	0	0	0	0.00
Twitter	0	0	1	1	0.5	0	0	0	0.00
WordPress / Blogger	0	0	1	1	0.5	0	4	0	1.33
Instagram	0	0	1	1	0.5	0	0	0	0.00
Pinterest	0	0	1	1	0.5	0	0	0	0.00
Other:									
<b>CONTENT SHARING</b>									
Dropbox	0	0	0	0	0	0	0	0	0

Google Drive	0	0	0	0	0	0	0	0	0
Other:									
<b>One Note</b>	<b>5</b>								
<b>Teams</b>		<b>5</b>	<b>5</b>	<b>5</b>		<b>5</b>			
<b>One Drive</b>								<b>5</b>	
<b>Microsoft 365</b>							<b>5</b>		
<b>GAME-BASED LEARNING</b>	0	0	0	0	0	3	0	3	2

### 3.4.4. Assessment methods

NA: Not applicable 1: Very rarely 2: Rarely 3: Sometimes 4: Quite often 5: Very often

	MUSIC	VISUAL EDUCATION	ETHICS 2º ESO	ETHICS 1º ESO	ARTS	BIOLOGY AND GEOLOGY	MATHS	PHYSICS AND CHEMISTRY	SCIENCES
<b>SELECTED RESPONSE TASKS</b>									
Multiple choice quizzes	0	0	2	2	1	1	3	3	2.33
True/false exercises	0	0	3	3	1.5	1	4	5	3.33
Types of labelling	0	0	2	2	1	4	3	2	3.00
Matching	0	0	2	2	1	3	4	2	3.00
Gap-filling activities	0	0	2	2	1	1	4	3	2.67
Others:									
<b>WRITTEN RESPONSE TASKS</b>									
Essays	0	0	4	4	2	2	2	3	2.33
Written short responses	0	0	4	4	2	5	4	5	4.67
Written long responses	0	0	4	4	2	2	2	2	2.00
Others:									
<b>Problems</b>								<b>5</b>	
<b>PERFORMANCE ASSESSMENT TASKS</b>									
Oral presentations	0	5	3	3	2.75	1	4	4	3.00
Role-plays	0	3	2	2	1.75	0	2	2	1.33
Discussions	0	3	3	3	2.25	1	4	3	2.67
Observation with checklist	4	0	3	3	2.5	1	5	2	2.67
Anecdotal records	4	5	2	2	3.25	3	4	4	3.67
Think aloud	0	5	3	3	2.75	5	5	2	4.00
Others:									
<b>ONE-TO-ONE COMMUNICATION</b>									
Discussion	0	2	3	3	2	3	5	4	4.00

Interview	0	0	2	2	<b>1</b>	1	4	2	<b>2.33</b>
Questioning	0	4	2	2	<b>2</b>	1	5	5	<b>3.67</b>
Others:									
<b>Chat</b>		<b>5</b>							
<b>Problems in pairs</b>								<b>4</b>	
<b>PORTFOLIO</b>									
Paper-based	0	5	4	4	<b>3.25</b>	0	5	1	<b>2.00</b>
E-portfolio	2	5	0	0	<b>1.75</b>	0	4	3	<b>2.33</b>
<b>PEER-ASSESSMENT</b>	0	3	3	3	<b>2.25</b>	1	3	2	<b>2.00</b>
<b>SELF-ASSESSMENT</b>	0	4	3	3	<b>2.5</b>	3	4	4	<b>3.67</b>

## 4. Results and Discussion

### 4.1. DIRECT OBSERVATION

As can be seen in the results table of section 3.4.1, the direct observation data are quite similar in general terms. There are no significant differences in any of the items observed although there are some aspects to be considered.

Revisiting all the items, the first one with a difference of almost a point is **14. Provides a clear explanation of assignments**. The scientific subjects achieve a score of more than 3 (“Acceptable”) while Arts only 2.75 (“Could improve”). Asked the teachers about this issue, Science teachers explained that they needed to be crystal clear about assignments in order to avoid misunderstandings and mistakes when solving problems. On the other hand, Arts teachers almost reach a 3 in the scale, which means an “Acceptable” level, although they stated that their assignments are not too teacher-lead, as they prefer their students to develop their creativity giving some general ideas about what is to be done.

The second and last one with a difference of one point is **23. Easily heard**. Both Sciences and Arts get 3 points or more, but Arts teachers, especially Music teacher, blamed the acoustics of the classroom for the results.

Another aspect to be examined is the different items that do not reach an “Acceptable” level regardless of the group of subjects. At a lesson level, Arts only get a 2.75 in item **6. Checks understanding through targeted questions or activities** mainly due to the Music score, whose teacher argued a lack of necessity of targeted questions as he assesses the understanding of his subject through the use of musical instruments and other practical activities. Again, in item **8. Defines new terms before using them**, Arts is under level 3, with a 2.5. Music and Ethic teachers, as observed, preferred to ask the students to define new terms, especially if they were linked with prior knowledge. In item **13. Limits key ideas or concepts to fewer than seven**, Sciences obtain just 2.33 out of 4. Biology and Chemistry teachers asked about the score, they acknowledged that there are sessions in which the key ideas are more than seven and cannot be limited because of the lesson planning or the topic itself. The item **14. Provides a clear explanation of assignments** has been described above, but in **15. Provides a summary of key points or ideas that includes a transition to the next lesson**, Sciences again fall under 3 points, to 2.67. The Biology teacher, scoring a 1 (“Not

observed”), explained that due to a lack of time, he usually decides not to summarise the key ideas at the end of a session as he prefers to recall them at the beginning of the next one.

In the “Environment” section, the only item with less than 3 points is **22. Prompts all students equally for responses to questions**. Arts gets 2.75 points and Music and Visual education teachers explained that when asking in the classroom, they prefer the students to raise their hands and select one of them to answer. Although it reduces equity, avoids shy students to be forced to a public exposure.

The “Delivery” and “Media” sections are scored very similar, with all the items getting 3 points or more. It is obvious that all the teachers have a great amount of experience in education and can make their lessons to be understood correctly. On the other hand, the use of media has become very widespread in education and is properly reflected on the results offered by the survey.

#### 4.2. TEACHER’S DISCOURSE

In the teacher’s discourse is where more differences can be found and it is understandable as every teacher develops their own rhetoric depending on the subject taught and the personal ideas and features.

In the “Types of questions” section there is a significant difference between Sciences and Arts in the item called **Display questions**, with Science subjects using them “Quite often” (4) and Arts subjects “Rarely” (2.75). This kind of questions are used by Science teachers in order to confirm that students have understood the concepts explained, while in Arts the teachers explained that they use other techniques to corroborate the key ideas, usually with activities and assignments. With the **Open questions** the difference (3.25 Arts and 4.33 Sciences) follows the same ideas, as Sciences teachers use them to allow students to give more complex answers and explanations.

Regarding the section “Questions by goal pursued”, the scores show an evident variation among subjects. In questions about **Facts**, Music and Visual education consider them “Not applicable” as they argued there are not facts or data to be asked about. Due to this reason, Arts subjects get a 1.5 (“Very rarely”). The questions about **Reasons** a “Rarely” (2.25) used in Arts subjects but “Quite often” (4) in Sciences subjects. When asked, Maths and Physics teachers explained that even though the content in their subject is what it is, they usually

ask the students about the reasons of the explanations given in the class, so that it can be used to improve their critical thinking and high-order thinking skills. On the other hand, questions about **Opinions** are much used in Arts subjects (3.75) than in Sciences subjects (2.33). In contrast to the previous type of questions, in Science there is no much space for opinions since, as it was said before, “content in their subject is what it is”. Finally, the **Meta-cognitive** questions score 2.75 (Rarely) in Arts subjects while Sciences subjects use them “Quite often” (scored 4). These teachers argued that regardless the fact or theory explained, it is important to ask *why* it happens or is applied. Doing so, the students need to analyse the content already know, the content just received and create their own knowledge.

The “Classroom register” is quite similar in scores in both groups of subjects, which implies that the time devoted to teaching content and managing the classroom is used almost equally for Sciences and Arts.

Within the “Types of questioning techniques”, Sciences subjects get better scores (from 3 to 4) while Arts subjects almost obtain 3 points (a maximum of 2.75 in **Promotion of more complex language and expression**). The reasons mentioned indicate that Arts teachers use fewer questioning techniques while they expect their students to reflect their knowledge and skills in the products crafted for each lesson (an artistic composition, a musical performance, etc.). On the other hand, Sciences teachers establish a dialogue with their students with the objective of developing their own knowledge while acquiring new content.

The “Types of corrective feedbacks” offers more variability in the scores, which is interesting in a CLIL context. Arts teachers use **Recasts** in general “Quite often” (scoring 3.75) while Sciences teachers just “Rarely” (2.67). The simple answer was that Biology and Chemistry teachers (who self-evaluated themselves with a 2) preferred another type of repair techniques other than this one. On the contrary, Sciences teachers use **Elicitation** and **Metalinguistic clues** (“Sometimes” and “Quite often” respectively) more regularly than Arts teachers (“Rarely” and “Very rarely” in the same order). These argued that in the case of metalinguistic clues, their subjects have too abstract concepts to be corrected with this technique so they used other more direct, such as recasts or explicit corrections. **Clarification requests** get higher scores in both groups of subjects (3.5 - “Sometimes” in Arts; 4.67 - “Quite often” in Sciences). Sciences teachers explained that they use them in addition

to the meta-cognitive questions and when trying to promote more complex language during the students' interventions.

In the "Types of repairable errors" there are tangible differences. The most notable ones are in **Factual/content**, **Channel** and **Processing**, where Arts get a score under 2 in all of them (1.5, 1.5 and 1 respectively). Regarding factual/content errors, Sciences teachers stated that those are quite usual in their subjects and need to be corrected many times even in the same session. With respect to channel errors, both Music and Visual education recalled the acoustic problems of the classroom (see section 4.1. Direct observation) which prevented a correct hearing. For that reason, they could not repair errors related to the volume or the tone. About processing errors, Sciences teachers seem more interested in the correction of the processing errors such as incomplete utterances or construction changes than the Arts teachers, more focused in fluency other than correctness.

The "Hand gestures" only differed in more than one level when referring to **Iconic** and **Metaphoric** gestures. The Arts teachers use them "Rarely" (score 2 and 2.5 respectively) and associated this issue with the metalinguistic clues corrective feedbacks. Again, their subjects, they argued, have so many abstract images and concepts that are almost impossible for them to transform in iconic or metaphoric gestures.

Finally, **Translanguaging** was used differently. Although Arts teachers reported to use this method "Sometimes" (scored 3.75), Sciences teachers declared to use it "Quite often" (scored 4.67). These teachers argued that translanguaging was very useful when explaining difficult assignments or problems, in order for the students to avoid mistakes.

### 4.3. MATERIALS AND RESOURCES

Within the teaching resources, there are different aspects to be considered so the analysis will depend on the group of resources in the light of the outcome obtained in the surveys.

To begin with, "Printed texts" are more commonly used in general in Sciences subjects. **Text books** are used "Quite often" (scored 4.33) in Sciences while only "Very rarely" (1.5) in Arts. The explanation is based on the fact that the former relies more on text books to support the theory and the problems (such as in Mathematics and Physics and Chemistry), while the latter do not use text books in general as the theory is applied in the tasks carried out by the students. **Reading books** and **School library books** seem to be ignored in general, except for

Mathematics. This teacher includes them in the syllabus to improve reading routines (aligned with the Reading Plan of the centre). **Notebooks** are an assessment instrument in Sciences and that is why they are used “Quite often” (scored 4.67) while in Arts notebooks are used “Very rarely” (1.5 points), choosing others that will be analysed in section 4.4. Assessment methods (see below). **Printed materials** are more used in Sciences (“Quite often” - 4.33) too than in Arts (“Sometimes” - 3.25). When asked, Sciences teachers argued that they use them in some topics to extend the missing content of the text books or to deliver activities and exercises. Finally, **Press, magazines and other publications** are used “Very rarely” (scored 1) in Arts while used “Sometimes” (scored 3) in Sciences. These teachers (specially Mathematics and Physics and Chemistry) use scientific news or stories to exemplify or debate the topic taught in the classroom.

Within the “Audiovisual materials”, the most obvious difference can be seen in the **Visual presentations** which are used “Sometimes” (scored 3.25) by the Arts teachers while used “Very often” (scored 5) by the Sciences teachers. Asked about this issue, these teachers argued that they use slide presentations is almost every lesson to show images, graphics or examples of the content visually in order to a get a better understanding of the topic. It is important to highlight the poor use of **Films** and **Audios**, both scored with 2 (“Rarely”) or less in both groups of subjects. The reasons indicated by the teachers pointed to the limitations of time in each session, so the use of the entire film is not possible even in two parts. Regarding audios, none of the teachers showed much interest in them, except for the Music teacher, of course.

The “Didactic boards” section showed that the **Traditional blackboard** is more used by Sciences teachers (“Quite often” - 4.33 points) than Arts teachers (“Sometimes” - 3.25 points). Sciences teachers explained that they use it to solve problems to the whole class or draw graphics or charts related to the topic and that are not included in the presentations previously prepared. The results obtained by **Digital whiteboards** (“Not applicable” in most of the cases) is due to the lack of classrooms with these devices installed. It is a new technology which is growing by leaps and bounds, but not yet extended to all centres and spaces.

The “ICT” resources have diverse opinions as is reflected on the results. The **Educative software** is used “Very rarely” in Arts (scored 1.75) while in Sciences is used “Sometimes”



(scored 3.67), specially in Mathematics and Physics and Chemistry. Arts teachers explained that is difficult to find specific software in their subjects when it is easier in Sciences. **Webs**, in general, are more used in all subjects. Arts got 3 points (“Sometimes”) and Sciences 4 (“Quite often”). The arguments offered by both sides were quite diverse and dependent on the subject itself and the easiness to find specific material about a topic. **Email** is used by Sciences teachers “Quite often” (scored 4.33) while Arts teachers only “Rarely” (scored 2). The reasons argued are that some assignments are sent via email instead of paper, when possible, as most of them are visual presentations or similar tasks. **Chat** as a medium of communication is used “Sometimes” (scored 3.5) in Arts and “Quite often” in Sciences. Again these teachers explained that students ask their doubts and difficulties with the problems and assignments using the chat software provided by the centre to contact the teachers. Although it happens in Arts too, it seems that most of the questions are solved during the class sessions.

**Interactive TV and/or videos** get only 2 points (“Rarely”) in both groups and only two teachers make use of them. As with the digital whiteboard, these technologies are still being incorporated in high schools and have not been installed in all classrooms. **Blogs** is another unused possibility (2.25 in Arts and 1.67 in Sciences), mainly, as teachers explained, because most of the blogs about their subjects are out-of-date or offer wrong information. Actually, they consider blogs as a medium of information facing extinction.

Leaving behind the “Teaching resources” and moving to the “Types of adaptation”, **Simplification** obtained 2.5 points (“Rarely”) in Arts but 4 points (“Quite often”) in Sciences. In Sciences, the teachers explained that it is difficult to find texts at the same linguistic level of the students: some of them are too technical, others too academic, etc. Therefore, when a good material is selected it usually needs a simplification to be more accessible. **Elaboration** has the same difference although less points: Arts 1.5 points and Sciences, 3 points. Arts teachers prefer to find more simple texts not to elaborate them adding explanations or definitions, which would make the text longer and not always easier to understand. On the other hand, **Discoursification** is used “Very rarely” both in Arts (scored 1.5) and Sciences (scored 1.33). The arguments provided by the teachers can be summarised in the idea that discoursification requires a lot of work to change the genre of the text

selected and, instead of that, it is preferable to find a text that meet the educational expectations.

The use of “Social media” is merely anecdotal, with almost all the teachers not using any of them in any lesson. The general impression was that social media is used by students in a more recreational way and could be more a distraction than a resource. In addition, the participants in the surveys recognize their lack of knowledge about the educational use of social media.

Regarding “Content sharing” section brought a wide range of apps and software used to share files with the students or these uploading big files which could not be sent by other means. The diversity observed depends on the preferences of each teacher, although **Teams/Microsoft 365** is the most used as it is considered as an “official resource” within the centre.

Finally, the “Game-based learning” gets 2 points in Sciences (used “Rarely”) while is not used in Arts. The explanation was asked to the whole group of participants and agreed that Sciences subjects are considered by students as boring and more focused on memorization and the inclusion of this methodologies in some moments of the topic surprises and relaxes the class.

#### 4.4. ASSESSMENT METHODS

The differences in assessment methods in CLIL was another of the objectives pursued in the present research and the survey showed the following results.

In the “Selected response tasks”, there is a clear disparity between Arts and Sciences. The former use these methods “Very rarely” in general (only 1.5 points in **True/false exercises** and 1 in each of the rest options) while the latter vary from “Rarely” (2.33 in **Multiple choice quizzes** and 2.67 in **Gap-filling activities**) to “Sometimes” (3.33 in **True/false exercises** and 3 in **Types of labelling** and **Matching**). When asked, Arts teachers argued that this kind of exercises do not match with the necessities of assessment of their subjects, more focused in the development of products instead of evaluating knowledge acquisition.

The “Written response tasks” follow the same pattern. Arts scored them all with 2 points (“Rarely”) and just a teacher uses them. Sciences teachers, on the other hand, use **Written short responses** “Quite often” (scored 4.67) at the expense of **Essays** (scored 2.33) and

**Written long responses** (scored 2). Arts teachers used the same arguments as with selected response tasks, although Ethics teacher actually use these tasks “Quite often” to gather information about specific issues developed during the lessons. Nonetheless, Sciences teachers prefer written short responses in the form of exams at the end of each lesson or term. In fact, this is the most used method among these teachers.

Regarding “Performance assessment tasks” the wide diversity in the uses and preferences indicates that it is related to the subject itself and the educational methodology followed by the teacher. While **Role-plays**, **Discussions** and **Observation** with checklist are not even used “Sometimes” (all of them scored with less than 3 points in both groups of subjects), **Oral presentations** are just a bit more included in Sciences subjects. These teachers explained that they use the presentations to obtain other kind of information that written tests or one-to-one communication cannot provide (public speaking, non-verbal language, etc.). Additionally, those tasks change the class routine, engaging students and capturing their attention. Finally, **Think aloud** is used “Rarely” (scored 2.75) in Arts but “Quite often” (scored 4) in Sciences. The reasons exposed are aligned with the use of questions in the teacher’s discourse (see section 4.2. Teacher’s discourse) as the answers in terms of quality and reflection are used in both formative and summative assessment.

The last category of assessment methods, “One-to-one communication”, is again poorly used in Arts subjects (all methods used “Rarely” or “Very rarely”). Sciences teachers value their use of **Discussion** as “Quite often” (scored 4), **Questioning** as “Sometimes” (scored 3.67) and **Interview** as “Rarely” (scored 2.33). These differences are explained by Arts teachers in terms of methodology, as the particularities of their subjects (specially Music and Visual education) require other assessment methods more focused on the final product crafted. Asked the Sciences teachers about the low score of the interview, they argued that, except for the Mathematics teacher, the great number of students per class prevent the use of this method, as it would be needed at least two or three sessions to have a five minutes interview with every student in the classroom.

Evaluating the use of “Portfolio”, the first thing that comes to our attention is the scores obtained by the **E-portfolio**. The teachers explained that they still prefer the paper-based one as it is possible to take notes on the examples gathered. Actually, **Paper-based** portfolio is used “Sometimes” (scored 3.25) in Arts subjects while only “Rarely” (scored 2) in Sciences.

“Peer-assessment” is only used “Rarely” in both groups of subjects: scored 2.25 in Arts and 2 in Sciences. Asked about this issue, all teachers agreed that students are not trained enough in the correct use of this kind of assessment and tend to give high marks to their friends and punish other classmates. The effort needed to instruct a group of students, the teachers said, is not compensated by the information they obtain.

On the other hand, “Self-assessment” differs in Sciences subjects, in which is used “Sometimes” (scored 3.67) while in Arts only “Rarely” (scored 2.5). The Sciences teachers indicated that one of the main guidelines in their subjects is the development of self-monitoring and critical thinking. They highlighted the importance of explaining in the classroom the difference between self-assessment and self-grading, as the final mark will be provided by the teacher. In addition, self-assessment motivates students to engage with the task assessed more deeply.

## 5. Conclusions

The aim of the present research was not a fixed idea to be confirmed or refuted. It is only an attempt to compare subjects divided in two groups of Arts and Sciences in a CLIL context to observe possible commonalities and differences in specific aspects: the teacher's discourse, materials and resources used in the classroom and the assessment methods. With the results of the surveys and the direct observation, there has been highlighted some interesting issues.

First, and thanks to the direct observation in the classrooms, it is evident that the CLIL programme is totally implemented and assumed by the teachers involved in it. All the items observed in both Arts and Sciences are, on average, considered "Acceptable" and most of them "Excellent". However, we must consider the "Observer's Paradox", described by Labov (1972, p. 209) who stated that "the aim of linguistic research in the community must be to find out how people talk when they are not being systematically observed; yet we can only obtain this data by systematic observation.". In other words, when we observe people, they tend to act as how they are expected to.

Then, the teachers' discourses show significant differences regarding certain aspects. As the surveys' results show, the types of questions depending on the goal pursued are used according to the group of subjects. In Sciences, facts and explanations are necessary to evaluate the acquisition of new content apart from the development of deductive reasoning. On the other hand, in Arts, concepts are more abstract and the teachers are more focused on the language fluency than correction. The students do not need to memorize information but to be able to express ideas, concepts or opinions.

With regards to resources and materials, Sciences teachers use a wider range of them depending on the topic or lesson. The final goal is to avoid master classes and engage the students with the development of their own knowledge and skills. However, there is no use of some type of electronic devices due to the fact that there is a lack of investment from regional administration in order to provide all centres and classes with the same resources (e. g., digital whiteboards). The absence in the use of social media offers new fields to be explored in order to make subjects more authentic and closer to students' reality.

Finally, within the assessment methods, the most significant difference is the use of different methods in Sciences subjects depending on the purpose of the assessment, depending on what the teacher wants to measure. That is the reason why it has been observed a wide range of methods used which vary from subject to subject. On the other hand, Arts subjects in general are more focused on the development of products, so the methods used to assess could seem less diverse. Nevertheless, those methods are more precise and Arts teachers do not have the need to use other as the evidences collected are enough to check the learning outcomes.

To sum up, the main question of this dissertation would be “Are there any differences between Arts and Sciences in CLIL?”. The unequivocal answer is “yes, there are”. In the light of the results of the research, the conclusions obtained are as follows.

To begin with, Sciences in CLIL (regarding the IES Inventor Cosme García) tend to develop students’ knowledge and skills using multiple questions in order to help them to promote deductive thinking. It is reinforced with the use of multiple resources, specially printed texts and ICT, and focusing on language correction and the use of scientific terms.

On the other hand, Arts within the CLIL programme of the Inventor Cosme García move toward the creation of products that can be assessed at the end of a term or the whole course. Students are more engaged in the process itself and less teacher’s questions and resources are needed. This methodology implies the planning of several mini-tasks previous to the final one, following the ideas of TBL. The use of these mini-tasks as resources or assessment methods were not included in the surveys and that is why it could not be scored by the Arts teachers (see section 6. Limitations and further research).

To conclude, since the very beginning of the implementation of the CLIL approach it was proved that is a flexible and adaptable methodology to different subjects and contexts. Due to the extensive possibilities it offers in terms of materials, resources, assessment methods, etc., each subject uses what better fits to its goals. In other words, CLIL is not what makes the difference, but the use of it we make of it as teachers.

CLIL teachers should stay true to their instincts as content teachers in terms of having a guiding methodology which is appropriate for that subject. History teachers, for example, naturally use a range of sources to expose students to the

concepts both of the historical period under study and to the parameters and nature of history as a subject discipline; and science teachers use the experience gained through conducting experiments to raise questions and indicate methods of finding solutions. CLIL teachers must allow the subject to emerge in the same ways as it usually would despite the role of the other language.

(Coyle *et al.*, 2010)

## 6. Limitations and further research

The main limitation of the research is referred to the sample size. Only six teachers are a number not high enough to consider the results obtained as representative, but at least offers a small picture of the big goal pursued. Besides, all the teachers were selected from the same centre, the IES Inventor Cosme García, which means that some methods or resources could have been shared among them overlapping underlying differences.

Additionally, it is important to highlight that the rating system used on the surveys is based on personal points of view, delivering biased results in some cases as the questionnaires were not totally anonymous. Another option that could have been used is the recording of lessons, more than one. However, the technical difficulties and lack of appropriate equipment eliminated that possibility.

Although the present investigation has shown the existent divergences in Arts and Sciences in a CLIL context, a range of possibilities can be open to future research. By expanding the number of participants and centres observed, a bigger picture would be obtained and the comparisons would be more accurate.

Regarding the surveys, instead of or in addition to the rating scale proposed, open questions to allow participants to add their own resources or methods would increase the scope of the study. It would offer new aspects to be considered and shared, so other teachers could harness the results to reflect about their own teaching practice. Moreover, students' opinions could be considered in order to obtain an external point of view of the key stakeholders.



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## Annexes

### Annex A. Teacher's discourse survey

#### **TEACHER'S DISCOURSE**

*NA: Not applicable 1: Very rarely 2: Rarely 3: Sometimes 4: Quite often 5: Very often*

<b>TYPES OF QUESTIONS</b>	NA	1	2	3	4	5
Display questions						
Referential questions						
Open questions						
Close questions						
<b>QUESTIONS BY GOAL PURSUED</b>	NA	1	2	3	4	5
Facts						
Explanations						
Reasons						
Opinions						
Meta-cognitive (why)						
<b>CLASSROOM REGISTER</b>	NA	1	2	3	4	5
Regulative register						
Instructional register						
<b>TYPES OF QUESTIONING TECHNIQUES</b>	NA	1	2	3	4	5
Promotion of more complex language and expression						
Elicitation of bases for statements or positions						
Fewer known-answer questions						
<b>TYPES OF CORRECTIVE FEEDBACKS</b>	NA	1	2	3	4	5
Explicit correction						
Recasts						
Elicitation						
Metalinguistic clues						
Clarification requests						
Repetition						
<b>TYPES OF REPAIRABLE ERRORS</b>	NA	1	2	3	4	5
Grammar						
Vocabulary						
Pronunciation						
Discourse						
Factual / content						
Channel						
Processing						
<b>HAND GESTURES</b>	NA	1	2	3	4	5
Beats						
Deictic						
Iconic						
Metaphoric						
<b>TRANSLANGUAGING</b>	NA	1	2	3	4	5
<b>CODE-SWITCHING</b>	NA	1	2	3	4	5

## Annex B. Materials and resources survey

### **CLASS MATERIALS AND RESOURCES**

NA: Not applicable 1: Very rarely 2: Rarely 3: Sometimes 4: Quite often 5: Very often

<b>TEACHING RESOURCES</b>						
<b>PRINTED TEXTS</b>	NA	1	2	3	4	5
Text books						
Reading books						
School library books						
Notebook						
Printed materials (photocopies)						
Press, magazines, etc.						
Other:						
<b>AUDIOVISUAL MATERIALS</b>	NA	1	2	3	4	5
Visual presentations (PowerPoint, Google slides)						
Infographics						
Short videos						
Films						
Audios						
Other:						
<b>DIDACTIC BOARDS</b>	NA	1	2	3	4	5
Traditional blackboard						
Digital whiteboard						
Other:						
<b>ICT</b>	NA	1	2	3	4	5
Educative software						
Internet connection						
Interactive TV and/or videos						
Webs						
Blogs						
Email						
Chat						
Other:						

<b>TYPES OF ADAPTATION</b>	NA	1	2	3	4	5
Simplification						
Elaboration						
Discoursification						
<b>SOCIAL MEDIA</b>	NA	1	2	3	4	5
Facebook						
Twitter						
WordPress / Blogger						
Instagram						
Pinterest						
Other:						
<b>CONTENT SHARING</b>	NA	1	2	3	4	5
Dropbox						
Google Drive						
Other:						
<b>GAME-BASED LEARNING</b>	NA	1	2	3	4	5

## Annex C. Assessment methods

### **ASSESSMENT METHODS**

*NA: Not applicable 1: Very rarely 2: Rarely 3: Sometimes 4: Quite often 5: Very often*

<b>SELECTED RESPONSE TASKS</b>	NA	1	2	3	4	5
Multiple choice quizzes						
True/false exercises						
Types of labelling						
Matching						
Gap-filling activities						
Others:						
<b>WRITTEN RESPONSE TASKS</b>	NA	1	2	3	4	5
Essays						
Written short responses						
Written long responses						
Others:						
<b>PERFORMANCE ASSESSMENT TASKS</b>	NA	1	2	3	4	5
Oral presentations						
Role-plays						
Discussions						
Observation with checklist						
Anecdotal records						
Think aloud						
Others:						
<b>ONE-TO-ONE COMMUNICATION</b>	NA	1	2	3	4	5
Discussion						
Interview						
Questioning						
Others:						
<b>PORTFOLIO</b>	NA	1	2	3	4	5
Paper-based						
E-portfolio						
<b>PEER-ASSESSMENT</b>	NA	1	2	3	4	5
<b>SELF-ASSESSMENT</b>	NA	1	2	3	4	5

## Annex D. Classroom observation checklist

### CLASSROOM OBSERVATION CHECKLIST

Subject: \_\_\_\_\_ Class/Date: \_\_\_\_\_

*1=Not observed      2=Could improve      3=Acceptable      4=Excellent*

		BEHAVIORS RELATED TO GOOD TEACHING	1	2	3	4
<b>LESSON</b>	1	States objectives for class session				
	2	Captures attention by communicating relevance				
	3	Helps students to recall what they already know				
	4	Communicates a clear organizational scheme				
	5	Connects material to real world examples or students' interests				
	6	Checks understanding through targeted questions or activities				
	7	Provides targeted practice opportunities and feedback				
	8	Defines new terms before using them				
	9	Provides opportunities for student to student interaction/discussion				
	10	Provides opportunities for student questions				
	11	Breaks down complex ideas into simple parts				
	12	Uses multimodal methods for teaching: Visual, auditory, kinesthetic activities, images, metaphors, cases, problem solving, writing activities, group work, etc.				
	13	Limits key ideas or concepts to fewer than seven				
	14	Provides a clear explanation of assignments				
	15	Provides a summary of key points or ideas that includes a transition to the next lesson				

<b>ENVIRONMENT</b>	16	Addresses individuals by name				
	17	Exhibits enthusiasm about the topic				
	18	Demonstrates respect when responding to students				



	<b>19</b>	Manages discussions among the high/low responders				
	<b>20</b>	Makes eye contact with students in different parts of the classroom				
	<b>21</b>	Uses statements or examples that do not assume that students share a common cultural perspective				
	<b>22</b>	Prompts all students equally for responses to questions				

<b>DELIVERY</b>	<b>23</b>	Easily heard				
	<b>24</b>	Enunciation is clear				
	<b>25</b>	Pacing is appropriate				
	<b>26</b>	Faces the class when speaking				
	<b>27</b>	Uses friendly gestures and facial expressions				
	<b>28</b>	Provides explanations for visuals (as opposed to reading them)				

<b>MEDIA</b>	<b>29</b>	Visual information easily seen/heard				
	<b>30</b>	Audio easily heard if used				
	<b>31</b>	Slides have minimal text				
	<b>32</b>	Diagrams, charts, and maps are labeled clearly				
	<b>33</b>	Purpose of media explained				