

Master's Dissertation/
Trabajo Fin de Máster

**PROJECT - BASED LEARNING IN
THE CLIL CLASSROOM: A
DIDACTIC PROPOSAL FOR 5TH
GRADE**

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July, 2023

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ABSTRACT

The boom in interest in learning a foreign language is causing more and more schools to want to teach the foreign language and content in an integrated way. It is through the CLIL methodology that the centres are implementing this idea. In addition, educational laws and relevant authors in CLIL encourage the use of active methodologies in the classroom, so in this Master's thesis, Project-Based Learning and CLIL methodology will be used together. First, a small analysis of the literature of both methodologies will be carried out to know the most important aspects of each of them. Finally, with the aim of putting theory into practice, both methodologies will be implemented in the same didactic proposal for 5th grade of Primary Education in the autonomous community of Andalusia. In it, the essential elements of both methods, as well as those they have in common will be used in the same project that integrates the subjects of Natural Sciences, First Foreign Language and Arts and Crafts.

Key Words: CLIL, PBL, English, Natural Sciences, Primary Education.

RESUMEN

El auge en el interés por el aprendizaje de una lengua extranjera está provocando que cada vez más centros escolares quieran enseñar la lengua extranjera y los contenidos de forma integrada. Es a través de la metodología CLIL por la que los centros están implementando esta idea. Además, las leyes educativas y algunos autores relevantes en CLIL fomentan el uso de metodologías activas en el aula por lo que en este trabajo de fin de Máster se van a integrar el Aprendizaje Basado en Proyectos y la metodología CLIL. En primer lugar, se realizará un pequeño análisis de la literatura de ambas metodologías para conocer los aspectos más importantes de cada una de ellas. Finalmente, con el objetivo de llevar la teoría a la práctica, se implementarán ambos enfoques en una misma propuesta didáctica para 5º de Educación Primaria en la comunidad autónoma de Andalucía. En ella, los elementos esenciales de ambos métodos, así como aquellos que tienen en común serán utilizados en un mismo proyecto que integra las asignaturas de Ciencias de la Naturaleza, Primera Lengua Extranjera y Plástica.

Palabras Clave: AICLE, ABP, inglés, ciencias de la naturaleza, educación primaria.

1. INTRODUCTION

1.1. Justification

In the current era, globalization forces citizens to know other languages in order to be able to communicate in other countries either in an economic or cultural context (Kramsch, 2014). This globalizing process has caused a great number of governments in different areas around the planet to find in Content and Language Integrated Learning (CLIL) a solution to the development of linguistic competence in a foreign language, thus facilitating economic exchange between the different countries of the world (Harrop, 2012). Likewise, the Council of the European Union recommends encouraging students to increase the level of linguistic competence in different languages that are relevant to their employment situation so that they contribute to cross-border communication and mobility (European Council, 2018). Along the same lines, Eurydice (2006)¹ promotes the use of the CLIL methodology for the acquisition of multilingual competence in European students to develop their language skills.

Spain, as a member of the European Union, has also integrated multilingual competence into its education Law LOMLOE 3/2020, further emphasizing the need for pupils to improve their language skills in a foreign language. In this same law, the active role of the student in their learning is highlighted, emphasizing the need to carry out integral projects in which students put in common the competences detailed in the law.

When projects are carried out, students simultaneously learn content and language and also develop different skills such as the ability of infer, explain, draw conclusions, hypothesize, design, discuss, interpret data or explain and apply ideas, among others (Beckett & Slater, 2005). This makes, for instance, Project-Based Learning (PBL) an ideal methodology to achieve the integration of all knowledge and set the real connection between the contents learned. In addition, different authors such as Bell (2010) or Aksela and Haatainen (2019) highlight the role of PBL in student motivation towards learning, in the development of collaboration and communication skills and in the development of real problem-solving skills, demonstrating that PBL is an active, integrative and updated methodology.

Therefore, this final work will offer a didactic proposal joining CLIL and PBL as the central methodologies of the proposal. This bilingual project designed for 5th grade students

¹ Eurydice: is a European network created in 1980. Its role is to promote European cooperation by exchanging information on the organisation and functioning of education systems in Europe and their education policies. In addition, it provides numerous reports that promote understanding, cooperation, trust and mobility at the international and European level.

will lay its foundations in the most relevant aspects of each methodology which are detailed in the following points.

1.2. Objectives

The main objective of this final work is to propose a didactic project in which content and language integrated learning and project-based learning come together in a single methodology. In this way, through this method, students will benefit from the advantages that both provide in their learning process.

At the same time that we work on achieving this general objective, there are other more specific objectives that will also be worked on along this Master's dissertation and that are detailed below:

- To define and detail the characteristics of the CLIL methodology
- To describe the implementation of CLIL in Spain and Andalusia.
- To define and detail the characteristics of the PBL method.
- To highlight the benefits of CLIL and PBL integration.

2. THEORETICAL FRAMEWORK

2.1. What is CLIL?

The search for a methodology in which students can learn one or several foreign languages without affecting the learning of other subjects has become one of the objectives of current teaching where the need to communicate with other countries is key to the evolution of society in a globalized world. As a consequence, different methods such as immersion in which students are exposed to a large extent to the foreign language (Mavropoulou & Arvanitis, 2021), the bilingual method where most subjects are taught in the foreign language (Cardich San Juan, 2017) or the CLIL approach have emerged to address this need.

But, what is CLIL? To answer this question, we will analyse where this methodology comes from, the meaning of CLIL in the educational field with its implications and the characteristics that this method presents when implemented in the classroom.

2.1.1. CLIL Background

The increase of the globalization process and the development of new ways of communicating have led to the need to learn a lingua franca in order to develop the economy (Mehisto *et al.*, 2008). Not only in the economic sector was this need reaffirmed, but also in the political, scientific and social fields. The exchange of ideas, research and beliefs propelled global curiosity, highlighting the importance of being able to communicate freely wherever you travel or with whom you make an economic agreement.

This change in the perception of trade and foreign policy made the European Union react. That is why the Council of Europe began to establish laws in which its citizens would have to learn different European languages (multilingualism) to understand each other and perceive themselves as a community (Seidlhofer *et al.*, 2006). To achieve this, the European Council (2007) established in its Guide for the Development of Language Education Policies in Europe that European students should follow multilingual education whose objective would be to develop their multilingual competence, as well as intercultural education to promote common life (p. 18).

Due to these policies, the educational community began to ask how to give more exposure to the language without impairing the learning of the contents necessary to be competent citizens (Coyle *et al.*, 2010) so they looked at the Canadian immersion model. In this model expanded through Canada and the rest of the world, students were fully exposed to their L₂, i.e., at school, all subjects were taught in the official language of the country, even if this was not the mother tongue of the pupils. In this way, they were able to acquire communication skills in another language while they continued to practice their mother tongue at home. In Europe, aware that this methodology could not be directly transferred, they began to think of approaches similar to immersion that were more in line with European characteristics (Eurydice, 2006).

Finally, according to Marsh (2002), the term CLIL emerged in the 1990s to teach and learn content through a foreign language in non-linguistic subjects and thus develop at the same time their skills in both, the content subject and language subject. In 1995, the European Union drafted one of its first documents (Council Resolution of 31 March 1995) promoting the CLIL idea.

2.1.2. Definition

There are different definitions of the CLIL methodology. The Andalusian government defines CLIL as “the methodological approach by which a subject or part of it is taught through

a foreign language with a double objective: the learning of contents of certain curricular subjects and the simultaneous learning of a foreign language” (Junta de Andalucía, 2016, p. 51). On the other hand, experts in the area have also defined it on numerous occasions. Of all the definitions, we have selected those provided by David Marsh, Do Coyle and Philip Hood that accurately summarize what the CLIL approach implies:

CLIL is an ‘umbrella’ term to refer to diverse methodologies which lead to dual-focused education where attention is given to both topic and language of instruction. It is used to describe any educational situation in which an additional (second/foreign) language is used for the teaching and learning of subjects other than the language itself (Marsh, 2006, p.32).

Content and Language Integrated Learning (CLIL) is a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language. (Coyle *et al.*, 2010, p. 1).

Since 1994, CLIL has been divided according to its objective, into hard CLIL emphasizing subject matter and soft CLIL which focuses on language development (Banegas, 2018). This variability of CLIL makes this approach flexible and better adapted to the student's contexts since, in short, CLIL is a mixture between language learning and the subject, so the achievement of both in the learning process must prevail (Coyle *et al.*, 2010). In other words, in the CLIL methodology both content and language are important so neither can prevail over the other. Teachers must collaborate to truly integrate all content without favouring language over content or vice versa and students must have opportunities to experience what they learn.

In relation to the ideas of Attard Montalto *et al.* (2015), the use of CLIL does not imply that students know the language before starting, but that they are learning content and language simultaneously. Although the level of students is one of the operating factors that affect the implementation of CLIL (Coyle *et al.*, 2010), the study carried out by Rascón Moreno and Bretones Callejas (2018) corroborates that the social context does not affect the proper functioning of CLIL in school, which implies that the CLIL methodology can be carried out in all educational centers regardless of cultural background or the level of fluency of students in the foreign language. In short, students who follow CLIL learn content and language at the same time, thus being able to improve their level of foreign language regardless of their

previous level and avoiding the elitism to which knowledge of foreign languages is often attached.

All these ideas lead us to imagine what CLIL really is, but in order to really know what terms define what CLIL is, we must consult the 4Cs Framework by Coyle (2007) in which content, communication, cognition and culture are interconnected. These four terms are the basis that frames the integrated approach thus ensuring the development of appropriate communication skills. Below (cf. Fig 1.), each of the terms will be briefly analyzed (Coyle *et al.*, 2010):

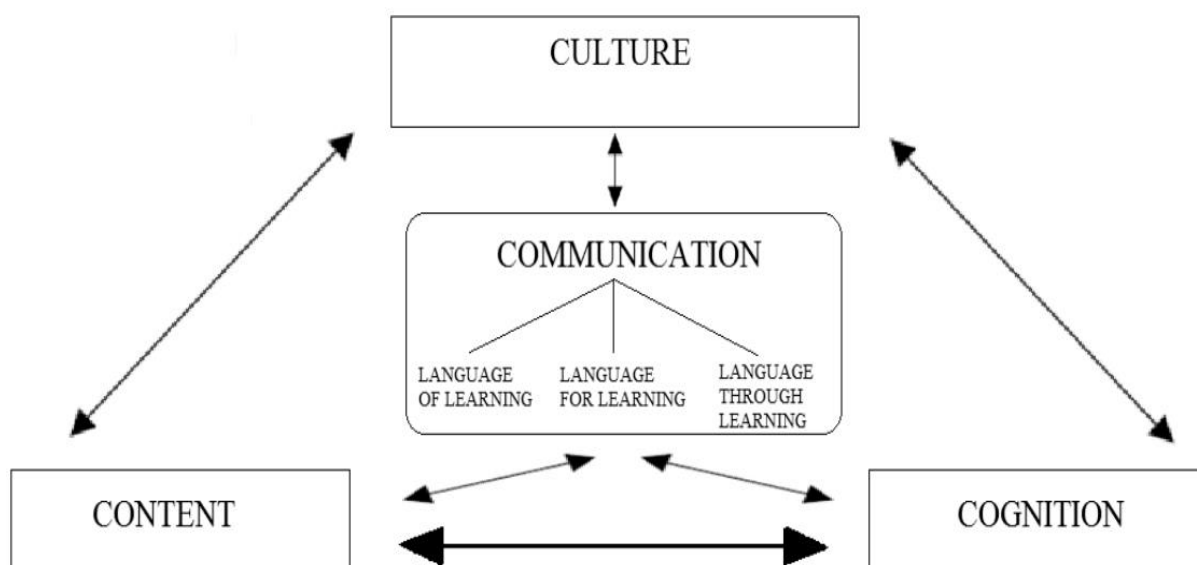


Figure 1. 4Cs Framework with the Language Triptych (Nikolić. 2017, p. 124)

- Content: it can be defined as the knowledge of the subject that students need to learn and understand. It is based on the personalized learning of the student that must be adapted to their needs and abilities. For a meaningful adaptation of teaching in a CLIL environment it is advisable to develop CLIL materials based on the 10 principles listed in Mehisto (2012).
- Cognition: this skill is related to the thinking processes in which the student is involved. The processes that students follow to build their learning are analysed and used in this framework. For this, it is useful to consult the review of Bloom's Taxonomy by Anderson and Krathwohl (2001) in which the cognitive processes that students follow when performing the tasks and the degree of difficulty of these are analysed, starting with Low Order Thinking Skills (LOTS) and ending with High Order Thinking Skills (HOTS).

- Culture: The intercultural development of citizens is one of the objectives of the European Union. In addition, learning culture is linked to language learning so, by learning the language, we learn culture by reinforcing the quality of education and enhancing intercultural dialogue, social inclusion and democracy, key aspects in the proper development of European identity (Council of Europe, 2020).
- Communication: Language is not really learned without communication. The possibility of using language is what allows to learn it. This use of language leads to the question of what kind of language should be taught in classrooms. To solve this problem Coyle *et al.* (2010) proposed The Language Triptych in which it is determined that students should learn language of learning (academic), language for learning (language needed when operating) and language through learning (acquired when learning). With this tool, teachers can determine the content that should be taught, the advisable content and the enriching content.

2.1.3. Characterization

CLIL is an approach that due to its flexibility of adaptation to the context presents different characteristics, depending on the type of CLIL that we are applying. However, Ramírez Verdugo (2011) establishes three main characteristics that all CLIL approaches must present:

- CLIL should be based on an integrated approach in which foreign language learning is included in content classes. That is, the target language is the one that facilitates the understanding of the content and thanks to its use, students also improve their proficiency in the foreign language. It is very important that there is a balance between language learning and content, neither should take precedence over the other.
- CLIL, being a European approach, must respond to the socio-linguistic and political heterogeneity that characterizes Europe. That is why CLIL can be used for any language, any educational level whether preschool, primary, secondary, baccalaureate or vocational training and any subject since science is only a small part of all content subjects to which CLIL can be adapted. In short, the CLIL approach must be based on multilingualism and multiculturalism in order to seek the integration, understanding and mobility of European citizens.

- In relation to the characteristics aforementioned, CLIL should be an approach in which social, cultural, cognitive, linguistic and academic skills, among others, are promoted in order to facilitate the acquisition of both content and language.

The flexibility that must characterize this approach so that this methodology can be carried out satisfactorily in all European schools has caused CLIL to be divided into several models in order to better adapt to the context. These varieties fluctuate from a more content-oriented approach to a more language-driven one. In addition, it can also differ in exposure to learning (from low to high intensity) or even the time in which CLIL is implemented (from short-term to long-term). Seeing all the factors that can influence the characterization of one type of CLIL or another, Mehisto *et al.* (2008) created the following image (Figure 2) in which they clearly differentiate the varieties of CLIL in Europe clearly:

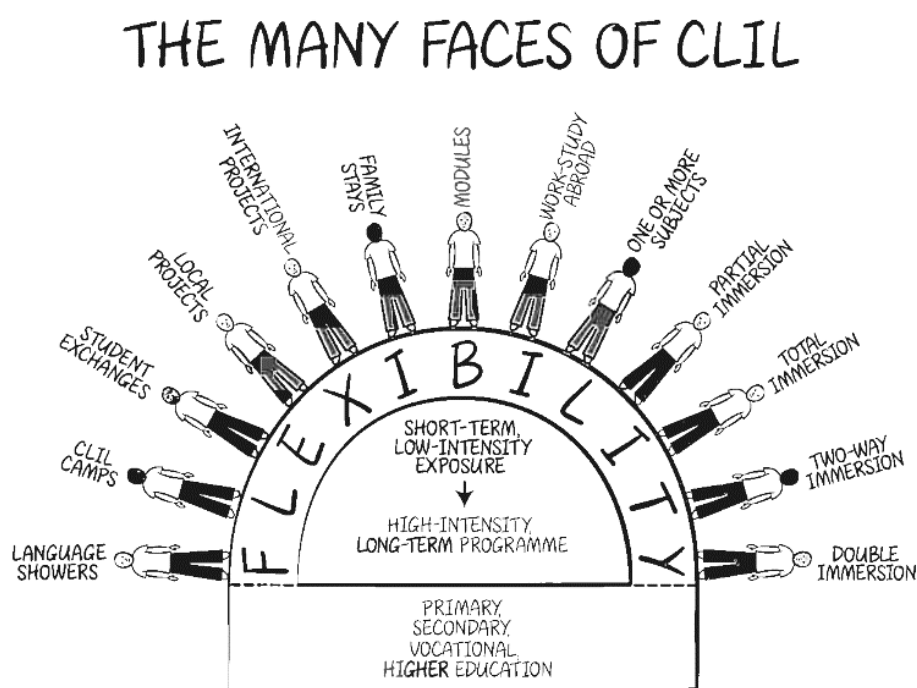


Figure 2. The many faces of CLIL (Mehisto *et al.*, 2008; p. 13)

In this image, you can see the different types of immersion depending on the exposure to foreign language that students have. In this type of CLIL, students are taught through language in all or almost all subjects of the curriculum. After the immersion methods we find the teaching of several subjects through a foreign language. This teaching can be carried out entirely in the foreign language or using both, the mother tongue and the foreign language. Next, different European approaches such as exchanges, projects, camps or stays are also included in CLIL since these exchanges encompass the learning of the culture and language of

the country so it contributes to the characteristics of the CLIL approach. Finally, as low intensity and exposure programs, there are language showers, common in infant education, in which students are exposed to the foreign language for a maximum of 30 minutes several times a week.

On the other hand, Sierra and Lasagabaster (2008) number five characteristics that distinguish the CLIL approach from immersion programs: the language, the teaching staff, the materials, the linguistic objective and the type of students. To better understand the differentiation they propose, we will analyse it point by point:

1. Language: immersion programs are mostly carried out in the official or co-official language of the region where it is taught, so students who do not know the official language are immersed in it (Cummins, 2010). In contrast, CLIL uses a foreign language which is a language that is not present in the context of the students since it is neither official nor co-official language and that most students only learn in the school.
2. Teachers: the teachers of the immersion programs are native speakers and have an expert command of the language so the native-like proficiency becomes a goal (Somers & Surmont, 2012). However, in CLIL teachers are content-trained teachers who enjoy a good command of the foreign language but are usually non-native speakers (Dalton-Puffer *et al.*, 2014). For this reason, content teachers should have a good use of the foreign language and coordinate with their peers of the foreign language subject to find common elements and assist them in the use of the linguistic functions for the CLIL class (Pavón, 2014).
3. Materials: the materials in immersion programs are designed for natives while in CLIL these materials are usually adapted. Following Mehisto (2012), the CLIL materials need to be adapted to the L2 level in the four language skills (reading, writing, listening and speaking), to the age of the students and to their cognitive and social skills. According to the same author, if these criteria are followed, students will improve their academic language proficiency.
4. Linguistic objective: in immersion, it is sought that students achieve the native-like proficiency in the foreign language. For its part, CLIL does not seek that students are experts in the foreign language, but that they develop the linguistic competence in a

language that is not their mother tongue. The objective is for students to acquire fluency and ability to communicate orally and in writing in different contexts, whether formal or informal (Marsh, 2002).

5. Type of students: Sierra and Lasagabaster (2008) explain that in immersion classrooms students are usually immigrants and do not know or know very little about the official language of the country. On the contrary, in bilingual programs students are originally from the country where CLIL is taught and the presence of immigrant students is not very high.

Another characteristic that CLIL presents is the use of active and student-centred methodologies since, in the words of Kiely (2011). CLIL places the pupil and their opportunities for learning at the centre. That is why CLIL caused a change in the role of the teacher, from being the sole provider of information to being the facilitator of both language and content (Pavón & Ellison, 2013). In addition, this change of focus in teaching motivates teacher updating since it requires teachers to know new methodologies focused on the student which entails the use of resources adapted to the diversity and the adaptation of the learning environment (Pérez Cañado, 2017). On the other hand, this change of vision that gives an active role to the students, needs them to take responsibility for their learning and leave their comfort zone. Thanks to this, the students will be able to develop their cognitive skills by preparing them for higher-level thinking skills, as well as improve their linguistic competence in the academic and social field and their cultural competence as when taking charge of their learning students are challenged and learn to *savoir faire* and *savoir être* (Coyle, 2002).

All the ideas aforementioned that summarize what CLIL is make it easier for students to improve their communicative competence while learning the content (Dobson *et al.*, 2010 and Pavón *et al.*, 2014). In addition, despite the erroneous beliefs around CLIL in which it was thought that when using CLIL students did not learn to communicate in a foreign language or the content of the subjects taught following CLIL, Hughes and Madrid (2019), Martínez Agudo (2020) and Pérez Cañado (2018) demonstrate that CLIL does not negatively affect students' school results.

2.2. CLIL Implementation

Regarding Wolff (2002), Beardsmore (2002) and Coyle (2005), CLIL varies from one place to another as it depends on the background of each place. The way CLIL is implemented

in Finland, for instance, is not the same that France or Spain follow. Even in the same country, in different regions, different CLIL approaches can be applied after careful evaluation to see what CLIL orientation is to fulfil local needs. For this reason, in this Master's dissertation, it will be carried out an analysis of the implementation of CLIL in Spain and Andalusia in order to better contextualize the didactic unit that will be explained later.

2.2.1. CLIL in Spain

In Spain, the learning of the second language has been an objective since *Ley General de Educación de 1970* where article 17 of the second section included the learning of a foreign language. This objective has been improved law after law and bilingualism has been gaining value in Spanish schools. This interest in using a foreign language as a vehicular language in non-linguistic subjects began with a bilingual project in 1996 in which the Ministry of Education of Spain and the British Council Foundation collaborated. From this project, CLIL has been an approach that has been rapidly expanded in the educational field. More and more Spanish schools are introduced to bilingual programs following the CLIL methodology so that students can improve their linguistic competence in a second language. The quickly implementation of the approach in Spain can be perceived in works such as that of Do Coyle in which it is stated that:

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, p. viii).

This advance of the CLIL methodology has led to different initiatives to increase the multilingual ability of students such as language immersion programs, European classrooms, or bilingual projects. Likewise, the governments of the autonomous communities have drawn up different plans and laws to direct the implementation of bilingualism or multilingualism in their classrooms. Of all the proposals made by the different regional governments, the following stand out:

- PALE (Program to Support the Teaching and Learning of Foreign Languages): this program is developed in different communities and its main objective is to improve the

linguistic competence of the foreign language in students and reduce the linguistic inequality of students.

- Bilingual Sections: These programs involve the teaching of non-linguistic subjects in a foreign language of their own. In Castilla y León, this program is developed in 2 or 3 subjects and the hours taught in the foreign language cannot exceed 50% of the total student schedule (*Programas bilingües/ Secciones lingüísticas* | Educa Cyl, n.d.). On the contrary, in Galicia, this program involves the teaching of a non-linguistic subject using the foreign language for at least 50% of the teaching hours (*Secciones Bilingües* | *Consellería de Cultura, Educación y Universidade*, n.d.).
- PEDLA: this program, developed by the Andalusian government, seeks to improve the communicative capacity of the student and is carried out in non-linguistic subjects. It will be explained in more detail in the next section.
- BRIT: this program was developed in Aragon in 2018 to favour and develop the communicative competence of students in a foreign language and that students reach level B2 of the Common European Framework of Reference for Languages. This program is taught from the second cycle of Infant Education until the end of the compulsory stage. During this period, the percentage of foreign language education that the student must receive is at least 35% of the teaching hours (Gobierno de Aragón, 2018).

As can be seen, although there are different models that are regulated by different laws and orders, all plans have a common goal, to improve the communicative competence of students across the curriculum. In addition, the Spanish linguistic diversity where we find communities with two co-official languages and monolingual communities mean that the same plan cannot be applied to all Spanish schools, but each community follows a program that focuses on its linguistic and cultural characteristics and particularities.

It is necessary to mention that the linguistic diversity of bilingual regions has been used as an example for the design of programs in monolingual communities. In addition, by implementing CLIL following previous models, the increase in the use of the methodology has been facilitated, which has led to verify that CLIL is a good tool to learn the foreign language in a natural way and to foster multilingualism and linguistic diversity that is one of the objectives of European policies (Lasagabaster & Zarobe, 2010)

2.2.2. CLIL in Andalusia

Andalusia is a monolingual autonomous community in which the only official language is Spanish. Despite this circumstance, due to the linguistic variety of this community caused by immigration, tourism, programs with North America or the acquisition of vacation homes on the Andalusian coast, the need for Andalusian students to improve their multilingual competence has become a necessity (Lorenzo, 2010). For this reason, the Andalusian government has prepared two main documents: the plan for the promotion of plurilingualism in Andalusia (APPP) and the Strategic Plan for the Development of Languages in Andalusia (PEDLA).

The first, the APPP, arose from the need to adapt the Andalusian education system to the objective of improving the linguistic competence and learning capacity of European citizens in two foreign languages, proposed at the Lisbon summit in 2000. Milla Lara and Casas Pedrosa (2018) define it as “a CLIL programme launched in 2005 by the Andalusian educational authorities which has had a great uptake since its beginnings and which continues to foster plurilingualism Primary and Secondary school students amongst year after year all over the region” (p. 161). To achieve the goals proposed by Junta de Andalucía (2005) to improve language skills and promote multilingual competence, this plan proposes the use of CLIL and the predominance of a communicative methodology in the classroom so that students can enjoy authentic input. In addition, the plan implements the learning of the foreign language from early childhood education and even proposes educational exchanges, among other initiatives.

It is important to highlight that the APPP is divided into five specific programs: bilingual centers, official language schools, multilingualism and teachers, multilingualism and society and multilingualism and interculturality. These plans respond to the need to train teachers for the proper development of bilingualism, share good teaching practices in the educational field, establish the criteria for bilingual education, increase the linguistic competence in a foreign language of adults or train teachers in cultural diversity to meet the needs of these students by facilitating adaptation to language and culture.

Last but not least, it is important to mention that to review the APPP and improve it, the government of Andalusia drew up another plan called the Strategic Plan for the Development of Languages in Andalusia. Horizon 2020 (PEDLA) with which they want to consolidate the Bilingual Program, improve teacher training, increase exposure to languages and promote interculturality. For this purpose, and following European regulations, this plan is based on the use of the CLIL methodology from childhood to increase the linguistic capacity and social

cohesion of students and on the treatment of linguistic competence through all areas of the curriculum to stop school failure and train students integrally. In addition to all the aforementioned, the PEDLA promotes language learning through cultural content outside the classroom in order to stimulate Lifelong Language Learning (Junta de Andalucía, 2016).

2.3. Project-Based Learning

Gradually more, European and global school curricula encourage comprehensive learning of content. This comprehensive learning includes learning the language at the same time as learning content. To achieve this inclusion, the Council of Europe (2020), in the Common European Framework of Reference, proposes that students interact collaboratively and in small groups through small projects, that is, making use of the Project-Based Learning (PBL) methodology. In this same document, on page 122, it is said that this methodology facilitates that students build knowledge so it facilitates the active role of the student in learning. To better understand the benefits of PBL in the classroom we will analyse its characteristics and essential elements.

2.3.1. Origin, Definition and Characteristics

Since ancient times, some of the characteristics of this methodology have been used in education. But it is not until the early twentieth century that project-based learning emerges thanks to John Dewey, a professor at the University of Chicago. This professor stated that students learn better if they perform real and meaningful tasks based on real-world situations (Krajcik & Blumenfeld, 2005). Later, in 1918, William Heard Kilpatrick, a student of John Dewey, published an article called The Project Method in the magazine Teachers College Record 19, vol. 4. In this paper, Kilpatrick established projects as a teaching method giving rise to what we now know as Project-Based Learning (PBL).

Once we know the origin of this method, we will analyse its meaning. There is no set definition of what Project Based Learning is. The definitions proposed by the authors are complementary since, despite having common elements, they are not identical. That is why we are going to offer three different definitions in order to define the term PBL more precisely:

Project Based Learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge. PBL requires critical thinking, problem

solving, collaboration, and various forms of communication. (Buck Institute for Education, n.d., what is PLB?).

A constructivist pedagogical approach that emphasizes inquiry-based experiential learning [...] a hands-on student-centered pedagogical approach that promotes more enduring and substantial education through observation, experience, and reflection in authentic contexts where school and the real-world knowledge can be connected. (Beckett *et al.*, 2016, p. 996)

Project-based learning (PBL)-powered by contemporary technologies- is a strategy certain to turn traditional classrooms upside down. When students learn by engaging in real-world projects, nearly every aspect of their experience changes. The teacher's role shifts [...] Student behavior also changes. Instead of following the teacher's lead, learners pursue their own questions to create their own meaning. [...] Teachers typically design the project as the framework for learning, but students have more agency and may wind up using technology to access and analyze information from all corners of the globe. (Boss & Krauss, 2018, p.16)

These three definitions give us an idea of what it takes to use a PBL methodology in the classroom, including changes in the roles of students and teachers, changes in the content to be taught, in the context of the tasks and even in the usefulness of these. In addition, with the third definition it is possible to understand how the Project Based Learning methodology is perceived through a current perspective, taking into account the new technologies with which students live and to which teachers must adapt.

Thanks to the definitions you can get an idea of what it means to use PBL. To further analyse this method, we will develop the characteristics that define it (Stoller, 2006, p. 24):

- Have a process and product orientation.
- Be defined to encourage students' ownership in the project.
- Be extended over a period of time.
- Make a dual commitment to language and content learning.
- Oblige students to work in groups and on their own.

- Require students to take some responsibility for their own learning through the gathering, processing, and reporting of information from target language resources.
- Require teachers and students to assume new roles and responsibilities.
- Result in a tangible final product.
- Conclude with student reflections on both the process and the product.

Apart from these characteristics, Hernández (2000) establishes some items that could characterize work projects and that expand the features proposed by Stoller:

- A problem that fosters research: The teacher or a student may raise a problem/topic that needs investigation by the students. This research must involve several areas of the curriculum so that students integrate the contents studied in the same project.
- Principle of cooperation: the teacher must act as support, cooperating with the students for the resolution of the problem. In addition, students must collaborate with each other, diversifying tasks and sharing their impressions of the findings in the project.
- Different resolution methods: Projects do not follow a single resolution method. Each project, each issue, can be solved in a different way. There is no formula to solve them all. When doing a project, students can search for the information in any reliable source, they can use different resources and they can present the final product in any way they want, thus adapting to their abilities (provided that the teacher does not tell them otherwise).
- Individual learning: all students do not learn the same thing when they do a project. Each student learns in a different way and relates knowledge according to their learning styles. Thanks to the projects, students not only learn the content of the project, but also different techniques or knowledge that they can use in other areas of life.
- Real learning: the projects are located in current problems and knowledge. Students will carry out projects that are linked to the real world, although they are adapted to the level of the students.
- *Savoir faire*: Learning is achieved through manual activity. Students learn more if they research, select information, and write than if they simply memorize.

All these features, and many more, give us a broader view of what PBL entails. In the next point we will expand this information with the essential elements that must be taken into account when implementing this method.

2.3.2. *Essential Elements in PBL*

The project-based methodology has eight essential elements that define it. Without these elements, it cannot be considered a good project, so knowing them becomes a necessity so that this methodology can be properly implemented. According to Trujillo (2015) the eight essential elements that comprise PBL are:

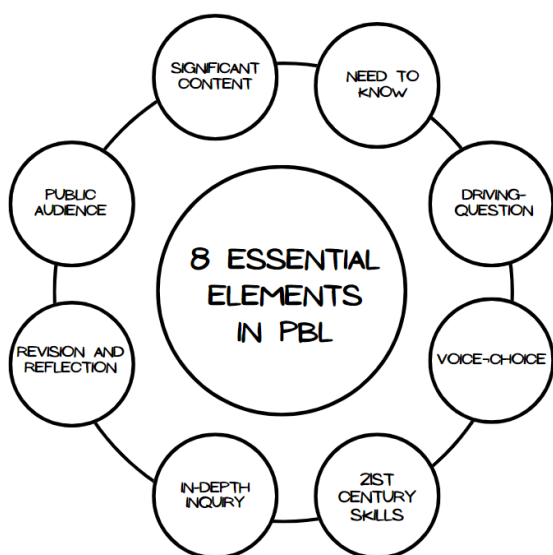


Figure 3. *Essential elements in PBL*

– Significant content: The project must be contextualized in the students' environment. That is, that it adapts to their concerns and interests, that they perceive its usefulness in the real world. It should not be forgotten that the selection of the subject should be based on the learning objectives set out in the educational curriculum established in the educational laws, but despite this, a significant project should be sought in order to increase the motivation of the students.

- Need to know: students should be curious from the first moment the project is proposed. Students should be encouraged to ask questions and reflect. This can be fostered by using common day-to-day problems or by introducing an open debate in which there is no right answer. This is the way in which they should start the project and they will do that to solve their questions.
- Driving-question: an open-ended question that directs the project is critical to the successful implementation of PBL. This question should encourage the student to get involved in the project and not do it just because the teacher says so, but because of their own ambitions. In short, the question should propose a challenge for the students.
- Voice and choice: Students must be the active subjects in the project. The working group must distribute its responsibilities, the roles of each team member and the times. Another fundamental factor is that they choose how the final product will be presented (reports,

presentations, videos, posters, etc.). The teacher is only a guide who must accompany the student in the process and should not impose his ideas.

- 21st century skills: Students should work in small groups of 3-4 people to develop 21st century competencies. These competencies include communication, expressing ideas critically, using ICT and skills involving teamwork. All these skills can be better worked on in the classroom using cooperative-collaborative work.
- In-depth inquiry: After the debate on the driving-question, the students begin to work on those small questions that have arisen trying to answer them with information from videos, websites, books, etc. After extensive research, they are expected to respond to the problem or, if there is no clear solution, to formulate hypotheses.
- Revision and reflection: The teacher must monitor the progress of the students, checking their sources and supervising the work they are doing day by day in order to guide them. In this way, students must also learn to review their work and not stay with the first information they find or the first draft they elaborate.
- Public audience: The project must be presented in front of a real audience. It can be exhibited in the school, streets or town hall. It can also be presented to other classes or uploaded to the school's website.

In order to successfully implement these eight key elements, Kokotsaki *et al.* (2016) offer us some key recommendations that will facilitate their application in the classroom. First, they highlight the need to guide and support the student so that they can self-manage properly. Apart from this, they clarify that the teacher needs support from school management. Likewise, it is necessary that all students collaborate equally and have the same opportunities as the rest of the group. Another relevant aspect is the need to offer students the necessary tools and knowledge before starting the project to not to diminish their initial motivation and increase their frustration. Finally, they recommend that students evaluate themselves, their peers and the work done in order to control their learning.

Thanks to all the above, students are encouraged to use English in meaningful and authentic contexts. In addition, thanks to this interaction, they receive a greater input so they increase their knowledge of the language at the same time that they externalize it when communicating. In addition, as students work in groups, they improve their communication

skills and learn to work cooperatively, taking responsibility for their own work so as not to affect the group. Finally, by working in small groups autonomously, it is easier for the teacher to attend to the special needs of each student and adapt teaching to their learning style (Laverick, 2018).

2.4. PBL and CLIL

Pérez Cañado (2018) points out that Project-Based Learning, as one of the student-centred methodologies, should be used in the CLIL method. Both PBL and content and language integrated learning are two active and student-centred methodologies that foster student motivation and give them a central role in the teaching-learning process by promoting their communication skills and knowledge. As stated by Stoller (2002), the joint implementation of both methods in the same lesson encourages meaningful learning in both content and language, which stimulates the development of high-level thinking skills.

Another aspect to highlight of the joint use of PBL and CLIL is that, thanks to their communicative exchanges, students develop their group work skills that encompass collaborative and cooperative capacities (Sierra, 2016). The acquisition of these skills is fundamental for the development of one of the eight competences established by the European Union and the government of Spain. This civic competence implies that students know how to interact effectively with other people cooperating to solve problems (Council of Europe, 2018).

In relation to the life-long learning skills promoted by the European Union, Vázquez (2019) states that "placing substantial attention to connections, context, culture, and communication, components where CLIL and PBL meet hand in hand would also mean educating to respond to what modern societies and students demand in terms an authentic language learning" (p.488). That is, thanks to the joint use of both methodologies, students will be able to develop the necessary competences at the end of the compulsory educational stage such as multilingual, social, citizenship, cultural awareness and expression competence or competence in linguistic communication. As a result of the acquisition of these skills, students will develop their communication skills in one or more languages, as well as all those linked to life in society.

Finally, it is interesting to highlight the characteristics of the CLIL method that coincide with PBL and that make the fusion of both a good option in the teaching-learning process. Piquer-Piriz and Pérez-Valenzuela (2023) highlights that some of the features and objectives that coincide in both methods are the importance of the context where it is taught, the culture

and the communication that is carried out through the language that must be characterized by being real and having a specific objective. In addition, these same authors emphasize that the coexistence of both methodologies promotes not only a significant learning of the content, but also the integration of language teaching and learning strategies that will be relevant in any subject. Lastly, thanks to the study carried out by Yufrizal (2021) we can verify that PBL helps to achieve the main objective of CLIL, that students learn content while improving their competence in the foreign language.

3. DIDACTIC PROPOSAL: CLIL AND PBL IN THE 5TH GRADE CLASS

3.1. Justification

This project called “Red Alert!” seeks to raise awareness among students about the protection of the ecosystems that surround them in order to preserve species and prevent their disappearance. To achieve this, the figure of the lynx will be used, an endangered feline that is located mostly in the surroundings of Sierra Morena, a natural place of which the town of Andujar is part. Knowing the lynx not only helps us establish connections between the elements of the ecosystem in which it lives, but also learn to take care of nature and raise awareness about its importance in our lives.

Furthermore, thanks to this project that will encompass the contents on animals and ecosystems of Natural Sciences, our students will learn in a communicative way the oral and written skills of a foreign language since the project not only includes the subject of Natural Sciences, but also that of Foreign Language. In addition, together with the teachers of Arts and Crafts, we will work on the elaboration of the final product since it includes the artistic contents of this subject. In addition to the curricular contents, transversal contents such as oral and written expression, audiovisual communication, information and communication technology (ICT) and care for the environment are also developed. With the joint work in these three subjects and the transversality of the project, one of the proposals of the state and regional education laws is achieved, the integration of contents to achieve a competency approach in the teaching process.

With the aim of enriching the project, collaboration has been requested with the City Council in order to also work on the civic competence of the students. In addition, it has been

framed within the *eTwinning* program² and will be carried out in coordination with a school in Portugal since the Iberian lynx is an animal that lived throughout the peninsula. Likewise, it collaborates with the *Aldea* program³ that is part of the plans and programs for educational innovation proposed by the Junta de Andalucía.

Finally, it is important to remark that this project meets one of the goals established in the 2030 Agenda for Sustainable Development proposed by the UN General Assembly. This goal number 15 called Life on land has as its mission “to protect and restore terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and stop biodiversity loss” (United Nations, 2023).

3.2. Contextualisation

This project is intended for a bilingual school in Andujar, province of Jaen, in a neighbourhood where the socio-economic status of the families is middle-low. Near the city is the natural park of Sierra de Andujar that is characterized by its diverse flora and fauna. In addition, the city government together with the local schools strive every year to value the importance of the environment that surrounds them.

The students are in the 5th year of Primary Education. The group is formed by 25 students: 13 girls and 12 boys. Although every learner of the class is one of a kind, there are some students with specific characteristics that must be taken into special consideration:

- Hugo, a pupil with Specific Needs of Educational Support (SNES) who suffers from a mild hearing impairment.
- Lucía, a student with learning difficulties.
- Martín, a student that needs extra challenges.
- Adam, Bohdan, Badro and Huan, students from other nationalities: Polish, Ukrainian, Moroccan and Chinese, respectively.

After an initial evaluation, following the Common European Framework of Reference (CEFR), it has been stated that students present between an A1.2 - A2 level of English. In general, the students are sociable, with a great ability to express themselves. Their autonomous work is high when the tasks are of a low-medium level and when they are high, they only need

² eTwinning: European programme in the field of education, training, youth and sport that promotes and facilitates the exchange of ideas and work between the countries participating through ICTs.

³ Aldea: educational program proposed by the Junta de Andalucía that addresses environmental education for sustainability from a collaborative approach and adapted to the environment of the students.

some extra guidance. This autonomy is perceived with their initiative for the projects and their effort for troubleshooting. About their educational competence, they often interiorize the contents without difficulty even if it is necessary to reinforce their communicative competence when talking in non-native languages.

3.3. Objectives

All Spanish students must receive an education based on the objectives proposed in the different educational laws. This requirement guarantees equal opportunities in the teaching-learning process by facilitating that all students develop similar abilities. All the objectives are based on Organic Law 3/2020, of December 29, which modifies Organic Law 2/2006, of May 3, on Education and Royal Decree 157/2022, of March 1, which establishes the organization and minimum teachings of Primary Education at the state level. Likewise, each autonomous community adds to the objectives proposed by the central government, some objectives that are considered indispensable in the context of the community. To know these objectives, we should read the Decree 101/2023, of May 9, which establishes the organization and curriculum of the Primary Education stage in the Autonomous Community of Andalusia; this law adds the objectives ñ and o that are related to the teaching of Andalusian culture. Once the legislative framework on which this project is based has been established, it will be specified which objectives (now called specific competences) are set in each area.

3.3.1. *Natural Sciences*

The project contributes to the achievement of the following objectives in the area of Natural Sciences:

1. To use digital devices and resources safely, responsibly and efficiently, to search for information, communicate and work individually, in teams and in a network and to rework and create digital content according to the digital needs of the educational context.
2. To raise and respond to simple scientific questions, using different techniques, instruments and models of scientific thought, to interpret and explain facts and phenomena that occur in the natural, social and cultural environment.
3. To solve problems through design projects and the application of computational thinking, to cooperatively generate a creative and innovative product that responds to specific needs.

5. To identify the characteristics of the different elements or systems of the natural, social and cultural environment, analysing their organization and properties, and establishing relationships between them, to recognize the value of cultural and natural heritage, and undertake actions for responsible use, conservation and improvement.
6. To identify the causes and consequences of human impact in the environment, from the social, economic, cultural, technological and environmental points of view, to improve the ability to face problems, seek solutions and act individually and cooperatively in their resolution, and to implement sustainable lifestyles consistent with respect, the care and protection of people and the planet.

With the acquisition of these specific competences, students will be helped to use new technologies to search for information and communicate critically and solve problems cooperatively thanks to scientific research. It also helps them to be able to describe the environment that surrounds them, identifying and evaluating the ecological problems we face as a society.

3.3.2. Arts and Crafts

The project contributes to the achievement of the following objectives in the area of Arts and Crafts:

3. To creatively express and communicate ideas, feelings and emotions, experimenting with the possibilities of sound, image, body and digital media, to produce their own works.

With this specific competence it is sought that students are able to design and produce, using the medium they want, a document or audiovisual support so that they are able to inform and explain the information that has to be communicated at the end of the project.

3.3.3. Foreign Language

The project contributes to the achievement of the following objectives in the area of First Foreign Language:

1. To understand the general meaning and specific and predictable information of short and simple texts, expressed clearly and in the standard language, making use of various

strategies and resorting, when necessary, to the use of different types of support, to develop the linguistic repertoire and to respond to everyday communicative needs.

2. To produce simple texts in an understandable and structured way, through the use of strategies such as planning or compensation, to express brief messages related to immediate needs and respond to everyday communicative purposes.

3. To interact with other people using everyday expressions, resorting to cooperation strategies and using analogue and digital resources, to respond to immediate needs of their interest in communicative exchanges respectful of the rules of courtesy.

4. To mediate in predictable situations, using strategies and knowledge to process and transmit basic and simple information, in order to facilitate communication.

Thanks to the project and with the proposal of these specific competences, students will be able to discuss environmental problems, recommend, both orally and in writing, solutions to the problem, explain and describe the information obtained and communicate the results.

3.4. Contribution to the Key Competences

Throughout the Primary Education stage, students must work little by little on the acquisition of Key Competences. These competences are essential skills that guarantee success in the formative stage and in the subsequent challenges. At the end of the Primary stage, students must be evaluated according to their competence profile. That is why, throughout the course, they need to work on improving each of the skills. This project will contribute to the development of competences in the following ways:

- Competence in linguistic communication (LCC): this cooperative project is based on communication between peers and the search for information. Students will work on their reading comprehension by extracting useful information from various sources, dialoguing with each other to contrast the information found and then writing the report to communicate it to the audience.
- Plurilingual competence (PC): the project is part of a bilingual centre so students will use both Spanish and English to respond to the communicative needs of the project. Students should search for the information and present it using the foreign language.

- Mathematical competence and competence in science, technology and engineering (STEM): within this competence is the elaboration of projects. In addition, with the project we help preserve the environment and living beings, which is one of the descriptors of this competence.
- Digital competence (DC): new technologies are a very useful tool in the search for information. Students will do guided searches for information to solve the problem. Likewise, through the eTwinning programme they will communicate online with their classmates in Portugal, thus encouraging the participation of students in virtual school activities.
- Personal, Social and Learning to Learn (PSLL) competence: students work cooperatively recognizing and respecting other members of the group. Also, they should assume their individual responsibility when carrying out the project.
- Citizen competence (CC): one of the operational descriptors of this competence is the conservation of biodiversity from both a local and global perspective. Students will work on this content helping an endangered animal to survive and continue with its species.
- Entrepreneurial competence (EC): the cooperative work of the students will consist of giving original ideas and solutions in cooperation with the other members of the team. This development of ideas and solutions helps to foster students' creativity and strategical thinking.
- Competence in Cultural Awareness and Expression (CAE): students must develop a final product to communicate the information and expose it to other citizens. With this, they will elaborate an artistic proposal with which to experiment in a creative way and promote the achievement of this competence.

3.5. Basic Knowledge

According to the regional and state laws aforementioned, students must work on established contents during the Primary Education stage. Each area has specific basic knowledge that contributes to the achievement of specific competences and key competences. They also contribute to the development of assessment criteria. In addition, in each cycle basic

knowledge adapted to the cognitive abilities of the students is established, that is, the basic knowledge is expanded as the student advances in the educational stage. Below, the basic knowledge of the 3rd cycle of Primary Education extracted from the Order of May 30, 2023 of the Junta de Andalucía that will be worked on in the following project is presented.

3.5.1. *Natural Sciences*

In the area of Knowledge of the Natural, Social and Cultural Environment we find three blocks of content to which each basic knowledge is linked: A. Scientific Culture, B. Technology and digitalization and C. Societies and territories. The project contributes to the achievement of the following basic knowledge in the subject of Natural Sciences:

A. Scientific Culture

- CMN.3.A.1.3. Basic scientific vocabulary related to the different investigations.
- CMN.3.A.1.4. Promotion of curiosity, initiative, perseverance and sense of responsibility in the realization of different investigations, as well as in the reading of scientific informative texts. Trial and error in the scientific method.

B. Technology and Digitalization

- CMN.3.B.1.1. Digital devices and resources according to the needs of the educational context.
- CMN.3.B.1.2. Safe and efficient information search strategies on the Internet (valuation, discrimination, selection, organization and intellectual property).
- CMN.3.B.1.5. Restricted and secure digital resources and platforms for communicating with others. Digital etiquette, basic rules of courtesy, respect and strategies to solve problems in digital communication.
- CMN.3.B.2.1. Design project phases: identification, design, prototyping, testing, evaluation and communication.
- CMN.3.B.2.2. Phases of computational thinking (decomposing a task into simpler parts, pattern recognition and creation of simple algorithms for problem solving, etc.).

C. Societies and regions

- CMN.3.C.1.2. The climate and the planet. Introduction to atmospheric dynamics and the large climatic areas of the world. The main ecosystems and their landscapes.
- CMN.3.C.4.2. Eco-social responsibility. Eco-dependence, interdependence and interrelation between people, societies and the natural environment.

With these contents students will not only learn what a project is and its phases, but also the elements of the ecosystem composed of flora and fauna. In addition, they will learn how to conserve the biodiversity of their city as they investigate measures to solve a problem. In this way we collaborate in the development of the student's civic skills at the same time that they learn the contents established for the achievement of the competency profile.

3.5.2. Arts and Crafts

In the area of Art Education, we also find the basic knowledge divided into blocks: A. Reception and analysis, B. Creation and interpretation, C. Plastic, visual and audiovisual arts and D. Music and performing and performative arts. The aim of the project is for students to visually communicate the information collected. That is why the following content of block C has been selected in which the production of visual through non-virtual materials and through ICTs are included.

- EAR.3.C.5. Techniques, materials and computer and technological resources: their application for the capture, creation, manipulation and dissemination of plastic and visual productions.

3.5.3. Foreign Language

In this foreign language block, communicative skills are the basis for language learning. The contents worked on in the project contribute to the development of these linguistic skills by facilitating the lexicon and the relevant grammatical structures. As in the rest of the subjects, the basic knowledge is also divided into blocks: A. Communication, B. Plurilingualism and C. Interculturality. This project will only work with the basic knowledge of the communication block.

- LEX.3.A.2. Basic strategies for understanding, planning and producing short, simple and contextualized oral, written and multimodal texts.

- LEX.3.A.5. Contextual models and basic discursive genres in the understanding, production and co-production of oral, written and multimodal texts, short and simple, literary and non-literary: characteristics and recognition of the context, organization and structuring according to the internal structure.
- LEX.3.A.7. Basic lexicon of interest to students, related to personal identification, close interpersonal relationships, nearby places and environments, leisure and free time, healthy habits, daily life, highlighting the importance of sustainability and care for the environment.
- LEX.3.A.8. Basic sound, accentual, rhythmic and intonation patterns, and general communicative functions associated with these patterns. Basic phonetic differences of the language through groups of sounds, words and simple sentences. Words that share a common pattern, that rhyme the final phonemes. Songs, rhymes, enumeration, tongue twisters, basic jokes, poetry, accompanied by facial, body and mime gestures.
- LEX.3.A.9. Basic spelling conventions and meanings associated with graphic formats and elements.
- LEX.3.A.10. Basic conversational conventions and strategies, in synchronous or asynchronous format, to initiate, maintain and end communication, take and give the floor, ask and give clarifications and explanations, compare and contrast, collaborate, etc.
- LEX.3.A.13. Basic analogue and digital tools commonly used for oral, written and multimodal comprehension, production and co-production, and virtual platforms for educational interaction, cooperation and collaboration (virtual classrooms, videoconferences, collaborative digital tools, etc.) for learning, communication and project development with speakers or students of the foreign language.

3.6. Timing

This project will be carried out during the months of January, February and early March coinciding with the breeding season of the lynx. The sessions will take place on Fridays so that during the week they acquire the necessary input to better understand and carry out the research and elaboration of the project. The project implementation schedule is detailed below.

JANUARY				
Monday	Tuesday	Wednesday	Thursday	Friday
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
FEBRUARY				
Monday	Tuesday	Wednesday	Thursday	Friday
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
MARCH				
Monday	Tuesday	Wednesday	Thursday	Friday
		1	2	3
6	7	8	9	10

Table 1. Project Schedule

- Launch phase: sessions 1 and 2
- Implementation phase: sessions 7 and 8
- Research phase: sessions 3, 4, 5 and 6
- Presentation phase: session 9

3.7. Project: Red Alert!

3.7.1. Session 1

This session includes the launch phase of the project. Upon entering the classroom, students find at their tables a letter from the mayor of the city ([Appendix 1](#)). In it he asks for help to solve a problem: The lynxes of our Sierra are in danger and do not know how to help them. Once everyone has read the letter, the teacher throws some **driving questions**: What does the lynx live on? Have you seen any? How can we help them?

After the questions, brainstorm on the board about what students think they know about the lynx. Then, in mentimeter.com they write in groups of 5, a piece of advice that they would give to the mayor to save the lynx. At the end of the session, the whole group discusses whether they have chosen good advice or not.

- Resources: letter from the mayor, digital whiteboard, laptops.

3.7.2. Session 2

This session is the end of the project launch phase. During this session, the organization of the project is carried out. The session is divided into the following parts:

1. Selection of teams: the selection of teams will be made randomly. Students will extract from a glass a stick with a number, that number is their team number. There are 5 groups of 5 people.
2. Distribution of team roles: Each group has to choose a coordinator who distributes the tasks, a noise and volume controller while working in a group, a spokesperson who communicates with the teacher, a secretary who points out the relevant information and a moderator who supervises the speaking turns.
3. Selection of the final product: to adapt the teaching to the Universal Design for Learning (UDL) students will choose how they want to transmit the information. They can choose to do it with *Canva*, on cardboard as if it were a poster, make a brochure or record themselves on video.
4. Calendar: so that students know the deadlines of the project they will be given a schedule of this that can be slightly modified according to their learning rhythms.
5. Evaluation: in order to know what the project needs; the teacher will show the assessment rubrics so that the students are clear from the first moment what they have to do.

- Resources: smartboard.

3.7.3. Session 3

In this session, the research phase of the project begins. This phase will last for four sessions during which the teacher will act as support. Here, students must fill out a form ([Appendix 2](#)) to know what type of animal the lynx is. Students will have to find out:

- Where lynxes live.
- What kind of animal it is.
- Their physical characteristics.

- What they eat.
- Life expectancy.
- Their organization: in packs, solitary...
- If they are in danger.

At the end of the session, students fill out an exit ticket ([Appendix 4](#)) as a self-assessment and feedback for the teacher. In addition, with this same instrument they score the performance of their group, evaluating the effort and involvement of each member.

- Resources: laptop, worksheets.

3.7.4. Session 4

To continue the research phase, students will search the internet for information about the ecosystem of the Sierra de Andujar. To have an orientation on what to look for, they will be given a worksheet ([Appendix 3](#)) as in the previous session. On this sheet, students will have to answer questions about:

- Type of ecosystem and classification.
- Its flora.
- Its fauna.
- Biotope.
- Relationships in the ecosystem: producers, consumers and decomposers.

As in the previous session, students will fill out the exit ticket on what they have learned and score the group.

- Resources: Laptop, worksheets.

3.7.5. Session 5

Students will fill out a checklist, previously made by the student with the information of the requirements of the lynx, to check if the appropriate conditions exist in the ecosystem so that the lynx can live. In addition, they will have to identify the problems that exist (lack of resources, human action, etc.) and that must be solved so that the lynx can live properly in this ecosystem.

- Resources: laptop, checklist, sheets of previous activities.

3.7.6. Session 6

Students receive an email from their eTwinning colleagues in Portugal who are also working with the lynx. As there are lynxes in the town where our students live, the students from Portugal ask them to explain what their ecosystem is like. Our students have to answer the email with a brief explanation (there is / are) that contains the elements that favour that the lynx is in our mountain range (animals and vegetation). Before replying to the email, our students perform the spin the sheet activity ([Appendix 5](#)). They each have to write two ideas that can be used for the email. Then they will discuss in a group to choose the five best ones and finally answer to the email.

- Resources: laptop, spin the sheet worksheet.

3.7.7. Session 7

In this session the project realization phase begins. Students do an activity called 1-2/3-5 speaking. In this activity students will individually write 5 recommendations to help the lynx, based on the information from the research. Then, in pairs and trios they will discuss what are the best recommendations writing pros and cons. From these recommendations they have to choose 10 in threesomes and 7 in couples. Finally, the whole group discusses the same question and selects 10 final recommendations after completing an outline in which they talk about the advantages and disadvantages of each.

- Resources: sheet for 1-2/3-5 speaking

3.7.8. Session 8

This session is the last session of the realization phase. With the recommendations they have chosen in session 7, students begin to create the final product they have chosen. The teacher goes through the tables checking the veracity of the information.

- Resources: cardboard, markers, laptops, camera.

3.7.9. Session 9

This is the last session of the project and is included in the presentation phase. In this phase, the students will present their final product to the public. They will send their work to

the city council so that they can publish them on their website and that citizens know how to help the lynx. It will also be published on the school's website.

After sending and publishing their work, students will self-evaluate with a self-evaluation target and will also evaluate the work of each classmate in the group. Likewise, they will evaluate the work of other groups through a checklist.

- Resources: self-assessment target, co-assessment checklist and peer-assessment ([Appendices 6, 7 and 8](#)).

3.8. Assessment

The project evaluation process is divided into two parts: summative evaluation and formative evaluation. In summative evaluation, teachers and students know the degree of acquisition and internalization of concepts (Bennet, 2011), while in formative evaluation, the contents have been learned in-depth are verified and reviewed (Pérez Paredes & Rubio, 2005).

On the one hand, during the formative evaluation the teachers will check the work of the students in this project through direct observation and anecdotal record ([Appendix 9](#)). In addition, students will fill out an exit ticket in some sessions when leaving the classroom with which they will give feedback on their learning and understanding to the teacher. On the other hand, in summative assessment students will demonstrate what they have learned. Here the final product will be evaluated, that is, the teacher will use a rubric ([see appendix 10](#)) to decide the grade that the project deserves. In addition, so that students can evaluate what they have learned doing the project, they will fill out a self-evaluation target. Likewise, they will also act as teachers evaluating the work of their peers.

All evaluation instruments are intended to evaluate the evaluation criteria established in the educational laws. Based on the Order of May 30, 2023, the evaluation criteria of⁴ this project are:

	SPECIFIC COMPETENCE	ASSESSMENT CRITERIA
NATURAL SCIENCES	1. To use digital devices and resources safely,	1.1.a. Use digital resources according to the needs of the educational context in a safe and appropriate way, seeking information,

⁴ The evaluation criteria are presented in abbreviated form. To consult the full criteria, see: https://www.juntadeandalucia.es/boja/2023/104/BOJA23-104-00208-9731-01_00284747.pdf

	responsibly and efficiently.	communicating and working individually and as a team.
	2. To raise and answer simple scientific questions.	2.2.a. Search, select and start using mechanisms to contrast information, from different safe and reliable sources.
	3. To solve problems cooperatively through projects.	3.2.a. Design in a guided way solutions to the problems posed with simple techniques of design projects.
	5. To identify the characteristics of the different elements or systems of the natural, social and cultural environment.	5.1.a. Identify and describe the characteristics, organization and properties of the elements of the natural, social and cultural environment.
		5.3.a. Value, protect and show attitudes of conservation and improvement of natural and cultural heritage.
	6. Identify the causes and consequences of human intervention in the environment.	6.1.a. Identify sustainable lifestyles consistent with respect, care and protection of people and the planet.
ARTS AND CRAFTS	3. To creatively express and communicate ideas, feelings and emotions.	3.1.a. Produce basic own works, using some expressive possibilities of the body, sound, image and basic digital media.
FOREIGN LANGUAGE	1. To understand the general meaning and information of short and simple texts.	1.1.a. Recognize and interpret the global sense, as well as specific words and phrases of oral and written texts.
	2. To produce simple texts in an understandable and structured way to express messages.	2.1.a. Participate orally in simple and brief conversations, previously prepared in a guided manner.
		2.2.a. Get started, with help, in the writing of short and simple texts.
	3. To interact with other people.	3.1.a. Engage in short, simple dialogues and conversations.

	4. To mediate in predictable situations to process and transmit information.	4.1.a. Understand and transmit, in a guided manner, and with the help of various resources and supports, essential information.
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Table 2. Assessment Criteria

4. CONCLUSION

Throughout this work, different aspects of the CLIL and PBL methodology have been worked on. First, we began by briefly knowing what CLIL means, its origins and what fundamental characteristics a methodology must have to be considered within the CLIL approach. All this led us to the main characteristic of CLIL, being an approach that requires students to communicate, face cognitive challenges, learn culture and that all this is adapted to their context. Due to this last idea, it was also explained how this methodology is implemented in Spain and Andalusia, since, when adapting to the context of the students, in each region, CLIL is organized differently. Secondly, as this Master's Dissertation also implements Project-Based Learning, the origin of the methodology and its bases were briefly explained. In addition, the elements that characterize any project were highlighted, such as the teaching of real and meaningful content, the active participation of students, the development of skills such as those linked to teamwork or the need to expose the project to an audience. Finally, both methodologies were compared with the aim of finding common elements among which are the central role of the student, meaningful learning or the development of communication skills.

With the aim of putting all these ideas into practice, this dissertation proposes a didactic project where both methodologies are implemented in the same way and in a dialogic/integrated relationship. In this didactic proposal, we can find out how PBL is used to give a more real context to Content and Language Integrated Learning and thus increase the active participation of students along with their motivation. Likewise, through the projects, both low order thinking skills and high order thinking skills are worked on and consequently, reaching the cognitive challenge using scaffolding. Finally, it is important to emphasize that since communication skills are one of the main axes of CLIL, the project methodology encourages verbal exchange and the development of this oral skill, while working in groups to solve the problem posed.

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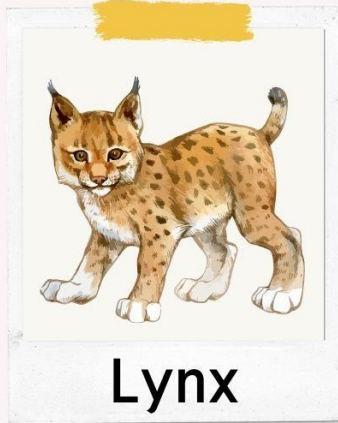
APPENDICES

Appendix 1: Letter from the Mayor



Group:

INFORMATION REPORT



Habitat

Diet

Classification

Appearance

Interesting Facts *(organization, life expectancy...)*

**Is it an endangered
animal?**



Appendix 3: Ecosystem worksheet

Group:

INFORMATION REPORT



Picture

Name of the ecosystem

Classification

(size, origin, biotope characteristics)

Animals

Vegetation

Relationships:

producers, consumers and decomposers

Appendix 4: Exit ticket



Exit Ticket

Name: _____
Date: _____

- What have I learnt? _____
- 3 things I have learnt _____
- Today I feel





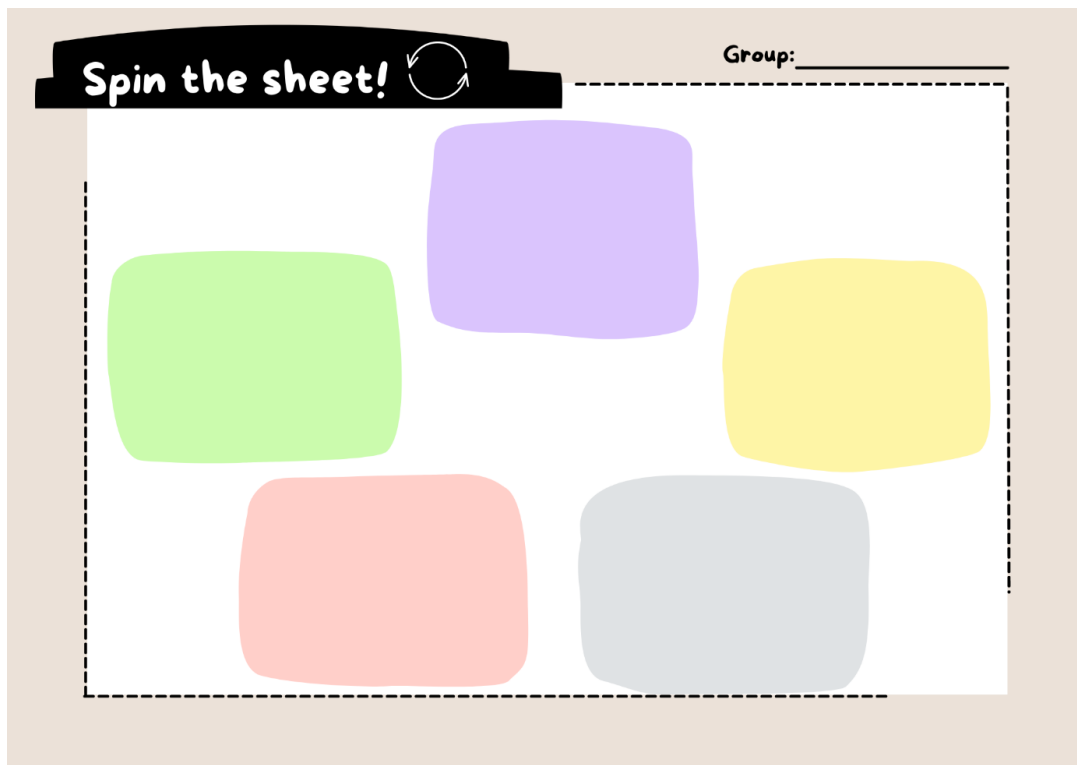
Exit Ticket

Name: _____
Date: _____

Students	_____	_____	_____	_____
Grade*				
Reason				

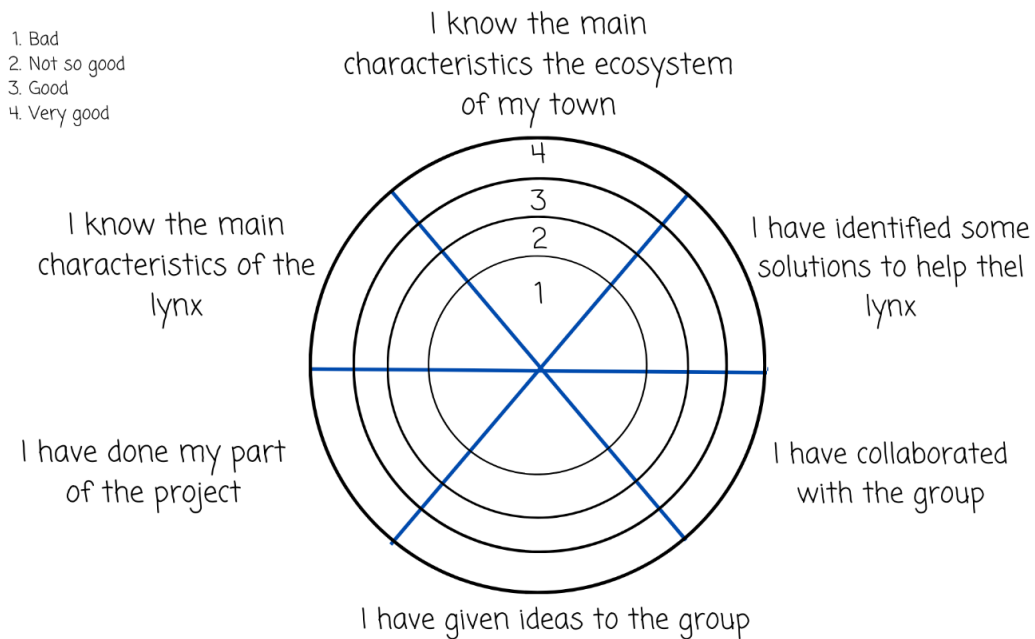
*1 (not contribute) - 5 (contributes a lot)

Appendix 5: Spin the sheet



Appendix 6: Self-assessment target

SELF-ASSESSMENT TARGET



Appendix 7: Co-evaluation



CO-ASSESSMENT



✓	✗	
☐	☐	He/she helped others when you needed him/her
☐	☐	He/she listened the ideas of others members.
☐	☐	He/she respected the others members.
☐	☐	He/she gave ideas.
☐	☐	He/she accepted others' ideas.
☐	☐	He/she supported the others' members.
☐	☐	He/she contributed to the project.

Appendix 8: Peer assessment



PEER ASSESSMENT



✓	✗	
☐	☐	The design is attractive
☐	☐	The ideas are clearly exposed
☐	☐	The information is accurate
☐	☐	All the information is pertinent
☐	☐	The project solve the problem

Appendix 9: Anecdotal Record

ANECDOTAL RECORD 	
DATE:	PARTICIPANTS:
DESCRIPTION OF THE EVENT:	
STRENGTHS:	NEEDS:
NOTES:	

Appendix 10: Rubric



ASSESSMENT RUBRIC



	4 EXCELLENT	3 GOOD	2 NOT SO GOOD	1 NOT ACHIEVED
COLLABORATION	Actively participates throughout the entire process	Collaborates regularly with the team	Shows little participation in team activities	Barely collaborates with the team in carrying out activities
RESPONSIBILITY	Know the responsibilities and performs all the tasks within the team	Know the responsibilities and perform most tasks	On many occasions he/she has not understood his/her functions	Has not identified responsibilities within the group
INFORMATION SEARCH	Actively participates in research and shares ideas	Usually actively participates in research and shares ideas	Sometimes actively participates in research and shares ideas	Never actively participates in research and shares ideas
ACCURACY	Shows project ideas in a correct and artistic way	Normally it shows the ideas correctly although with some failures	Some ideas are correct, but a large number of them are incorrect.	The project does not achieve the objectives. Ideas are wrong