

Master's Dissertation/
Trabajo Fin de Máster

TECHNO-CLIL AND STARS ORIENTATION. A DIDACTIC PROPOSAL FOR PRIMARY EDUCATION

Student: Franco Castaño, Diego

Supervisor: Dr. Carmen Plata Luque
Department: English Philology

July, 2021

Techno-CLIL and stars orientation. A didactic proposal for Primary Education

Abstract

This MA dissertation is a didactic proposal in which the students of 5th Primary Education conduct an investigation of a historical event, in this case, the discovery of America by Christopher Columbus. Thus, they study in-depth the topic of the universe and navigation, taking into account how the ships were oriented only by looking at the stars. But, to get this proposal, the teacher includes new technologies in CLIL lessons, promoting a more long-lasting learning process. In addition, the didactic proposal is designed taking into account a globalized methodology, in a way in which different subject areas are worked throughout a project. Also, the role of the students is proactive and participative, and the teacher acts as a guide to monitor them, solving possible doubts and giving them positive feedback to foster their motivation and desire to learn.

Key words: ICT, resources, CLIL, PBL, navigation, universe, America.

Resumen

El presente Trabajo Fin de Máster es una propuesta didáctica en la que los alumnos de 5º de Educación Primaria realizan una investigación acerca de un hecho histórico, más concretamente, el descubrimiento de América por Cristóbal Colón. De este modo, estudian en profundidad la temática del universo y el mundo de la navegación, aprendiendo cómo los barcos se orientaban en la antigüedad mirando las estrellas. Para conseguir este objetivo, el docente incluye las nuevas tecnologías en AICLE, promoviendo un proceso de aprendizaje más duradero. Además, la propuesta didáctica es diseñada optando por una metodología globalizadora, de manera que se trabajan diferentes áreas de conocimiento a lo largo del proyecto. Asimismo, el rol de los estudiantes es proactivo y participativo, mientras que el docente actúa como orientador, resolviendo posibles dudas y ofreciéndoles retroalimentación positiva para fomentar su motivación y sus ganas de aprender.

Palabras clave: TIC, recursos, AICLE, PBL, navegación, universo, América.

Table of contents

1. INTRODUCTION	4
2. THEORETICAL FRAMEWORK. NEW TECHNOLOGIES IN CLIL LESSONS	5
2.1. ICTs in CLIL lessons.....	5
2.2. Benefits and pitfalls	8
2.3. Types of ICT resources.....	11
2.4. The development of digital competence.....	14
2.5. ICTs in the Spanish law.....	15
3. DIDACTICAL PROPOSAL	17
3.1. Justification	17
3.2. Contextualization	18
3.3. Objectives.....	19
3.4. Competences.....	22
3.5. Contents	23
3.6. Timing	24
3.7. Methodology	25
3.8. Materials and resources	27
3.9. Attention to diversity	27
3.9.1. <i>Specific cases in the group</i>	28
3.9.2. <i>Reinforcement and extension activities</i>	29
3.10. Transversality.....	29
3.11. Interdisciplinarity	30
3.12. Assessment.....	31
3.13. Step-by-step planning	34
4. LIMITATIONS AND CONCLUSIONS.....	37
5. REFERENCES.....	39
6. ANNEXES	47
6.1. Annex I. Peer-assessment technique	47
6.2. Annex II. Self-assessment template.....	47
6.3. Annex III. Sessions of the project.....	48
6.4. Annex IV. Template of Quizlet about universe and navigation	66

6.5.	Annex V. Template of EdPuzzle about the discovery of America.....	67
6.6.	Annex VI. Template of Genially about the discovery of America.....	69
6.7.	Annex VII. Template of Plickers about the discovery of America.....	69
6.8.	Annex VIII. Template of Socrative about stars and constellations.....	70
6.9.	Annex IX. Template of Google Docs – The race star.....	71
6.10.	Annex X. Template of Google Docs – Navigating by the stars	72
6.11.	Annex XI. Template of Google Form about how ships were oriented by stars	73
6.12.	Annex XII. Template of Baamboozle about universe and navigation	74

1. INTRODUCTION

We live in a society marked by a globalized world in which the learning of a second language is in a continuous process of change, adapting to the actual needs of children. In this way, one of the principal aspects that should be adapted in schools is the methodology to teach a foreign language, being English the principal in our country, and with the goal of improving the level and fluency of children in this language.

In this sense, we focus our attention on the application of ICTs in CLIL lessons, with the aim of teaching content and language at the same time that the students can take advantage of several benefits related to this fact. For that reason, this proposal is based on implementing Techno-CLIL in the classroom, which is defined by Porcedda (2021) as the integration of CLIL and ICTs to satisfy the current necessity of children to study through modern tools. Thus, according to Goswami, Uddin, & Islam (2020: p.455), "Information and Communication Technology [ICT] has brought a robust change in society", and consequently, in Education. In fact, some authors defend ICTs have become an essential element of the education system since it is proved that ICTs enhances the quality of the process of teaching and learning (Saravanakumar, 2018; Horniakova, Arras, & Kozík, 2017). Due to its importance and utility nowadays, it has been developed a Common Framework of Reference for Intercultural Digital Literacies (CFRIDiL) which integrates the guidelines provided in the Common European Framework of Reference for Languages (CEFR) adapted to the digital competences needed for the citizens (Dig Comp 2.0), in which this project is based (Grazia et al., 2019).

In this sense, taking into consideration the explanations of Prensky (2001), current students in the classrooms are digital natives. Thus, they are really familiar with digital technology because they were born into an innate new culture, being able to think and learn in a different way than people who were not born around ICTs. For that reason, even though ICTs might be seen as difficult to integrate into a real classroom, the reality is that technology and digital competence can be worked with infants. For instance, one of the main differences between the past and the present time is based on the fact that formerly, all created by the students only could be shared with their teacher and the rest of their classmates. However, nowadays, technological resources allow students to be connected with other children and it is easier to show their works and creations to parents and the whole educative community

(Prensky, 2010). In essence, the use of new technologies benefit pupils learning in general terms but, also, promotes learner' language learning skills (Ahmadi, 2018).

2. THEORETICAL FRAMEWORK. NEW TECHNOLOGIES IN CLIL LESSONS

2.1. ICTs in CLIL lessons

ICTs stands for Information and Communication Technologies and can be defined in relation to education as a varied set of technological tools and resources aimed to process information in diverse senses including communicating, creating, disseminating, storing, and managing it (Tinio, 2003). In this context, the inclusion of ICTs in lessons changes the traditional environment of learning, applying new and efficient means in the methodology of schools (Zaidieh, 2012). For that reason, taking into consideration the classification of Bloom taxonomy (Bentley, 2010), Allan Carrington (2016) proposed a pedagogical wheel according to the network environment, providing several technological learning tools to achieve all levels (see *Figure 1*). Moreover, even if we connect ICTs resources with CLIL approach, we can realize that both share the same purpose, extrapolate the content and language learned in the school to the real world, taking advantage of it to face different daily-life situations as well as possible. Besides, digital technologies are amazing resources to implement through CLIL approach, in a way in which the students can learn in a motivating context, improving their desire to learn at the same time they can interact better with their classmates (Wojtowicz et al., 2011).

In line with the previous idea, in order to implement ICTs in a bilingual classroom, the organization of spaces is really important to facilitate the process of learning and teaching. Bearing this in mind, to squeeze the current state of the art, the sequence based on teacher-presentation, individual work, teamwork, and student-presentation should be advisable to allow students to collaborate among themselves, creating and sharing both content and language (Ball, Kelly, & Clegg, 2015). For that reason, an ideal classroom should have specific spaces to foster the interaction among the learners, the development of ideas, the investigation of topics, the exchange of thoughts, and the creation of projects taking into account all the previous process (López, & Rodríguez, 2017).

So, with the main aim of getting it, we cannot forget the importance of the furniture in the environment, due to the fact that light and child-size furniture can be an opportunity to be more careful, giving them perfect feedback about their movements and actions. Thereby, the furniture should be arranged in small places, providing spaces for the previous areas mentioned that are specialized to work. Besides, the tables can be arranged singly or in small groups, giving the students the opportunity to work on different groupings too (Lillard, 2012). Despite that, the special pandemic situation can cause situations in which the students do not have face-to-face lessons, but sessions are virtual thanks to collaborative tools such as Padlet, Google Docs, or Canva, among other applications.

In addition, there is a common agreement on the suitability of ICTs in education. Nevertheless, in order to implement ICTs properly in a school and achieve a fruitful use of them, we should take into consideration some fundamental key factors. Tearle (2004) organizes these requirements into practical and attitude and ethos factors. In relation to the first ones, it is indispensable the availability of technology, in a way in which both students and teachers need to have access to digital resources in the classroom. This need is underlined by United Nations thorough the 2030 Agenda for Sustainable development (United Nations, 2015, p.14), arguing that one of the main goals is to “build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation” and “significantly increase access to information and communication technology and strive to provide universal and affordable access to the Internet at least developed countries by 2020” (United Nations, 2015, p.21). Also, it is fundamental not only the access, but the proper management of the digital devices.

On the part of the teachers, they play a main role in this process, due to the fact that they have to guide pupils to facilitate their learning. For this aim, teachers may spend further time preparing themselves to reconceptualise learning and applying technology with confidence in the classroom. Continuing with practical factors, an adequate coordination and management is fundamental to organize as good as possible the use of these digital tools in the school (Kennewell, Parkinson, & Tanner, 2000). Concerning attitudinal and ethos factors, a great level of motivation from the teaching staff is key for the success of ICT tools (Preston, Cox, & Cox, 2000). They must strongly believe new technologies are a major opportunity for children to accelerate their learning and never consider them as a limitation.

2.2. Benefits and pitfalls

Scientific literature and legal frameworks are full of references to ICT in education and, consequently, there are diverse opinions on that respect. On this sense, Brit (2007) acknowledges researchers find both positive and negative aspects concerning ICTs that ought to be considered. In general terms, applying technology in the classroom is an excellent opportunity to foster several benefits for children. According to Lankshear & Knobel (2003), the students can improve their self-esteem and independence because they have to research, avoiding activities in which they do not need to think; their motivation increases to a larger extent due to the fact that, in the majority of cases, the teacher proposes them creative and innovative tasks; and they develop their critical thinking skills because they have to face new challenges, learning at the same time to use technological resources properly (Ribble, Bailey, & Ross, 2004). Furthermore, ICTs can foster others essential skills of the learners like their collaborative communication and their interpersonal competence. Thereby, the relationship between all classmates can improve, creating an enriching and positive atmosphere to learn because they need to cooperate among them, using dialogue and turn-taking to respect their ideas all the time (Livingstone, 2012).

However, as any approach applied in education, we can observe some drawbacks using digital technology in the process of teaching and learning. In this case, if we pay attention to the teachers, it is essential to avoid an excessive application of ICTs because interactivity is a great resource, not the main character of the school. In addition, to provide learners useful experiences with innovative technological applications where both content and language are integrated, teachers need an extra effort to get it. Also, concerning the role of the students, for them, technologies can be a distraction. On this matter, teachers should advice students that they have to use the appropriate resources, not researching in other sources of information. Thus, ICTs and digital technology can help them to learn, but they can learn in another way too. Besides, the pupils must make an effort throughout the application of ICTs in the classroom, avoiding situations in which they do not write or read because it is more difficult and hard for them (Bonilla, 2014). Apart from these reasons, we cannot forget the role of families because, before implementing ICTs in the school, teachers should be aware of the possibility of a social gap. Thus, if the students need to do activities outside the school, we can find the case in which some families have economic issues, and it can be difficult to provide each family with this type of support (Martínez, 2001).

Against this background, in order to alleviate possible drawbacks that the use of ICT may imply, some authors note relevant conditions to be met in order to take advantage of them fruitfully (Brit, 2007). For instance, as it is explained previously, for teachers, the inclusion of ICTs in the classroom can involve extra hours working and some students can distract easily. To avoid it, teachers support is indispensable, in a way in which they should know how to use the resources and applications before implementing it in the activities of lessons with the pupils. In this sense, teachers should put into practice methodologies in which they feel comfortable to prevent overwhelming situations. Besides, if the teacher is not motivated towards the session, it is impossible to attract attention of the students. In this situation, if they have vocation and desire to learn, they can train to acquire better the concepts, being ready to put into practice with the learners. Thereby, the support of teachers would be essential to help them to use ICTs in a functional and beneficial way, without possible inappropriate uses of it that could unleash a distraction for children (Postholm, 2003).

Moreover, another drawback is related to the necessary equipment to apply ICTs in the lessons. In this respect, we cannot design activities which involve this kind of resources if the school and the families do not have the sources to get them, even the current pandemic has exposed the increase of a digital divide. In this context, first of all, we have to know if there are enough money to buy the equipment, at the same time that we have to compare the number of technological tools with the number of the students. Thus, we can decide if it is possible to initiate the specific project (Zhao, & Czikó, 2001). According to Postholm (2003), if the conditions are difficult, the school can call for help to private institutions. Also, the organization to use ICTs materials in the schools is fundamental to allow all students to take advantage of it. Thereby, the teacher should take into consideration the importance of their educational intentions before booking the tools, and make use of appropriate guides provided by the government such as the Educative Digital Transformation (EDT) explained in the *Instrucción de 31 de julio, de la Dirección General de Formación del Profesorado e Innovación Educativa, sobre medidas de transformación digital educativa en los centros docentes públicos para el curso 2020/2021*, which inform them about the organization of schools, and learning processes.

Now, once we have analyzed general benefits and drawbacks in the classroom, we can put the spotlight on the use of ICT as a teaching-learning tool through a foreign language, there are again pros and cons although new technologies are commonly considered valuable and

innovative teaching educational tools. Taking into account the research of Levy (2009), this connection of approaches is transmitted better in multicultural contexts, when the students can compare different ways of learning around themselves. Nevertheless, it is clear that the inclusion of digital technologies in the school has been an explosion of resources in the education to provide it with several innovative and creative strategies to learn.

First of all, focusing on the benefits, they can be organized in two different sections, depending if they raise academic areas of the students or social and personal aspects. On the one hand, regarding the academic positive aspects, the use of ICTs is an excellent opportunity to allow students to participate more actively in the progression of the activities. It also provides the learners feedback in their diary progression, being able to review possible mistakes in real time. For that, it is closely related to their motivation to learn in a foreign language using ICTs. In addition, we can observe a cooperative and interactive learning, improving and reinforcing the relationships between children and teachers, at the same time the own students strengthen their interpersonal competence (Belda, 2020). Besides, considering the importance of acquiring both language and content, the input that offers ICTs to comprehend better the lessons visually has direct relation with the improvement of memory abilities of children to process the information (Gayeski, 1993). Furthermore, the development of the communicative skills should be highlighted. In this sense, digital technologies are really effective in order to improve the pronunciation and accuracy of the language, the reading abilities, the vocabulary acquisition, and the writing techniques of different type of texts (Nieto, 2018).

However, despite academic advantages are basic to promote the implementation of ICTs in CLIL sessions, we should highlight the human benefits to become aware of the integral development of the students. In fact, the students improve their self-esteem because they feel they can express better through a second language at the same time they go beyond in the knowledge of technology advances of the current society. Also, they can share their content and language with their families, trying to avoid a social divide (Belda, 2020). As the digital technology may imply teamwork, it is a good chance on fostering cooperative and collaborative skills of the learners, allowing them to enhance other implicit abilities such as comprehension, respect, turn-taking, or social awareness, among others (Peterson, 2010). And, obviously, the use of ICTs to learn a second language “helps students to engage in learning activities based on motivation, involving various educational strategies, including game-based learning, collaborative learning, and context-aware learning” (Liu, & Chu, 2010: 630). To sum up, all of

these benefits create an enriching and motivating atmosphere where the students assume a positive attitude towards the foreign languages; they feel better when they are learning in a rewarding atmosphere, being conscious of the strategies they apply to acquire better both content and language (Wilcox, 2009).

On the other hand, after analyzing the scientific literature, the possible drawbacks we can observe are really similar to the general disadvantages explained previously. For instance, there is an information overload for children when searching on the Internet, being difficult to discriminate the curated contents. In view of this situation, the teacher should teach them to discern between reliable and valid data with unverified and wrong information. It is really useful when they are learning a second language because the concepts should be acquired properly since the beginning, avoiding cases in which the students research flawed theory and ideas that can cause a negative process of learning (Palomar, 2009). Also, children can find problems to interpret the information written or listened in a foreign language, cutting and pasting all time the ideas to work with them (Blin, & Appel, 2011).

2.3. Types of ICT resources

Taking into account the endless possibilities of ICT resources in the education, in this section, we would like to classify them in three different types concerning their usefulness (Cacheiro, 2011). First of all, we can apply resources of information in which the students have to get information to address a specific topic. Digital technology is amazing to search the latest updated data and news, allowing the learners to be aware of any potential information. In this sense, the students have flexibility and accessibility to several data sources in the network (Medina, 2009). In this section, we can highlight the importance of visual resources such as videos repository or the use of graphic organizers to facilitate the comprehension of both content and language. Ultimately, according to Echevarría (2004), we live in a society with too many opportunities of information, causing difficulties to choose the appropriate information to extrapolate to our daily-life situations.

Moreover, apart from resources of information, children can take advantage of ICT materials of collaboration, being an excellent opportunity for students because they can work together in different contexts. Thus, children can work online at the same time using different computers or iPads, facilitating the progression of the projects. We can emphasize the

collaborative groups through applications in which the pupils can reflect and analyse several topics, sharing their ideas at the same time (Cacheiro, 2011). In detail, this kind of ICT resources have been developed successfully the last year due to the fact that a pandemic disturbed our lives. Thanks to them, the students could be connected from their homes, making easier the communication and cooperation to learn in difficult conditions. However, this link between education and ICT was unequal depending on the area of the world we live, as a result of the lack of classroom equipment and social and digital divide we can observe in the society (Lázaro, Ancheta, & Pulido-Montes, 2020).

The last type of ICT resources is related to the process of learning, with the main objective of facilitating the acquisition of knowledge, procedures, and attitudes of children. Despite digital technology has an informative and collaborative approach, it is essential to achieve a didactic purpose. In this case, we can underscore the materials' archives, whose main aim is based on providing the students several resources created by other teachers and learners about different topics. In addition, online quizzes are a useful source to assess the progression of children in a motivating and innovative way, avoiding the traditional tests in sheets of paper. Also, some technological tools offer the students the possibility of making video and voice records, being able to share with the rest of the educative community later. It is worthwhile to learn a second language too because they can listen their own voices in another language, improving their pronunciation and accuracy, among other aspects (Cacheiro, 2011).

Now, once we have analysed ICT resources taking consideration their main purpose, we can focus our attention on some specific materials. Thereby, videos are meaningful resources to put into practice in the classroom, even further in CLIL lessons because the teacher can provide them in different stages of the sessions to foster the desire to learn of the students (Keddie, 2014). Obviously, the teacher should bear the level of children and their previous knowledge to choose a suitable video in mind, being able to connect it with other subjects. In this matter, the teacher should be careful with subtitles, because in CLIL sessions, the learners should put their attention on both content and language, avoiding possible signs of distraction like this (Cinganotto & Cuccurullo, 2015). Also, if the students can create their own videos to explain a content using the second language, or to record a performance to share with the educational community, they can feel engaged towards the lessons at the same time they can improve their social and cooperative competences with their peers (Boyd, 2007).

On the other hand, closely related to the videos, nowadays, the technological applications are in the order of the day, and more specifically, mobile technology like tablets or smartphones. On the report of Boticki et al. (2015), it is proved that this kind of technology provides the students different ways to learn, creating an enriching atmosphere in the classroom and connecting their previous knowledge with new language and content. Besides, their level of motivation increases, focusing their attention on the explanations provided to do as well as possible with the technological tools. Thus, they can improve their autonomous learning because they acquire an active role in the process of learning (Gerger, 2014). Also, as it is explained previously, technological applications are synonym of cooperative learning, peer collaboration, and learning-centred processes, in a way in which the pupils can receive instant feedback and they need to communicate to do the activities properly (Jahnke, & Kumar, 2014). In general terms, according to Ota & de Araujo (2016), the main proposals of technological application in the classroom are the content sharing, the assessment, the improvement of motivation, and the increase of the time and learning spaces to interact among the students.

Apart from the above, when teachers apply ICT resources in the classroom, they ought to pay attention to the types of activities designed in their lesson plan, so as to attend all levels proposed by Bloom's taxonomy, taking into consideration the application of LOTS before HOTS to get a proper acquisition of thinking skills while they are doing the activities. Thereby, a diverse range of ICT resources should be proposed, including both tools for identifying and organizing information, but also, others in which the students have to create, design, reason, and hypothesize improving their creative thinking too (Bentley, 2010). For that, teachers can take as reference the pedagogy wheel to find concrete examples of it (see *Figure 1*).

Finally, we cannot forget the classroom equipment to guarantee a proper implementation of ICT resources in the school. According to Luo & Lei (2012: 77), the classroom equipment is the “stand-alone device that is used in traditional classrooms to facilitate the interaction between teachers and students in different class activities”, such as the interactive whiteboard, the touch screen computer, or iPads, among other tools. This equipment is really useful and indispensable to implement ICTs in the classroom because the teacher can design the material previously to show both content and language to the classmates, allowing them to manipulate items directly on the displays. In this sense, the students are the main characters of the sessions in which the teacher acts as a guide in the process of teaching and learning (Kennewell et al., 2007).

2.4. The development of digital competence

The connection between technologies and digital competence is unquestionable, although sometimes people have an erroneous point of view of it. Before explaining it in detail, it is really important to define the concept properly. Thus, the digital competence is “the confident, critical, and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion, and/or participation in society” (Redecker, 2017, p. 90).

Another fundamental aspect to guarantee a successful development of digital competence of the students is the role of the teacher. Firstly, according to Porcedda & González (2020), collaborative and cooperative teaching teams are essential, sharing knowledge and competences, making special attention to the relation between content and foreign language teachers. Thus, in order to provide children with the appropriate content, language, and abilities through ICTs, the teacher should be trained previously, being essential to get the learning outcomes proposed. In this sense, the teacher has to act as a guide during the process of teaching and learning, solving possible doubts, giving continuous feedback, and facilitating the necessary equipment to the students (Mahini, Forushanb, & Haghanic, 2012). Moreover, the selection of motivating and enriching digital technologies is key to allow children to improve their comprehension of difficult concepts, their design of the activities proposed, and their collaboration and cooperation with their classmates while they work in small heterogeneous groups (Mouza, & Lavigne, 2012).

Now, once the teacher is ready to put into practice ICTs in the classroom, we should highlight the importance of developing the digital competence of the students in a proper way. But, first of all, we need to comprehend this concept, being defined as the skills, knowledge, creativity, and attitudes that children should acquire to apply digital technologies in their process of learning, at the same time they extrapolate them to face different daily life situations in the society (Erstad, 2010). Thereby, quoting Hatlevik & Christophersen (2013), we can observe a link between an effectiveness implementation of ICT tools in the school and a proper development of the students’ digital competence. However, as it is explained previously, the role of teachers is fundamental to create a flattering learning environment (Krumsvik, 2008). In any case, the acquisition of digital competence is indispensable at the present time because

as fast as the world changes, technologies evolve and both teachers and students must be prepared for updating themselves continuously (Nawaz, & Kundi, 2010).

Occasionally, the digital competence is wrongly understood as exclusively presenting the students content and language through a technological presentation, or using the digital board. Nevertheless, teachers ought to offer input to learners, but they must also provide them several diverse opportunities to elaborate output through ICT devices. Thus, they can improve other communicative skills and social abilities at the same time (Gutiérrez, & Tyner, 2012). For achieving this purpose, apart from instructing students properly concerning an efficient use of ICTs, it is crucial to transmit a responsible use of them, demonstrating critical thinking when selecting information, noble-minded purposes when creating, and acting with respect when collaborating through technologies. This is not a simple undertaking at all and teachers require a good training at this field from the education degree (Johan, 2014).

2.5. ICTs in the Spanish law

Bearing the important role ICTs plays in society in many fields in mind, it becomes clear the necessity of fostering the digital competence and the responsible and efficient use of ICTs from the School. For that reason, some countries have included ICTs competences in their formal national curriculum, such as the United Kingdom and Canada, for instance (Tondeur, van Braak, & Valcke, 2007). However, in the case of Spain, if we focus our attention on the current law, the LOMLOE (2020), it is true that its intention is based on including ICTs in the classroom, but it should be included more specifically to put into practice in an integral and enriching way.

In this sense, in relation to LOMLOE (2020), it is explained that children live in a society in which the globalization and the impact of new technologies cause the necessities of learning and communicating in a different way, allowing the students to face different daily-life situations in which new technologies are present. Thus, the incorporation of ICTs to the educative system should bear all children in mind, personalizing the education and adapting it to the necessities and rhythm of each student. Thus, it is useful to reinforce and support the cases of low school performance, at the same time that children can learn with motivation, changing the traditional methodologies applied in the system. Besides, the inclusion of ICTs should be connected to the habits and experiences of new generations, reviewing the concept

of classroom and educative space. Moreover, the concept of digital competence is explained too as the creative, critical, and safe use of information and communication technologies to achieve objectives related to work, employability, learning, inclusion, and participation in society.

Moreover, taking into consideration the *Orden ECD/65/2015, de 21 de enero, por la que se describen las relaciones entre las competencias, los contenidos y los criterios de evaluación de la Educación Primaria, la Educación Secundaria Obligatoria y el Bachillerato*, the digital competence is explained in detail. Thereby, the educational system must adapt the literacy, reading, and writing to the current necessities caused by the inclusion of ICTs in the classroom. At the same time, teachers should promote the development of abilities related to the access of information, the procedure and use of them to communicate, the creation of contents, and the solutions to problems. In other words, the main purpose consists of developing an active, critical, and realistic attitude towards the new technologies, taking into account the importance of participation and cooperative work to maintain the level of motivation.

In the same vein, a similar situation takes place in Andalusia, where the *Orden de 15 de Enero de 2021, por la que se desarrolla el currículo correspondiente a la etapa de Educación Primaria en la Comunidad Autónoma de Andalucía, se regulan determinados aspectos de la atención a la diversidad, se establece la ordenación de la evaluación del proceso de aprendizaje del alumnado y se determina el proceso de tránsito entre distintas etapas educativas* develops the importance of implementing ICTs in schools but without giving specific details to implement it properly. Thereby, it is explained that didactic units of the different areas of Primary Education should include activities whose main aim is the motivation towards the inclusion of ICTs in the process of teaching and learning. Apart from this, there is a relationship between ICT resources with equal opportunities for all children. In this sense, the law advocates for guaranteeing a multidisciplinary approach in which digital technologies can support an excellent learning process, allowing students with special educative needs to take advantage of them too.

3. DIDACTICAL PROPOSAL

3.1. Justification

In this project, the main topic is related to the universe and the world of navigation, specifically about the discovery of America by Cristopher Columbus. For that, the inclusion of ICT resources is an excellent opportunity to implement the state of art of this approach in a real context with students, at the same time that CLIL approach is applied. In this sense, from our point of view, the center of interest and the methodology are very attractive for children, that can be positive for them because they improve their motivation in the process of learning and teaching. Besides, the process of learning is based on Project-Based Learning (PBL) approach too, allowing the students to learn different subjects simultaneously through active methodologies such as flipped classroom or gamification, among others. Also, we can use this topic as a tool for the improvement of values such as respect and fellowship, through several innovative dynamics and practical activities that enable learners to assimilate both contents and language in a deeper way.

On the other hand, this lesson plan belongs to the first curricular level, because it takes into account the *Real Decreto 126/2014, de 28 de febrero, por el que se establece el currículo básico de la Educación Primaria* and the *Decreto 181/2020, de 10 de noviembre, por el que se modifica el Decreto 97/2015, de 3 de marzo, por el que se establece la ordenación y el currículo de la Educación Primaria en la Comunidad Autónoma de Andalucía* for getting the main purposes of the stage of Primary Education:

- To provide an integral education that improves the personal development of children.
- To acquire the ability to think in a critical way.
- To help in the process of learning oral expression and comprehension, reading, basic competences about culture, society habits, creativity, and emotions.
- To promote the process of studying and working through artistic sense, creativity and affectivity.

In the same way, regarding the *Decreto 181/2020*, through our project, the students can develop several cultural, personal and autonomous objectives such as:

- To develop their self-confidence, their critical sense, their personal initiative, their entrepreneurial spirit and educative skills.

- To participate in a supportive, active and responsible way in the development and improvement of the social and natural environment.
- To know and respect the cultural reality of Andalusia, taking into account the knowledge and comprehension of this community as a cultural meeting.

3.2. Contextualization

This project is designed and structured to be implemented in a charter school with educative stages from Early Childhood Education until Baccalaureate. It is located in the center of Seville and it has a medium-high socioeconomic level, offering the students several meaningful cultural, sports and religious activities since the school have the appropriate facilities to get it. Thus, this school has a variety of services and resources due to the ample number of students and staff that attend it. There is a total of 700 students in the center, mainly residents of the nearby neighborhood, and a total of 78 teachers. Because of this, there are four educational lines of Primary Education, with 24 tutors divided between the classes. On the other hand, the school counts with 16 specialists of different areas, such as Music, English and Physical Education. There are also two psychopedagogists that attend to the different needs that students can present. Thanks to these professionals, it will be easier to adapt the activities accordingly to the diversity in the classrooms.

In terms of physical structures and existing resources, there are a diversity of spaces available to use, such as a library, laboratory, pavilion, multipurpose room and an open playground and grass area, for recess mainly. Apart from this, we can also find different structures related to external activities from the regular school schedule, like a cafeteria, a spiritual dialogue and meeting center. The rooms available for didactic purposes would be the music room, set up with a wide variety of instruments, the technology room, which counts with a set of thirty computers, and a therapeutic room, used by the psychopedagogists when it is necessary. Moreover, the classroom has a blackboard and a whiteboard, used alternatively for different purposes. There is also a personal library, with books pertaining to different topics of interest; a news mural, where students can put up recent news or announcements; a creative cupboard, filled with materials to use freely during any activity; a giant mural, decorated with the students' best works. Lastly, there are shelves on the back of the classroom for the students to keep their individual iPads, provided by the school yearly. These useful technological gadgets connect to the free school Wi-Fi.

Specifically, we focus our attention on the classroom of **Fifth of Primary Education**, that is formed by twenty-five students (eleven boys and fourteen girls) divided into small heterogeneous groups to work cooperatively improving their social skills at the same time. Also, it is fundamental to underline that there are two learners with ADHD (Attention-Deficit / Hyperactivity Disorder) in this classroom, whose inclusion is explained later in depth. In addition, with the main purpose of establishing a suitable task planning to get our objectives, it is fundamental to be aware of the level of development of learners at this age. Thereby, according to Anderson (2011), in relation to social and emotional development, at these ages, the students are generally happy, work properly in teams, develop a mature sense of right and wrong, and are sensitive to solve issues. Furthermore, taking into account communication and speech development, it is assumed that learners are expressive and talkative, they like to explain the reasons of facts, and are able to listen well. Finally, there is a progression in intellectual development, in a way in which the students are good memorizing facts, they are able to think abstractly, and they can concentrate for longer periods of time.

3.3. Objectives

First of all, based on the objectives established in the *Orden de 15 de enero de 2021*, in relation to the block of contents of this course, we propose the following objectives to be achieved in the development of the project (see *Table I*).

Social Sciences	▪ To develop enriching and useful strategies to foster individual and cooperative work, showing a responsible attitude with effort and personal initiative. ▪ To know and put into practice different strategies related to research information and communication through several sources. ▪ To value the importance of respecting the human rights, including dynamics to solve possible problems through dialogue. ▪ To discover the historic, social, and cultural identity of Andalusia and Spain through relevant events in the different ages of the history. ▪ To increase the interest to learn the way of living of past generations, valuing the importance of monuments and museums.
English	▪ To listen and comprehend messages in several communicative interactions, using them to do diverse tasks related to the previous experience. ▪ To express and interact in simple and habitual situations, cooperating and developing the interpersonal competence. ▪ To read and understand different types of text related to children's interests and experiences. ▪ To learn autonomously new technologies to get information and communicate in a foreign language. ▪ To value the second language as an excellent opportunity to communicate with people of other cultures, developing a positive attitude towards a multilingual diversity.
Mathematics	▪ To apply the mathematical knowledge to comprehend and value information about daily-life facts in a creative environment of researching and cooperative projects. ▪ To identify geometrical shapes in a natural, cultural, and real environment, analyzing the characteristics and attributes. ▪ To apply technological resources in the learning process, searching, analyzing, and selecting suitable information to create own projects.
Visual Arts	▪ To know and use the several possibilities of audio-visual and ICT resources, applying it to observe, research information, and elaborate own creations. ▪ To identify and recognize geometrical paintings in the environment, trying to represent them in artistic designs.
Physical Education	▪ To know their own bodies and their motor possibilities in the space. ▪ To apply ICT resources at the same time children are developing physical abilities.

Table I. Objectives of the project according to the Orden de 15 de Enero de 2021.

Furthermore, closely related to the previous objectives proposed in the law, the students can get other didactic content and language objectives through the implementation of this project (see *Table II*). Here, it is essential to mention the inclusion of the 4Cs framework. Thus, taking into account the symbiotic relationship between content learning and language learning, there are four contextualized building blocks of the CLIL approach such as content (subject matter), communication (language learning and using), cognition (learning and thinking processes), and culture (intercultural understanding and global citizenship (Coyle, Hood, & Marsh, 2010)).

Content objectives	- To understand the main features of the universe. - To know basic ideas of navigation. - To understand the relationship between the universe and navigation in the past. - To promote teamwork and cooperation. - To comprehend the importance of the discovery of America as a landmark for history. - To value the main role of Christopher Columbus in the discovery of America. - To develop an inquiry attitude. - To learn what are stars and constellations. - To recognize well-known constellations. - To relate geometrical figures with the shape of different constellations. - To identify the different parts of ships. - To research about how were old ships in the past. - To comprehend how old ships were guided by the North Star. - To make a responsible use of ICT resources in the classroom.		
Language objectives	Language functions	- To discuss ideas with other classmates and get into agreements. - To summarize information and get the main ideas.	
	Grammar structures	- To use the past simple to talk about past events. - To use the present simple to talk about current facts and characteristics. - To use adjectives to describe the ships. - To use WH questions to guide investigations.	
	Language skills	- To get information about the topic through texts and videos. - To write personal ideas about their own learning. - To write a script to plan a representation. - To comprehend the input given. - To present information to their classmates.	
	Key vocabulary	- To understand and use universe vocabulary: <i>stars, constellations, planets, North Star, meridians, parallels</i>. - To understand and use navigation vocabulary: <i>ship, mast, hull, North, South, East, West</i>. - To understand and use vocabulary about the discovery of America: <i>trip, colonization, slave, spices, ocean</i>.	
	Learning strategies	- To relate their previous knowledge with new information provided in the lesson. - To organize their previous ideas through graphic organizers. - To contrast ideas with their classmates. - To research about the topic. - To design vocabulary flashcards.	
	BICS	- To use turn-taking expressions. - To apply several expressions to ask questions and possible doubts. - To foster real English expressions between the teacher and the students.	
	CALP	Content specific language	To use words related to the characteristics of universe, navigation, and the discovery of America.
		General academic language	To apply linking words to justify their arguments: <i>by the fact, which means that, because, or however</i>.
Cognition objectives	- To develop their inquiring abilities to find further information to apply. - To demonstrate critical thinking when selecting information on the Internet. - To perform a brief role-play about the topic. - To improve their spatial orientation skills.		
Culture objectives	- To appreciate the importance of the discovery of America for the history of Spain. - To value the job of sailors in the past. - To contrast habits of life of Indians with our current culture.		

Table II. 4Cs objectives of the project.

3.4. Competences

For this project, we should take into account the following key competences detailed in the Spanish Educational System, as they are listed and described in the *Orden ECD/65/2015*, which describes the relationship between competences, contents, and criteria of evaluation in Primary Education. Thus, the key competences are the following ones:

- **Competence in linguistic communication (CLC):** It requires the development of various skills that range from orality and writing to forms of communication mediated by technology, where students are present interacting with others or audiovisual individuals. It is reflected in the activities continually since, in most of them, they are asked to express themselves through words to understand the instruction of different tasks, and to present their creations.
- **Mathematical competence and basic competences in science and technology (CMST):** It focuses on working basic geometrical shapes, trying to relate them with real world figures. Apart from this, the students are required to train the reasoning and problem-solving skills through the use of ICT resources.
- **Digital competence (DC):** It refers to the knowledge of the technological world, including different aspects of 'knowledge', 'know-how' and 'know to be' students should develop during their learning process. Among them, it stands the knowledge of main technological applications, the use of digital resources for communication and problem solving, and content creation.
- **Learning to learn (L2L):** Students should feel they are the center of the teaching-learning process. In this way, they should face the tasks with curiosity and motivation, and train different own strategies of comprehension, research autonomously, and find solutions to possible issues.
- **Sense of initiative and entrepreneurship (SIE):** It competence requires skills as the capacity of analysis and planning, organizing, decision-making, and critical thinking, among other aspects. Thus, it is crucial fostering the development of values such as creativity, self-awareness and self-esteem, effort, and entrepreneurship.
- **Cultural awareness and expression (CAE):** For understanding the present, students must learn about history, the past generations, their traditions, and their way of living.

Thereby, in this case, it is an excellent opportunity to compare the difference between past and current cultures.

- **Social and civic competences (SCC):** With this competence, students will work the collective well-being developing constructive communication, tolerance and empathy skills. These abilities are trained through teamwork, where pupils need to learn to dialogue assertively, be respectful towards others' ideas, and get into agreements.

3.5. Contents

Taking into consideration the didactic content objectives mentioned in the previous section, through the implementation of this project, the students can acquire the following didactic contents (see *Table III*):

Didactic contents	▪ Social Sciences ○ Main features of the universe. ○ Basic ideas of navigation. ○ Relationship between the universe and navigation in the past. ○ Discovery of America. ○ Role of Christopher Columbus in the discovery of America. ○ Stars and constellations. ○ Characteristics of old ships in the past. ○ Navigation of old ships in the past guided by the North Star. ▪ English ○ Performances of brief role-plays about the topic. ○ Different parts of ships. ▪ Mathematics ○ Relationship between geometrical figures and the shape of different constellations. ○ Inquiry attitude. ▪ Visual Arts ○ Responsible use of ICT resources in the classroom. ○ Critical thinking to select information on the Internet. ▪ Physical Education ○ Teamwork and cooperation. ○ Spatial orientation skills.
--------------------------	---

Table III. Didactic contents of the project.

Also, continuing with the legislative framework mentioned previously (*Orden de 15 de Enero de 2021*) and in close relation to the objectives pretended to reach by the end of the project, these are the contents that will be worked (see *Table IV*):

Social Sciences	▪ 1.2. Collection of information about the topic through different sources. ▪ 1.3. Use of ICTs to research information about the topic. ▪ 1.12. Use of strategies to foster the cohesion of the group and cooperative work. ▪ 2.1. The universe: characteristics. ▪ 2.2. The Solar system: stars and constellations. ▪ 4.2. The coexistence of three cultures. The discovery of America. ▪ 4.5. Creation of projects or presentations in groups about relevant events of characters. ▪ 4.6. Use of ICT resources to obtain and value specific information about the topic. ▪ 4.8. Knowledge of behaviour rules to visit cultural places.
English	▪ 1.1. Comprehension of basic information provided by audio-visual resources. ▪ 1.4. Active participation in performances. ▪ 1.7. Use of discursive structure to establish oral interactions. ▪ 2.3. Application of basic expressions in different contexts. ▪ 2.11. Design of projects about different topics through ICT resources.
Mathematics	▪ 1.12. Application of tools and technological resources in the learning process. ▪ 4.1. Flat figures: parts, relationships, and classification. ▪ 4.3. Identification of geometrical shapes according to the number of sides. ▪ 4.6. Creation of geometrical figures from others. ▪ 4.9. The position in the space. ▪ 4.20. Interest towards searching solutions to face situations related to the position in the space.
Visual Arts	▪ 1.6. Making photographs using different technological resources. ▪ 1.10. Responsible use of ICTs as materials to get information. ▪ 1.12. Use of digital resources to process videos, photographs, and texts. ▪ 1.17. Cooperation in the creative planning and development of group projects. ▪ 3.1. Identification of geometrical figures in the environment, relating to mathematical concepts.
Physical Education	▪ 1.4. Location and orientation in the space taking into account points of reference. ▪ 1.5. Space-temporal structures in motor actions with variations of trajectories. ▪ 1.8. General dynamic coordination. ▪ 1.18. Use of ICT resources to research new information. ▪ 3.2. Expressive techniques such as mimic. ▪ 3.8. Performance of imaginary or real role-plays. ▪ 4.10. Respect towards the rules, strategies, and the rest of the students.

Table IV. Contents of the project according to the Orden de 15 de Enero de 2021.

3.6. Timing

This didactic proposal is designed to be covered in a timespan of approximately two weeks, always depending on the different needs that may surge up with the students. In the first week, there are four sessions programmed, and the second week, the last three sessions,

including the school trip. The duration of each lesson is 55 minutes, except for the field trip, that is a half-day excursion because it is not near the school. Moreover, due to the implementation of flipped classroom approach, the students must work at home for preparing themselves for the class. This time will not exceed thirty minutes approximately. The timetable of the sessions is the following one (see *Table V*):

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1 st Week	Lesson I. <i>The world of the universe and navigation</i>	Lesson II. <i>Who is Christopher?</i>	Lesson III. <i>Sailing through stars</i>	Lesson IV. <i>Sailor, on board!</i>	
			<u>Flipped classroom</u>	<u>Flipped classroom</u>	
2 nd Week	Lesson V. <i>Old sailors for a day</i>		Lesson VI. <i>Travelling to the past (School trip)</i>		Lesson VII. <i>The performance</i>

Table V. Timetable of the lessons of the project.

3.7. Methodology

In order to comprehend better the structure of this lesson plan, we should be aware of the methodologies applied. Firstly, the project is based on the implementation of **CLIL approach**, being taught both content and a foreign language (English in this situation) twice. In other words, according to Marsh & Langé (2000), CLIL is a dual-focused education approach in which an additional language is used for the learning and teaching of both content and language. Apart from that, this innovation goes beyond, fostering a methodology in which the student has an active role in the process of learning, participating, and experimenting to learn. Besides, the language is not only focused on grammar and vocabulary, but enriching and authentic language are really important through everyday language and interactions among students in the classroom.

In relation to the previous approach, throughout the whole project, a **student-centered methodology** is put into practice. Thereby, the students are the main characters in the classroom, providing them multiple resources to experience and learn autonomously, in a way in which the teacher has a role as guidance to help the students. In other words, it is a form of active learning where students are engaged and involved in what they are studying, so that planning, teaching, and assessment revolve around the needs and abilities of the learners. The teacher shares control of the classroom, and the students are allowed to explore, experiment,

and discover on their own. Nevertheless, this fact does not mean that the students are in control of the lessons, but rather that they have some influence on the decisions that are being made about their learning. For that reason, the pupils are given choices and are included in the decision and making processes of the class (Brown, 2008).

Moreover, this project can be defined as a **Project Based Learning (PBL)** being a “student-centered form of instruction which is based on three constructivist principles: learning in context-specific, learners are involved actively in the learning process, and they achieve their goals through social interactions and the sharing of knowledge and understanding” (Kokotsaki, Menzies, & Wiggins, 2016, p. 267). Following this approach, diverse activities are proposed to end on the creation of a product, taking advantage of their previous work in which they have to research and participate actively to deal with an authentic challenge (Holm, 2011). Concretely, in this case, to get the final product, the students have to face different challenges regarding the universe and navigation until they have to perform a brief role-play, in which they have to put into practice all content and language learned previously.

Furthermore, regarding the importance of developing the interpersonal and communicative competences of children, we opt for implementing in the lessons a **cooperative methodology** too, being an excellent opportunity to improve basic values such as respect or fellowship, for instance (Johnson & Johnson, 1975). In this sense, to propose possible activities to do in a CLIL classroom through ICT resources, the teacher can adapt some activities to do in small heterogeneous groups, allowing the infants to interact with their classmates through dialogue to solve possible conflicts. Besides, the main proposal of this kind of activities is participating all the members of the group at the same time to get the main aim, avoiding situations in which only a specific learner has the main role and others do not do anything.

Apart from the above, we cannot forget the inclusion of **Flipped classroom methodology** in the classroom, in a way in which the students can learn some contents in their homes through videos or on-line resources. After it, they solve possible doubts, apply the concepts learned, and work in groups in the classroom. Thus, the pupils acquire an active and participative role in the class, becoming the main characters of their own learning process (Jensen et al., 2018). However, in this kind of approach, it is essential the steps to follow. For that reason, in words of Recino (2020), first of all, it is essential to prepare the students for the activity, giving them resources to take advantage of them at home. After it, children arrive to

class to engage and participate in the dynamics applying both content and language learned in the activities proposed previously. At the end, the teacher can provide them more proposals to extend their process of learning.

Finally, **gamification** should be included throughout CLIL methodology because the students can learn the content and a second language enjoying and engaging through activities and experiences based on playing. This approach is an innovative and original strategy to follow in this kind of lessons, allowing children to acquire pedagogical benefits such as the affirmation and development of the child's personality; the progression of physical abilities and basic skills; the development of significant learning; and the improvement of the interaction among students (Kapp, 2012). Bernardo, Gómez, and Vergara (2021) define it as taking advantage of elements and mechanics of games to get students' implication in the tasks. Thanks to it, positive attitudes and participation in the classroom grow in bilingual lessons. Besides, in this specific case, to promote gamification in the sessions, the teacher proposes several challenges and team work activities (Unir Revista, 2020).

3.8. Materials and resources

In this project, the resources required for learning process can be divided into classroom materials, technological tools and curricular materials designed by the teacher. In relation to the first ones, the computer, a projector, a screen, and iPads for all children are necessary. Also, the students can take advantage of several technological applications such as Mentimeter, Mindomo, Flipgrid, EdPuzzle, Quizlet, Genially, Plickers, Padlet, Socrative, Star Map Tracker Stargazing, Canva, Baamboozle, Geocaching, Deck Toys, Prezi, and Puppet Pals II. Besides, the use Microsoft Office is important too, highlighting PowerPoint, Word, Google Docs, and Google Forms. In addition, there are two videos from YouTube in relation to the discovery of America, and the explanation of stars and constellations. Finally, the teacher provides the students with sheets of paper, consumables, codes QR, and the templates of the different activities.

3.9. Attention to diversity

Attention to diversity is a crucial element of education to achieve an appropriate integration of all students in the classroom, since every single pupil presents differences in their

learning processes. This aspect is especially important in bilingual contexts due to the diverse levels of domain of the languages of the learners, a reason why educational centres should propose an inclusive, plurilingual, and multicultural programme (Martín, & Durán, 2019). Bearing the above in mind, it becomes clear the need to plan according to the specific students' necessities of the group and following a student-centred approach, as this proposal does. This is usually one of the main issues at this respect (Liasidou, 2013), but the present project aims to put always the spotlight on children, giving them a protagonist role both individually and in small heterogeneous groups so as to support the ones who need it.

3.9.1. Specific cases in the group

As it is mentioned in the contextualization of the group, there are two students diagnosed with ADHD. As teachers, our goal is to do an intervention in order to acknowledge ADHD as an opportunity instead of a problem or a disorder. It is relevant to have high expectations and to be pretty patient to get the most out of every child. Thus, according to Murdoch Children Research Institute (n.d.), we can focus our attention on different fields such as classroom disposition. In this sense, they should be sat in the first groups to be close to the teacher and to cooperate with the other students as well, trying to seat them with quiet and hardworking peers. Besides, we should avoid sitting them next to windows or doors because they can distract easily. In addition, their desks have to be really organized only with the necessary materials to work in class. To facilitate their inclusion in the classroom, the teachers should maintain visual and physical contact with them. It would be strongly recommended to call them by their names frequently and to talk them with short sentences and commands. Thereby, the instructions should be once at a time, short, specific, and in a positive language, being easier for them to keep the attention.

Furthermore, concerning the lesson structures, in relation to previous tasks, the teachers should give them dynamic explanations based also on non-verbal communication. For that, we can ask them if they understand the activities to promote their participation in an active way. Also, it can be useful for them to highlight relevant content and language to distinguish the main ideas. Apart from this, the teachers should avoid comments about the lack of attention or time devoted to the activities, in order to maintain their level of motivation. Another excellent idea is related with making short breaks between the activities, trying to eliminate possible fatigue. In this matter, the teacher can provide them short texts or videos, using other resources

as metronomes in class to work the rhythm. Obviously, the teachers must not forget the continuous positive feedback to motivate them.

Finally, cooperation work with their families is fundamental to make effective the intervention. Thus, some tips to put into practice are based on discussing the option with their parents and agree about the best strategy; explaining the dynamics applied in the classroom to support the rules at home; telling them how was their behavior each day to observe the progression; and guiding some families about how they should support the students to do their homework.

3.9.2. Reinforcement and extension activities

Furthermore, as any other project, the teacher should take into consideration situations in which there are students with more difficulties, and other pupils who finish earlier the activities than the rest of their classmates. For that reason, the connection between both kinds of learners is an excellent opportunity to propose them different strategies to work together, in a way in which the student with more necessities can take benefits from his/her peer. In this sense, taking into consideration the topic and methodology applied in this case, they can work together with the application Quizlet to review concepts of vocabulary. For that, the student who finish early can design some flashcards to practice with his/her classmate, playing different games to reinforce the acquisition of concepts too. Also, both students can design together graphic organizers to summarize the content of the unit, making use of applications like Mindomo or Mindmeister, among other tools.

Apart from that, according to the Article 13 of the *Orden de 15 de enero de 2021*, the school can offer a reinforcement and deepening programme to work during school hours to attend more concretely to the necessities of students with ADHD (in this specific case) or advantaged pupils. In addition, as it is explained in the previous section, their development in this programme will be analysed and communicated to the families periodically.

3.10. Transversality

In the implementation of this project, the participation and cooperation between language and content teachers is essential to guarantee a success. Specifically, in this case, apart

from the form teacher of the students (who teaches them Social Sciences, Mathematics, and Visual Arts, among other subjects), the English teacher and Physical Education teacher participate actively in the project. Thus, the role of both language and content teachers is fundamental to guide the process of learning and teaching, helping them, and solving possible doubts. For that, in this case, they work together in a network of collaboration, organizing meetings beforehand the first day of the week to avoid situations of overwhelm or lack of coordination.

In this sense, suitable communication between teachers is really important to follow the same structure and facilitate the comprehension of children (Coyle, Hood, & Marsh, 2010). In addition, according to Crandall (1994, p.256), “students cannot develop academic knowledge and skills without access to the language in which that knowledge is embedded, discussed, constructed, or evaluated; nor can they acquire academic language skills in a context devoid of content”. Finally, although the final objectives are common and they use common pedagogical strategies, the language teacher tends to concentrate more on accuracy and precision, while content teachers focus on fluent exchanges, promoting thematic connections between the subjects to facilitate the assimilation of the content (Pavón, & Ellison, 2013). In this context, taking into account the *Instrucción 15/2020, de 6 de julio de la Dirección General de Ordenación y Evaluación Educativa, sobre Auxiliares de Conversación para el curso escolar 2020/2021*, it is ideal the participation of a language assistant who collaborates with the teachers, promoting students’ oral skills in the second language, providing them accurate and real phonetic, and grammatical input in the foreign language that pupils can use as an example to follow.

3.11. Interdisciplinarity

This project is designed to allow children to learn both content and language throughout the lessons. However, in the section of contents, they can learn and work different subjects at the same time too, such as Social Sciences, Mathematics, Visual Arts, and Physical Education. Thus, the teachers are implementing a globalized approach in the classroom, based on a comprehensive education that improved all aspects of development and the personality of children. In order to get this aim, in this project, the practice establishes meaningful relationships between previous and new knowledge. In addition, the main aim of the teachers is based on allowing the learners to learn the parts from the whole (Medina & Mata, 2009). At

the same time, the students are deep into the implementation of a PBL, learning from different disciplines and applying what they learn to new situations. Besides, they can create specific input through a direct modelling and guided practice (McDowell, 2020).

3.12. Assessment

Concerning the assessment process of this project, first of all, we should be aware that it is global since it covers all dimension of the child's personality, continuous because it takes place during all phases of the teaching-learning process, and formative due to it analyses the performance and communicative competence of the students periodically. Also, the assessment should be summative, evaluating the students at the end of the project and comparing them with some specific standards (Rico Vercher, & Rico Pérez, 1996). In fact, all the activities proposed in the project have sense with this classification (see *Table VI*). In addition, direct observation is another important aspect to consider positively, due to the fact that teachers can take into account the effort of the students, their attitude, and aptitude in the lessons, their participation, the interaction with the classroom, and the motivation of the students, among other aspects (Croll, 1995).

	INITIAL ASSESSMENT	FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT
Session I	Competitive brainstorming	Creating maps	It's time to record!
Session II	Reviewing vocabulary	Happy learning + The treasure hunt	Plickers!
Session III	Creating our social wall	Learning constellations + Quiz time!	The star race
Session IV	Creating our social wall	Designing flashcards + Researchers for a day	A fishbowl
Session V	Baamboozle!	Creating our constellations	Orienteering race!
Session VI		Gymkhana in the museum	A summary of the trip
Session VII	Our experience	Creating our role-play online	Creating our role-play online

Table VI. Organization of activities in relation to the kind of assessment.

In relation to the initial assessment, it takes place during the first session of the unit so as to break the ice with some technological application and dynamic tasks and to assess the knowledge students have about the new topic. Thanks to this, the teacher can use this data as a starting point and could be analysed their progress during the project. In other words, it is a great opportunity to know the previous knowledge of the learners, allowing the teacher to be aware of their level, taking advantage of that to teach the rest of the content in greater depth (Gijlers & de Jong, 2005). Also, at the beginning or the end of some lessons, the teacher provides the students a technological game to review the content and vocabulary learned in a motivating way, playing through a competition in small heterogeneous groups in the majority of cases.

Furthermore, this project includes peer-assessment and self-assessment techniques, which are really useful since it is proved that involving children in their own learning process enhances teaching and learning effectiveness (Ndoye, 2017). In the case of peer-assessment, to help students to verbalize their thoughts and feelings about their classmates' performances, the teacher provides them a worksheet called "Sandwich-technique assessment" in which they have to complete it including first a positive aspect; after this, something they think it can be improved; and finishing with another positive idea (see *Annex I*). Thus, they can learn how to give feedback in a constructive and enriching way through some linguistic scaffolding to help them to assess their classmates (Ellis, 2009). On the other hand, regarding the self-assessment, to promote metacognition and facilitate students' comprehension of their learning acquisition, the teacher provides them a template in which they have to rate different assessment criteria related to the content and language studied in the lessons of the project. It is based on a scale of 1 to 5, where 1 is excellent and 5 is poor (see *Annex II*).

Finally, to assess better both content and language acquired in the lessons, as it is explained briefly previously, direct observation is fundamental to control the participation of the learners, at the same time that it is possible to assess their oral expression and comprehension. For that reason, the teacher can apply the application "ClassDojo" to assess the students, motivating their behavior and progression during the sessions. Also, the teacher designs and completes an estimation scale, assessing the level acquired in the assessment criteria (see *Table VII*). Taking into account the assessment criteria based on the *Orden de 15 de Enero de 2021*, the scale could be the following one:

Elements to consider	Assessment				Observations
	Achieved	In process	Not achieved	It is necessary more information or more time	
The student researches, selects, and organizes important information related to the main topic.					
The student applies ICT resources to elaborate projects with the specific vocabulary.					
The student values the cooperation and dialogue to solve possible conflicts in a teamwork.					
The student describes the stars and constellations.					
The student identifies important events in the history of Spain like the discovery of America.					
The student identifies the main characteristics of the cultures of the Medieval Age.					
The student respects an appropriate behaviour in a museum.					
The student understands simple messages in a foreign language.					
The student comprehends essential information in simple and short dialogues in a foreign language.					
The student interacts in simple and structured presentations about motivating topics in a foreign language.					
The student applies technological resources to solve problems.					
The student interprets situations using suitable geometric vocabulary, orienting in the space properly.					
The student uses the composition to create geometrical shapes from others.					
The student takes photos using appropriate technological tools.					
The student makes simple performances to familiarize with the main elements of it.					
The student analyses the reality taking into account geometrical figures.					
The student locates and orientates himself/herself in the space taking into account points of reference.					
The student prepares group performances interacting with his/her classmates.					
The student applies new technologies to get information.					
The student respects the rules, strategies, and the rest of the students.					

Table VI. Scale of estimation with assessment criteria based on the Orden de 15 de Enero de 2021.

3.13. Step-by-step planning

In this section, we can observe the design of the different sessions of this project in detail. The main purpose is based on understanding how ships could be guided in the old days only by looking at the stars. For that, in each lesson, children can learn little by little different content and language to acquire them better. Thereby, they need to understand who was Christopher Columbus, how was the discovery of America, what are the stars and constellations, and how were the ships in the past. Finally, they can join all the information to know that the North Star was the reference point to travel because they did not have the current technological tools. Finally, to get this aim, ICT resources are implemented in the classroom in a useful and responsible way. There are 7 sessions such as the following one (see the rest sessions in *Annex III*):

N° Session	1	Duration	55'
Title of the session	The world of the universe and navigation		
Didactic objectives			
Content objectives			
- To understand the main features of the universe. - To know basic ideas of navigation. - To understand the relationship between the universe and navigation in the past. - To promote teamwork and cooperation. - To make a responsible use of ICT resources in the classroom.			
Language objectives			
- To discuss ideas with other classmates and get into agreements. - To summarize information and get the main ideas. - To write personal ideas about their own learning. - To comprehend the input given. - To present information to their classmates. - To understand and use universe vocabulary: <i>stars, constellations, planets, North Star, meridians, parallels.</i> - To understand and use navigation vocabulary: <i>ship, mast, hull, North, South, East, West.</i> - To relate their previous knowledge with new information provided in the lesson. - To organize their previous ideas through graphic organizers. - To contrast ideas with their classmates. - To use turn-taking expressions. - To apply several expressions to ask questions and possible doubts. - To foster real English expressions between the teacher and the students.			
Cognition objectives			
- To develop their inquiring abilities to find further information to apply.			
Didactic contents			
- Main features of the universe. - Basic ideas of navigation. - Teamwork and cooperation.			

- Responsible use of ICT resources in the classroom.	
Key competences	
CLC, CMST, DC, L2L, SCC, SIE.	
Activities	
Activity 1 (10')	<i>Competitive brainstorming</i>
Grouping	Small heterogeneous groups
Description	In this activity, the teacher will explain the students what they are going to learn interesting concepts about the universe and navigation in this project. Then, the teacher will divide the students into four groups, and each group will choose a secretary, who will have an iPad with the technological application Mentimeter (https://www.mentimeter.com/) (designed to do a brainstorming in a visual way). After that, they have to say whatever that comes to their mind in relation to the topic, and the secretaries will take notes of that in the application (the teacher can support them translating words into English). Also, the teacher should design rules based on respect that would show to the students, because all ideas will be taken into account, and they should avoid to critic any idea, including all members of the group in the activity. Despite the teacher can modify the rules according to the necessities of the students, some examples could be “Raise your hand to talk”, “Never interrupt someone when talking”, “Wait for your turn”, or “Do not laugh at anyone’s ideas”, among others.
Activity 2 (25')	<i>Creating maps</i>
Grouping	Small heterogeneous groups
Description	In relation to the previous activity, now, with the same groups, the learners have to create a mind map in which they can connect the concepts that they said before and are written in Mentimeter. For that, they will apply the technological application Mindomo (https://www.mindomo.com/es/) in the iPads, creating their collaborative mind maps online. Besides, they will use different shapes, colors, and connectors in the text boxes.

Activity 3 (20')	<i>It's time to record!</i>
Grouping	Small heterogeneous groups
Description	Finally, in this session, the same groups of students will make use of the technological application Flipgrid (https://info.flipgrid.com/) in their iPads to finish the lesson. Thus, they have to record themselves in a short video with a duration of 1 minute more or less to explain their mind map. Also, they can add emojis, pictures, or stickers to improve the quality of the videos. In addition, thanks to this app, the rest of the groups can watch all the videos and write comments to give feedback to their classmates, being a clear example of a peer-assessment tool.
Resources	
The main resources needed to put into practice this session are the following ones: computer, projector, screen, iPads, sheets of paper, and the technological applications Mentimeter, Mindomo, and Flipgrid.	

4. LIMITATIONS AND CONCLUSIONS

The development of the present proposal has result really enriching due to the fact that CLIL and ICTs has been integrated in Techno-CLIL concept through active methodologies such as PBL, gamification, or flipped classroom, among others. Thus, a topic like the discovery of America, which sometimes seems to be boring for students, has turned into a complete and engaging project whose main goal is based on improving the level of motivation of children thanks to the active use of technological resources. As a consequence of attending to the affective filter, not only is increasing students' desire to learn, but also motivation benefits their cognitive skills, their autonomy towards learning, and overcoming their own limits (Sellan, 2017). In addition to the above, this project is excellent chance on promoting a responsible use of ICTs, developing the digital competence of the students at the same time they learn both content and language simultaneously.

Despite this proposal enriching value, some limitations have been found. First of all, it should be advisable to implement the project in a real context in order to analyse and assess the possible advantages and drawbacks and, above all, to realize which suggestions do not work as

designed. Unfortunately, putting the proposal into practice has been impossible for the author due to his labour situation. However, implementing and studying the results of this project can be a future line of investigation. Conversely, another possible limitation could be the different levels of domain of English and the economic and sociocultural environment in which the school is located. To avoid language issues, it would be advisable to create an adaptation of this project, including adequate linguistic scaffolding to the level of the students. This proposal, as it is explained in the contextualization, it is created putting the spotlight on a specific group of students with concrete features but, clearly, it will not work in the same way regardless the context.

Moreover, to ensure a successful performance of the proposal, it is more than necessary a perfect coordination and cooperation among teachers, which occasionally is found at schools. Without this, it is impossible to offer a suitable integration of all the contents, competences, and digital skills that are intended to achieve through the project. Despite this situation could be a limit in a way, it is too an opportunity to make the whole educational community join their efforts to work in the same direction with the aim of prepare students for the demands of the globalized world we live in.

5. REFERENCES

- Ahmadi, M.R. (2018). The use of technology in English language learning: A literature review. *International Journal of Research in English Education*, 3(2), 115-125.
- Anderson, M. (2011). *What every Fifth-Grade teacher needs to know: About setting up and running a classroom*. Massachusetts, US: Northeast Foundation for Children, Inc.
- Ball, P., Kelly, K., & Clegg, J. (2015). *Putting CLIL into practice*. Oxford: Oxford handbooks.
- Belda, J. (2020). El aprendizaje del inglés (L2) mediante herramientas digitales (TIC) por estudiantes mayores desde un modelo andragógico y heutagógico. *Tonos Digital: Revista de Estudios Filológicos*, 38(1), 1-24.
- Bentley, K. (2010). *The TKT Course CLIL Module*. Cambridge: Cambridge University Press.
- Bernardo, P., Gómez, A.I., y Vergara, D. (2021). Gamificación en aulas bilingües de Secundaria: Una experiencia educativa. *Revista del Departamento de Filología Moderna*, 29(1), 1-16.
- Blin, F., & Appel, C. (2011). Computer supported collaborative writing in practice: An activity theoretical study. *Computer Assisted Language Instruction Consortium (CALICO) Journal*, 28(2), 473-497.
- Bonilla, J.H. (2014). Ventajas y desventajas de las TIC en el aula. *Revista de Investigación #ashtag*, 4&5(1), 124-131.
- Boticki, I., Baksa, J., Seow, P., & Looi, C.K. (2015). Usage of a mobile social learning platform with virtual badges in a Primary school. *Computers & Education*, 86(1), 120-136.
- Boyd, D. (2007). The significance of social software. In T.N. Burg, & J. Schmidt (Eds.), *BlogTalks Reloaded: Social Software Research & Cases* (pp. 15-30). Norderstedt, Germany: Books on Demand.
- Brit, M. (2007). The advantages and disadvantages of using ICT as a mediating artefact in classrooms compared to alternative tools. *Teachers and Teaching: Theory and Practice*, 13(6), 587-599.
- Brown, J. (2008). Student-Centered Instruction: Involving students in their own education. *Music Educators Journal*, 94(5), 30-35.
- Cacheiro, M.L. (2011). Recursos educativos TIC de información, colaboración y aprendizaje. *Pixel-Bit. Revista de Medios y Educación*, 39(1), 69-81.
- Carrington, A. (2016). *The pedagogy wheel* [image]. Retrieved from https://designingoutcomes.com/assets/PadWheelV5/PW_ENG_V5.0_Android_SCRE EN.pdf

- Cinganotto, L., & Cuccurullo, D. (2015). The role of videos in Teaching and Learning Content in a Foreign Language. *Journal of e-Learning and Knowledge Society*, 11(2), 49-62.
- Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL. Content and Language Integrated Learning*. Cambridge: Cambridge University Press.
- Crandall, J. (1994). Strategic integration: Preparing language and content teachers for linguistically and culturally diverse classrooms. In J. Alatis (Ed.), *Strategic interaction and language acquisition: Theory, practice, and research* (pp. 255-274). Washington, DC: Georgetown University Press.
- Croll, P. (1995). *La observación sistemática en el aula*. Madrid: La Muralla.
- Decreto 181/2020, de 10 de noviembre, por el que se modifica el Decreto 97/2015, de 3 de marzo, por el que se establece la ordenación y el currículo de la Educación Primaria en la Comunidad Autónoma de Andalucía. Boletín Oficial de la Junta de Andalucía. Sevilla, 16 de noviembre de 2020, núm. 221, pp. 22-27.
- Echevarría, B. (2004). Formación e inserción profesional. En L. Buendía, D. González, y T. Pozo (Coords.), *Temas fundamentales en la Investigación Educativa* (pp. 241-298). Madrid: Muralla.
- Ellis, R. (2009). Corrective feedback and teacher development. *L2 Journal*, 1(1), 3-18.
- Erstad, O. (2010). Educating the Digital Generation. Exploring Media Literacy for the 21st Century. *Nordic Journal of Digital Literacy*, 5(1), 56-71.
- Gayeski, D. (1993). *Multimedia for learning: Development, application, evaluation*. Englewood Cliffs: Education Technology Publications.
- Gerger, K. (2014). *1:1 Tablet technology implementation in the Manhattan Beach Unified School District: A case study*. Long Beach: California State University.
- Gijlers, A. H., and de Jong, A. J. M. (2005). The relation between prior knowledge and students' collaborative discovery learning processes. *Journal of Research in Science Teaching*, 42(3), 264-282.
- Goswami, S., Uddin, M., & Islam, M. (2020). Implementation of Active Learning for ICT Education in Schools. *International Journal of Innovative Science and Research Technology*, 5(9), 455- 459.
- Grazia, M., Adami, E., Karatza, S., Marenzi, I., Moschini, I., Petroni, S., & Roca, M. (2019). *The Common Framework of Reference for Intercultural Digital Literacies (CFRIDI L). A comprehensive set of guidelines of proficiency and intercultural awareness in multimodal digital literacies*. Brussels: European Commission Programme Erasmus+

- Gutiérrez, A., & Tyner, K. (2012). Media Education, Media Literacy, and Digital Competence. *Comunicar*, 19(38), 31-39.
- [Happy Learning]. (2019, April 16). *Discovery of America. Educational Videos for Kids* [Video file]. Retrieved from <https://www.youtube.com/watch?v=MHIzfBNnhqI> [Accessed 03/07/2021].
- Holm, M. (2011). Project-Based Instruction: A review of the literature on effectiveness in Prekindergarten through 12th Grade classrooms. *Rivier Academic Journal*, 7(2), 1-13.
- Horniakova, V., Arras, P., & Kozik, T. (21-23 September 2017). *Challenges of Using ICT in Education*. In The 9th IEEE International Conference on Intelligence Data Acquisition and Advanced Computing Systems: Technology and Applications. Bucharest, Romania.
- [Innovación Educativa Andaluza]. (n.d.). *TDE. Transformación Digital Educativa* [Video file]. Retrieved from <https://www.youtube.com/watch?v=ij2RFtZeTUs> [Accessed 06/07/2021].
- Instrucción 15/2020, de 6 de julio de la Dirección General de Ordenación y Evaluación Educativa, sobre Auxiliares de Conversación para el curso escolar 2020/2021*. Dirección General de Ordenación y Evaluación Educativa. Sevilla, 6 de julio de 2020, pp. 1-19.
- Instrucción de 31 de julio, de la Dirección General de Formación del Profesorado e Innovación Educativa, sobre medidas de transformación digital educativa en los centros docentes públicos para el curso 2020/2021*. Dirección General de Formación del Profesorado e Innovación Educativa. Sevilla, 31 de julio de 2020, pp. 1-8.
- Jahnke, I., & Kumar, S. (2014). Digital didactical designs: teachers' integration of iPads for learning-centred processes. *Journal of Digital Learning in Teacher Education*, 30(3), 81-88.
- Jensen, J.L., Holt, E.A., Sowards, J.B., Heath, T., & West, R.E. (2018). Investigating strategies for pre-class content learning in a flipped classroom. *Journal of Science Education and Technology*, 27(6), 523-535.
- Johan, R. (2014). Teacher educators' digital competence. *Scandinavian Journal of Educational Research*. 58(3), 269-280.
- Johnson, D.W., & Johnson, R.T. (1975). *Learning together and alone: Cooperation, competition and individualization*. Englewood Cliffs, New Jersey: Prentice Hall.
- Kapp, K. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. San Francisco: John Wiley & Sons.

- Keddie, J. (2014). *Bringing online video into the classroom*. Oxford, UK: Oxford University Press.
- Kennewell, S., Parkinson, J., & Tanner, H. (2000). *Developing the ICT capable school*. London: Routledge Falmer.
- Kennewell, S., Tanner, H., Hones, S., & Beauchamp, G. (2007). Analysing the use of interactive technology to implement interactive teaching. *Journal of Computer Assisted Learning*, 24(1), 61-73.
- Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-Based Learning: A review of the literature. *Improving Schools*, 19(3), 267-277.
- Krumsvik, R.J. (2008). Situated learning and teachers' digital competence. *Education and Information Technologies*, 13(4), 279-290.
- Lankshear, C., & Knobel, M. (2003). New technologies in Early Childhood literacy research: A review of research. *Journal of Early Childhood Literacy*, 3(1), 59-82.
- Lázaro, L.M., Ancheta, A., & Pulido-Montes, C. (2020). The right to Education and ICT during COVID-19: An international perspective. *Sustainability*, 12(21), 1-16.
- Levy, M. (2009). Technologies in use for second language learning. *Modern Language Journal*, 93(1), 769-782.
- Ley Orgánica 3/2020, de 29 de diciembre, por la que se modifica la Ley Orgánica 2/2006, de 3 de mayo, de Educación (LOMLOE)*. Boletín Oficial del Estado. Madrid, 30 de diciembre de 2020, núm. 340, 122868-122953.
- Liasidou, A. (2013). Bilingual and special educational needs in inclusive classrooms: some critical and pedagogical considerations. *Support for Learning*, 28(1), 11-16.
- Lillard, A. (2012). Preschool children's development in classic Montessori, supplemented Montessori and conventional programs. *Journal of School Psychology*, 50(3), 379-401.
- Liu, H., & Chu, Y. (2010). Using ubiquitous games in an English listening and speaking course: Impact on learning outcomes and motivation. *Computers & Education*, 55(2), 630-643.
- Livingstone, S. (2012). Critical reflections on the benefits of ICT in Education. *Oxford Review of Education*, 38(1), 9-24.
- López, M., & Galván, C. (2017). Creating materials with ICT for CLIL lessons: A didactic proposal. *Procedia. Social and Behavioural Sciences*, 237(1), 633-637.
- López, S., & Rodríguez, J. (27-29 September 2017). *Videogames and Education: Reflection from a review of International research carried out between 2010 and 2016*. In *Actas 14th IARTEM International Conference on Textbooks and Educational Media*. Lisbon, Portugal.

- Luo, H., & Lei, J. (2012). Emerging Technologies for Interactive Learning in the ICT Age. In J. Jia (Ed.), *Educational Stages and Interactive Learning: From Kindergarten to Workplace Training* (pp. 73-91). United States: Information Science Reference.
- Mahini, F., Forushanb, Z.J., & Haghanic, F. (2012). The importance of teacher's role in technology-based education. *Procedia – Social and Behavioral Sciences*, 46(1), 1614-1618.
- Marsh, D., & Langé, G. (2000). *Using languages to learn and learning to use languages*. Jyväskylä, Finland: UniCOM, University of Jyväskylä on behalf of TIE-CLIL.
- Martínez, J. (2001). La activación y mantenimiento de la motivación durante el proceso de enseñanza-aprendizaje de una lengua extranjera. *Didáctica (Lengua y Literatura)*, 13(1), 235-261.
- Martín, E., & Durán, R. (2019). La inclusión educativa en los programas bilingües de Educación Primaria: Un análisis documental. *Revista Complutense de Educación*, 30(2), 589-604.
- McDowell, M. (2020). *Using PBL to encourage interdisciplinary work*. Retrieved 7th July 2021 from <https://www.edutopia.org/article/using-pbl-encourage-interdisciplinary-work>
- Medina, A. (2009). Metodología didáctica para el desarrollo de planes de estudio en el EEES. En A. Medina, M.L. Sevillano, y S. de la Torre (Coords.), *Una universidad para el siglo XXI. Espacio Europeo de Educación Superior (EEES). Una mirada transdisciplinar, ecoformadora e intercultural* (pp. 195-212). Madrid: Universitat.
- Medina, A., y Mata, S. (2009). *Didáctica General*. Madrid: Pearson Editorial.
- Moore, P., & Lorenzo, F. (2007). Adapting Authentic Materials for CLIL Classroom: An Empirical Study. *Vienna English Working Papers* 16(3), 28-36.
- Mouza, C., & Lavigne, N.C. (2012). *Emerging technologies for the classroom: A learning sciences perspective*. New York: Springer.
- Murdoch Children Research Institute. (n.d.). *The Children's Attention Project (CAP). Tips for managing ADHD in the classroom*. Retrieved 21st June 2021 from <https://www.education.vic.gov.au/Documents/school/principals/participation/tipsmanagingadhdinclass.pdf>
- [Mizyaka Dizyaka ENG]. (2019, August 21). *What are stars and constellations? Why questions for kids. Educational cartoon*. [Video file]. Retrieved from <https://www.youtube.com/watch?v=adKrNga8-Qs> [Accessed 03/07/2021].
- Nawaz, A., & Kundi, G.M. (2010). Digital literacy: An analysis of the contemporary paradigms. *International Journal of Science and Technology Education Research*, 1(2), 19-29.

- Ndoye, A. (2017). Peer/Self-Assessment and Student Learning. *International Journal of Teaching and Learning in Higher Education*, 29(2), 255-269.
- Nieto, E. (2018). Exploring CLIL contribution towards the acquisition of cross-curricular competences: A comparative study on digital competence development in CLIL. *Revista de Lingüística y Lenguas Aplicadas*, 13(1), 75-85.
- Orden ECD/65/2015, de 21 de enero, por la que se describen las relaciones entre las competencias, los contenidos y los criterios de evaluación de la Educación Primaria, la Educación Secundaria Obligatoria y el Bachillerato. Boletín Oficial del Estado. Madrid, 29 de enero de 2015, núm. 25, 6986-7003.
- Orden de 15 de enero de 2021, por la que se desarrolla el currículo correspondiente a la etapa de Educación Primaria en la Comunidad Autónoma de Andalucía, se regulan determinados aspectos de la atención a la diversidad, se establece la ordenación de la evaluación del proceso de aprendizaje del alumnado y se determina el proceso de tránsito entre distintas etapas educativas. Boletín Oficial de la Junta de Andalucía. Sevilla, 18 de enero de 2021, núm. 7, pp. 2-223.
- Ota, M.A., & de Araujo, C.F. (9-11 April 2016). *M-Learning challenges in teaching crosscutting themes in the education of young people and adults*. In 12th Edition International Conference Mobile Learning. Vilamoura, Portugal.
- Palomar, M. (2009). Ventajas e inconvenientes de las TIC en la docencia. *Revista Digital de Innovación y Experiencias Educativas*, 1-8.
- Pavón, V., & Ellison, M. (2013). Examining teacher roles and competence in Content and Language Integrated Learning (CLIL). *Linguarum Arena*, 4(1), 65-78.
- Peterson, M. (2010). Learner participation patterns and strategy use in “second life”: An exploratory case study. *ReCALL*, 22(3), 273-292.
- Porcedda, M.E., & González, J. (2020). Teacher training in Content and Language Integrated Learning: lacks and suggestions from a systematic literature review. *Enseñanza & Teaching*, 38(1), 49-68.
- Porcedda, M.E. (2021). Educational prospects of Techno-CLIL strategies and implementation in the subject of History for the last triennium of Secondary schools. *UTE. Revista de Ciències de l'Educació*, 3(1), 79-84.
- Postholm, M.B. (2003). *“I can't find my grandma on the Internet!” A study of project work using ICT as a mediating artefact*. Doctoral dissertation, NTNU Trykk, Trondheim.
- Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*, 9(5), 1-6.

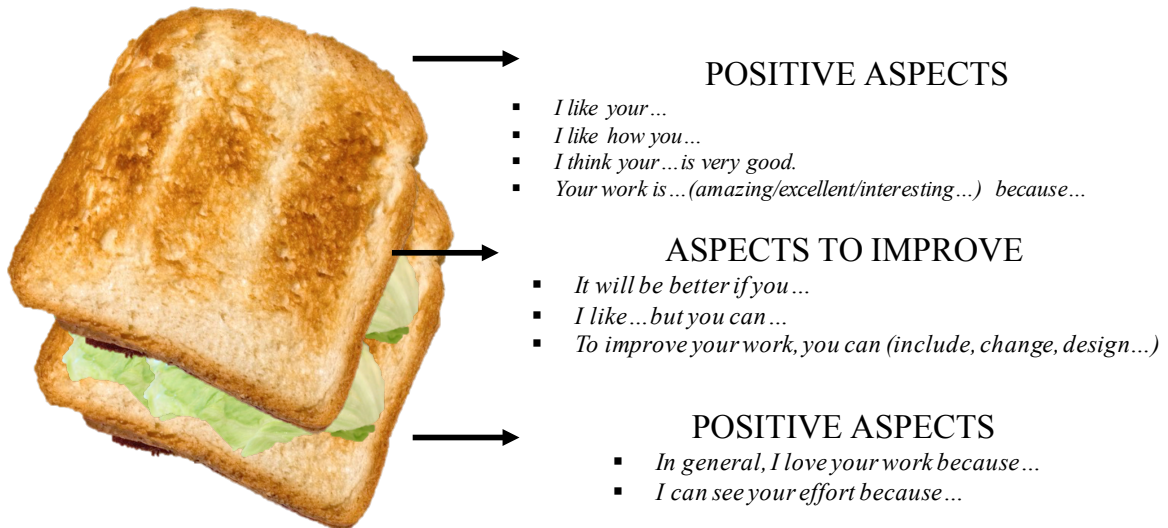
- Prensky, M. (2010). *Teaching digital natives: Partnering for real learning*. Thousand Oaks, California: Corwin SAGE Company.
- Preston, C., Cox, M., & Cox, K. (2000). *Teachers as innovators: An evaluation of the motivation of teacher to use information and communications technology*. South Croydon: Miranda Net.
- Real Decreto 126/2014, de 28 de febrero, por el que se establece el currículo básico de la Educación Primaria*. Boletín Oficial del Estado. Madrid, 1 de marzo de 2014, núm. 52, pp. 19349-19420.
- Recino, U. (2-4 March 2020). *Flipped classroom and CLIL to teach English and subjects related to teaching practice*. In 14th Edition International Technology, Education, and Development Conference. Valencia, Spain.
- Redecker, C. (2017). *European Framework for the Digital Competence of Educators (DigCompEdu)*. Luxembourg: Publications Office of the European Union.
- Ribble, M., Bailey, G., & Ross, T. (2004). Digital citizenship: Addressing appropriate technology behavior. *Learning & Leading with Technology*, 32(1), 7-12.
- Rico Vercher, M., & Rico Pérez, C. (1996). Testing and assessment. In N. McLaren, D. Madrid, & A. Bueno (Eds.), *A handbook for TEFL* (pp. 465-492). Alcoy: Marfil,
- Saravanakumar, A. (2018). Role of ICT on Enhancing Quality of Education. *International Journal of Innovative Science and Research Technology*, 3(12), 717-719.
- Sea History for Kids. (2021). *Navigating by the stars*. Retrieved 3rd July 2021 from <https://seahistory.org/sea-history-for-kids/navigating-by-the-stars/>
- Sellan, M.E. (2017). Importancia de la motivación en el aprendizaje. *Sinergias Educativas*, 2(1), 13-19.
- Tearle, P. (2004). A theoretical and instrumental framework for implementing change in ICT in Education. *Cambridge Journal of Education*, 34(3), 331-351.
- Tinio, V. (2003). *ICT in Education*. Manila: E-ASEAN Task Force.
- Tondeur, J., van Braak, J., & Valcke, M. (2007). Curricula and the use of ICT in education: Two worlds apart? *British Journal of Education Technology*, 38(6), 962-976.
- Unir Revista. (2020). *Ejemplos de gamificación en el aula y herramientas para ponerlo en práctica*. Recuperado el 7 de julio de 2021 de <https://www.unir.net/educacion/revista/ejemplos-gamificacion-primaria/>
- United Nations. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. New York: General Assembly of the United Nations. Retrieved at

[https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E%20%20\(pag%2021](https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E%20%20(pag%2021)

- Wilcox, K.C. (2009). The impact of student beliefs on the effectiveness of video in developing cross-curricular competence. *Computer Assisted Language Instruction Consortium (CALICO) Journal*, 27(1), 91-100.
- Wojtowicz, L., Stansfield, M., Connolly, T., & Hainey, T. (20-21 October 2011). *The impact of ICT and games based learning on Content and Language Integrated Learning*. In 4th Edition International Conference “ICT for Language Learning”. Florence, Italy.
- Zaidieh, A. (2012). The use of social networking in education: Challenges and opportunities. *World of Computer Science and Information Technology Journal*, 2(1), 18-21.
- Zhao, Y., & Czikó, G.A. (2001). Teacher adoption of technology: A perceptual control theory perspective. *Journal for Technology and Teacher Education*, 9(1), 5-30.

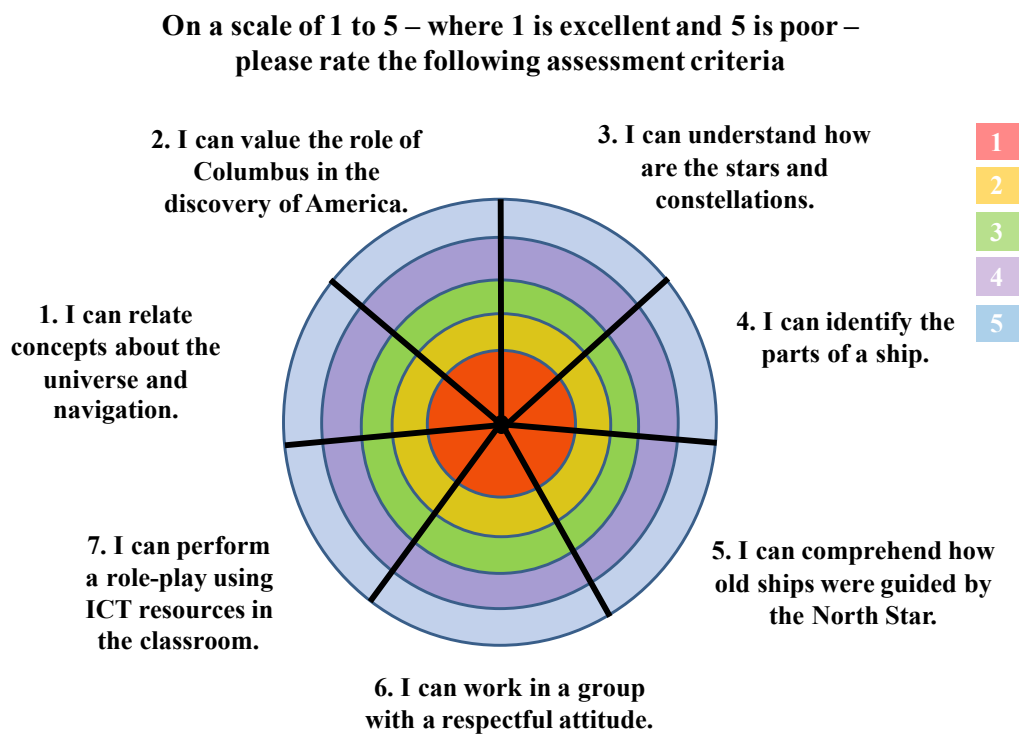
6. ANNEXES

6.1. Annex I. Peer-assessment technique



Source: Original material

6.2. Annex II. Self-assessment template



Source: Original material

6.3. Annex III. Sessions of the project

Nº Session	2	Duration	55'
Title of the session	Who is Christopher?		
Didactic objectives			
Content objectives			
- To promote teamwork and cooperation. - To comprehend the importance of the discovery of America as a landmark for history. - To value the main role of Christopher Columbus in the discovery of America. - To demonstrate critical thinking when selecting information on the Internet. - To develop an inquiry attitude. - To make a responsible use of ICT resources in the classroom.			
Language objectives			
- To discuss ideas with other classmates and get into agreements. - To use the past simple to talk about past events. - To get information about the topic through texts and videos. - To comprehend the input given. - To understand and use vocabulary about the discovery of America: <i>trip, colonization, slave, spices, ocean.</i> - To contrast ideas with their classmates. - To research about the topic. - To use turn-taking expressions. - To apply several expressions to ask questions and possible doubts. - To foster real English expressions between the teacher and the students. - To apply linking words to justify their arguments: <i>by the fact, which means that, because, or however.</i>			
Cognition objectives			
- To develop their inquiring abilities to find further information to apply. - To demonstrate critical thinking when selecting information on the Internet.			
Culture objectives			
- To appreciate the importance of the discovery of America for the history of Spain.			

- To contrast habits of life of Indians with our current culture.	
Didactic contents	
- Relationship between the universe and navigation in the past. - Teamwork and cooperation. - Discovery of America. - Role of Christopher Columbus in the discovery of America. - Critical thinking to select information on the Internet. - Inquiry attitude. - Responsible use of ICT resources in the classroom.	
Key competences	
CLC, CMST, DC, L2L, SCC, CAE.	
Activities	
Activity 1 (10')	<i>Reviewing vocabulary</i>
Grouping	In pairs
Description	In order to facilitate the acquisition of vocabulary in English about the main topic of the session, the teacher will divide the students in pairs to learn different concepts through the technological application Quizlet (https://quizlet.com/ 9zmcsv?x=1jqt&i=2pdn5z) (see <i>Annex IV</i>). Thereby, the teacher will show them some vocabulary in the projector, allowing the students to listen the words and relate with a picture at the same time. In this case, the flashcards will be created by the teacher but in following sessions, the learners will be in charge of it. After it, each pair will have an iPad with the application and they will play different games proposed to reinforce the concepts.
Activity 2 (10')	<i>Happy learning!</i>
Grouping	Individual
Description	Once the pupils have acquired better the vocabulary related to the main topic, each student will have an iPad to watch a video about the history of Christopher Columbus. However, they will use the

	technological application EdPuzzle (https://edpuzzle.com/media/60deef96bd87244158d5251b) to answer different questions at the same time, being necessary to continue watching the video (see <i>Annex V</i>). In case that same students need guidance, they can read subtitles to facilitate their comprehension skills in the foreign language. <i>Video:</i> https://www.youtube.com/watch?v=MHIzfBNnhqI (Happy Learning – Discovery of America).
Activity 3 (25')	<i>The treasure hunt</i>
Grouping	Small heterogeneous groups
Description	In this activity, the students will improve their knowledge about Christopher Columbus and the discover of America. For that, the teacher will divide them into small heterogeneous groups and he/she will provide them an iPad and a presentation designed with the technological application Genially (https://view.genial.ly/60e029a85d67950daddb0090/interactive-content-the-discovery-of-america). In this sense, they will observe a template of a treasure hunt with different crosses to achieve the final purpose. In each of them, the learners have to research surfing the Internet to find the solution of different questions related to the main topic of the session (see <i>Annex VI</i>). In this case, the teacher will promote values such as teamwork, respect, and a suitable use of Internet to find appropriate information.
Activity 4 (10')	<i>Plickers!</i>
Grouping	Individual
Description	Finally, to review both content and language learned throughout the lesson, the teacher will assess them in a motivating way through the technological application Plickers (https://get.plickers.com/) For that, the teacher will give each student a card with a code (with a square shape) that is different depending on the option (each card ha four possible options in each side of the square – a, b, c, and d). Then, the teacher will read each question and the possible answers. The pupils will have thirty seconds to think the question, and they

	have to answer raising the card with the appropriate orientation depending on the option that they think that is the solution (see <i>Annex VII</i>). At last, the teacher will use the app in his/her mobile phone to scan the answers of the students.
Resources	
The main resources needed to put into practice this session are the following ones: computer, projector, screen, iPads, sheets of paper, codes of Plickers, the video about the history of Christopher Columbus, and the technological applications EdPuzzle, Quizlet, Genially, and Plickers.	

N° Session		3	Duration	55'
Title of the session		Sailing through stars		
Didactic objectives				
Content objectives - To promote teamwork and cooperation. - To develop an inquiry attitude. - To learn what are stars and constellations. - To recognize well-known constellations. - To relate geometrical figures with the shape of different constellations. - To identify the different parts of ships. - To make a responsible use of ICT resources in the classroom.				
Language objectives - To discuss ideas with other classmates and get into agreements. - To summarize information and get the main ideas. - To use the present simple to talk about current facts and characteristics. - To get information about the topic through texts and videos. - To write personal ideas about their own learning. - To comprehend the input given. - To understand and use universe vocabulary: <i>stars, constellations, planets, North Star, meridians, parallels.</i>				

- To relate their previous knowledge with new information provided in the lesson.
- To contrast ideas with their classmates.
- To research about the topic.
- To use turn-taking expressions.
- To apply several expressions to ask questions and possible doubts.
- To foster real English expressions between the teacher and the students.

Cognition objectives

- To develop their inquiring abilities to find further information to apply.

Culture objectives

- To value the job of sailors in the past.

Didactic contents

- Main features of the universe.
- Basic ideas of navigation.
- Teamwork and cooperation.
- Inquiry attitude.
- Stars and constellations.
- Different parts of ships.
- Relationship between geometrical figures and the shape of different constellations.
- Responsible use of ICT resources in the classroom.

Key competences

CLC, CMST, DC, L2L, SCC, CAE.

Activities

Activity 1 (10')	<i>Creating our social wall</i>
Grouping	Individual
Description	In this session, the students will make use of the technological application Padlet (https://es.padlet.com/) for the first time, because they will use it again in other lessons. It is an excellent opportunity to create a social wall in which they can share their ideas and thoughts, being able to add pictures or videos related to the information they want to write. In this case, each learner

	will reflect about the last session and they will write few sentences explaining to their classmates what they learned about Christopher Columbus and the discover of America.
Activity 2 (5')	<i>Learning constellations</i>
Grouping	Individual
Description	Once they have reflected about the previous session, the teacher will provide them a video in which they can understand better what are the stars and constellations. Also, the students will write some main ideas to use for the next task. In case it would be necessary, they will watch the video twice. <i>Video:</i> https://www.youtube.com/watch?v=adKrNga8-Qs (What are stars and constellations? - Mizyaka Dizyaka ENG)
Activity 3 (15')	<i>Quiz time!</i>
Grouping	Small heterogeneous groups
Description	In this activity, the students will play a quiz with the technological application Socrative (https://b.socrative.com/teacher/#import-quiz/59581879) in order to know if they have learned the content properly about the stars and constellations (see <i>Annex VIII</i>). For that, the teacher will divide the students into four heterogeneous groups, and each group will have an iPad. Then, the teacher will read different questions (multiple choice, true/false or short answer) and the possible answers. The students have to think the question, and they have to answer choosing the correct option (only one student for each group). It will be a race with different motivating avatars, but the winner will be the group with more suitable answers, not the first one to complete it.
Activity 4 (25')	<i>The star race</i>
Grouping	Small heterogeneous groups
Description	At last, the teacher will propose the pupils a game to continue learning about constellations at the same time they can foster essential values such as respect or teamwork, among others. For that reason, each group will have an iPad with the technological application Star Map Tracker Stargazing, (https://play.google.com/store/apps/details?id=us.kvasha.startracker&h

	l=en US&gl=US) in which they can see all constellations virtually focusing the iPad around themselves. Thereby, the teacher will share a Google Docs with each team and they have to search some different constellations that are written in the file using the app. In addition, they have to take notes in relation to the shape and the number of stars that each of them have (see <i>Annex IX</i>). It will be a race and the winner will be the first group with all correct answers. If they have some mistake, the teacher can say them because he/she can access to each Google Docs.
FLIPPED CLASSROOM	At home, the students will research information about the different parts of a boat, taking into account the translation into English too. They can write the concepts in a Word document with pictures to facilitate their comprehension. Also, they can compare the knowledge of this topic of their parents and grandparents, bearing the materials used to build a boat in mind, for instance. This activity will be really useful for the following lesson.
Resources	
The main resources needed to put into practice this session are the following ones: computer, projector, screen, iPads, sheets of paper, the video about stars and constellations, and the technological applications Padlet, Socrative, and Star Map Tracker Stargazing. Also, the students need their computers, mobile phones, or iPads at home.	

N° Session	4	Duration	55'
Title of the session	Sailor, on board!		
Didactic objectives			
Content objectives			
- To promote teamwork and cooperation. - To develop an inquiry attitude. - To learn what are stars and constellations. - To identify the different parts of ships. - To research about how were old ships in the past.			

- To comprehend how old ships were guided by the North Star.
- To make a responsible use of ICT resources in the classroom.

Language objectives

- To discuss ideas with other classmates and get into agreements.
- To use the past simple to talk about past events.
- To use the present simple to talk about current facts and characteristics.
- To use adjectives to describe the ships.
- To use WH questions to guide investigations.
- To write personal ideas about their own learning.
- To present information to their classmates.
- To understand and use navigation vocabulary: *ship, mast, hull, North, South, East, West*.
- To contrast ideas with their classmates.
- To research about the topic.
- To design vocabulary flashcards.
- To use turn-taking expressions.
- To apply several expressions to ask questions and possible doubts.
- To foster real English expressions between the teacher and the students.
- To apply linking words to justify their arguments: *by the fact, which means that, because, or however*.

Cognition objectives

- To develop their inquiring abilities to find further information to apply.
- To demonstrate critical thinking when selecting information on the Internet.

Culture objectives

- To appreciate the importance of the discovery of America for the history of Spain.
- To value the job of sailors in the past.

Didactic contents

- Basic ideas of navigation.
- Relationship between the universe and navigation in the past.
- Teamwork and cooperation.
- Critical thinking to select information on the Internet.
- Inquiry attitude.

- Different parts of ships. - Characteristics of old ships in the past. - Navigation of old ships in the past guided by the North Star. - Responsible use of ICT resources in the classroom.	
Key competences	
CLC, CMST, DC, L2L, SCC, CAE, SIE.	
Activities	
Activity 1 (5')	<i>Creating our social wall</i>
Grouping	Individual
Description	As it is explained in the previous lesson, at the beginning of this session, the students will use the technological application Padlet (https://es.padlet.com/) again with the iPad, with the main purpose of creating an enriching and useful social wall. In this case, each student will explain his/her favourite constellation, adding a picture or drawing to reinforce the content and facilitate the understanding of the rest of the classmates.
Activity 2 (15')	<i>Designing flashcards</i>
Grouping	In pairs
Description	In this activity, the learners will put into practice the vocabulary learned at home previously in the flipped task. Thus, the teacher will divide the student in pairs to review the concepts through the technological application Quizlet (https://quizlet.com/es) with the iPad. Nevertheless, in this case, as they know the vocabulary, they have to create the flashcards using the app. For that, they will write the concepts and add a picture related to facilitate their comprehension. After it, the pairs will exchange the iPads to reinforce their knowledge, playing the games proposed by the application with the flashcards of other partners. In this sense, they will make a peer-assessment at the same time, in a way in which they can assess the work of their classmates while they are reviewing the concepts.

Activity 3 (30')	<i>Researchers for a day</i>
Grouping	Small heterogeneous groups
Description	Now, in the following activity proposed, the students will be researchers for a day. In this sense, the teacher will divide the students into four small heterogeneous groups, and they have to research about how were made the ships in the old days. Besides, they can put the attention on the materials and resources used to build them, at the same time that they can compare with contemporary boats. In order to get it, the students will use computers in a correct way to get information about this topic. Also, each team will create a simple infographic taking advantage of the technological application Canva (https://www.canva.com/es-es/). Thereby, they will use a fixed template proposed by the app, working together with more than one iPad.
Activity 4 (5')	<i>A fishbowl</i>
Grouping	Whole group
Description	Finally, the students will use the strategy of fishbowl presentation to improve the communicative skills of the learners. Thus, this strategy consists of creating a circle, and inside it, a small one with the members of the group that have to present the topic. In a minute per team, with the infographic projected in the screen of the classroom, they can show their work to the rest of the classmates, analysing briefly their research.
FLIPPED CLASS ROOM	At home, the teacher will share a Google Docs with a text about how ships could guide in the old days only by looking at the stars, and paying special attention to the North Star (see <i>Annex X</i>). In addition, to review if they have understood the meaning of the text appropriately, the students will do a test designed by the teacher, making use of Google Form (https://docs.google.com/forms/d/e/1FAIpQLSeGxP7tFengFpjhmHUKvcRIRP7m9aHZ7b4mao8j03j4P63lA/viewform?usp=sf_link) (see <i>Annex XI</i>). In

	this sense, the results will be visible for the teacher, and he/she will reinforce the weaknesses in the following session at class.
Resources	
The main resources needed to put into practice this session are the following ones: computer, projector, screen, iPads, sheets of paper, and the technological applications Padlet, Quizlet, and Canva. Also, the students need their computers, mobile phones, or iPads at home.	

Nº Session		5	Duration	55'
Title of the session	Old sailors for a day			
Didactic objectives				
Content objectives				
- To promote teamwork and cooperation. - To develop an inquiry attitude. - To relate geometrical figures with the shape of different constellations. - To comprehend how old ships were guided by the North Star. - To make a responsible use of ICT resources in the classroom.				
Language objectives				
- To discuss ideas with other classmates and get into agreements. - To understand and use universe vocabulary: <i>stars, constellations, planets, North Star, meridians, parallels.</i> - To understand and use navigation vocabulary: <i>ship, mast, hull, North, South, East, West.</i> - To understand and use vocabulary about the discovery of America: <i>trip, colonization, slave, spices, ocean.</i> - To contrast ideas with their classmates. - To use turn-taking expressions. - To apply several expressions to ask questions and possible doubts. - To foster real English expressions between the teacher and the students. - To apply linking words to justify their arguments: <i>by the fact, which means that, because, or however.</i>				
Cognition objectives				

- To develop their inquiring abilities to find further information to apply. - To demonstrate critical thinking when selecting information on the Internet. - To improve their spatial orientation skills. Culture objectives - To appreciate the importance of the discovery of America for the history of Spain. - To value the job of sailors in the past.	
Didactic contents	
- Relationship between the universe and navigation in the past. - Teamwork and cooperation. - Discovery of America. - Stars and constellations. - Relationship between geometrical figures and the shape of different constellations. - Navigation of old ships in the past guided by the North Star. - Spatial orientation skills. - Responsible use of ICT resources in the classroom.	
Key competences	
CLC, CMST, DC, L2L, SCC, SIE.	
Activities	
Activity 1 (10')	<i>Baamboozle!</i>
Grouping	Small heterogeneous groups
Description	To start the lesson, the students will play a game using the technological application Baamboozle (https://www.baamboozle.com/game/556957) in order to know if they have learned the content of the previous session. For that, the teacher will divide the students into four small heterogeneous groups. The teacher will show them a template in the screen with different numbers, and alternately, each team will choose a specific number with a question designated. If the answer is correct, the group will receive a number of points depending on the questions

	chosen. It is motivating because they can find some numbers with “powers” that can change the progression of the game; for instance, a team will change the punctuation with another group (see <i>Annex XII</i>). For that reason, the pupils can learn in context, in a highly engaging and competitive environment. Also, it should be highlighted the advantage of playing from a single device on a projector, being unnecessary student accounts to set up.
Activity 2 (20’)	<i>Creating our constellations</i>
Grouping	In pairs
Description	The students will be divided into pairs to perform this activity. Thus, the teacher will ask them to design their own constellation, which will be their guide for the last session tasks, as if it was the North Star for sailors. For that purpose, pupils will make use of PowerPoint slides, connecting the apexes of different geometrical shapes. This will be a metaphor between Maths and Astrology, considering the apexes stars, and the sides the lines that give shape to each constellation.
Activity 3 (35’)	<i>Orienteering race!</i>
Grouping	Small heterogeneous groups
Description	To finish the session and put into practice the theory previously learnt, the teacher will prepare an orientation race related to the topic. For that, the students will be divided into small heterogeneous groups of four pupils each. Their goal will be to find different places in the school taking as a reference a specific location, the North Star. In order to be guided from one place to another, each group will use the compass of the iPad they will carry and they will scan QR codes throughout the rout. Finally, they will make use of the technological application Geocaching (https://www.geocaching.com/play) to help them arrive to determined locations.
Resources	
The main resources needed to put into practice this session are the following ones: computer, projector, screen, iPads, sheets of paper, and the technological applications	

Baamboozle and Geocaching. Also, the students will make use of the compass of the iPads, the camera of it to scan QR codes, and PowerPoint.

N° Session	6	Duration	90'
Title of the session	Travelling to the past		
Didactic objectives			
Content objectives			
- To understand the main features of the universe. - To know basic ideas of navigation. - To understand the relationship between the universe and navigation in the past. - To promote teamwork and cooperation. - To develop an inquiry attitude. - To identify the different parts of ships. - To make a responsible use of ICT resources in the classroom.			
Language objectives			
- To discuss ideas with other classmates and get into agreements. - To summarize information and get the main ideas. - To use the past simple to talk about past events. - To use the present simple to talk about current facts and characteristics. - To comprehend the input given. - To present information to their classmates. - To understand and use universe vocabulary: <i>stars, constellations, planets, North Star, meridians, parallels.</i> - To understand and use navigation vocabulary: <i>ship, mast, hull, North, South, East, West.</i> - To contrast ideas with their classmates. - To use turn-taking expressions. - To apply several expressions to ask questions and possible doubts. - To foster real English expressions between the teacher and the students. - To apply linking words to justify their arguments: <i>by the fact, which means that, because, or however.</i>			

Cognition objectives - To develop their inquiring abilities to find further information to apply. - To demonstrate critical thinking when selecting information on the Internet. Culture objectives - To appreciate the importance of the discovery of America for the history of Spain. - To value the job of sailors in the past. - To contrast habits of life of Indians with our current culture.	
Didactic contents - Main features of the universe. - Basic ideas of navigation. - Teamwork and cooperation. - Critical thinking to select information on the Internet. - Inquiry attitude. - Stars and constellations. - Responsible use of ICT resources in the classroom.	
Key competences	
CLC, CMST, DC, L2L, SCC, CAE.	
Activities	
In this session, all students will go on a school trip to the museum of navigation in Seville, in order to learn more about this topic in a real and enriching context. The trip will have a duration of one hour more or less, where the students will do an activity in small groups to reinforce both content and language acquired. After it, in the classroom, in thirty minutes approximately, they will do another task to make a nice summary of the trip.	
Activity 1 (60')	<i>Gymkhana in the museum</i>
Grouping	Small heterogeneous groups
Description	Although all students will be together in the school trip, the teacher will divide them into small groups, giving to each of them an iPad and a camera. Thereby, throughout the whole route, they will complete a gymkhana using the technological application Deck

	Toys (https://deck.toys/). In this sense, the application will have a template with a specific tour with different tasks, in a way in which the students have to do the first task mandatorily to do the following activity. Besides, each activity will be related with the determined places in the museum of navigation, allowing the learners to extrapolate the content and language learned to the tasks proposed in the application.
Activity 2 (30')	<i>A summary of the trip</i>
Grouping	Small heterogeneous groups
Description	Before doing this activity in the classroom, it will be essential to take photos in the school trip. For that reason, the teacher will explain it to the learners and they will be able to do it with their iPads or cameras. After it, in the school, each small heterogeneous group will make a presentation with the pictures making use of the technological application Prezi (https://prezi.com/es/). Moreover, each team will perform a short presentation to show the pictures to the rest of their classmates.
Resources	
The main resources needed to put into practice this session are the following ones: computer, projector, screen, iPads, cameras, sheets of paper, and the technological applications Deck Toys and Prezi.	

N° Session	7	Duration	55'
Title of the session	The performance		
Didactic objectives			
Content objectives			
- To understand the relationship between the universe and navigation in the past. - To promote teamwork and cooperation. - To comprehend the importance of the discovery of America as a landmark for history. - To develop an inquiry attitude.			

- To comprehend how old ships were guided by the North Star.
- To make a responsible use of ICT resources in the classroom.

Language objectives

- To discuss ideas with other classmates and get into agreements.
- To summarize information and get the main ideas.
- To use the past simple to talk about past events.
- To use the present simple to talk about current facts and characteristics.
- To write personal ideas about their own learning.
- To write a script to plan a representation.
- To present information to their classmates.
- To understand and use universe vocabulary: *stars, constellations, planets, North Star, meridians, parallels.*
- To understand and use navigation vocabulary: *ship, mast, hull, North, South, East, West.*
- To understand and use vocabulary about the discovery of America: *trip, colonization, slave, spices, ocean.*
- To contrast ideas with their classmates.
- To use turn-taking expressions.
- To apply several expressions to ask questions and possible doubts.
- To foster real English expressions between the teacher and the students.

Cognition objectives

- To develop their inquiring abilities to find further information to apply.
- To demonstrate critical thinking when selecting information on the Internet.
- To perform a brief role-play about the topic.

Culture objectives

- To appreciate the importance of the discovery of America for the history of Spain.
- To value the job of sailors in the past.
- To contrast habits of life of Indians with our current culture.

Didactic contents

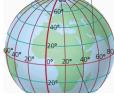
- Relationship between the universe and navigation in the past.
- Teamwork and cooperation.

- Discovery of America. - Role of Christopher Columbus in the discovery of America. - Navigation of old ships in the past guided by the North Star. - Performances of brief role-plays about the topic. - Responsible use of ICT resources in the classroom.	
Key competences	
CLC, CMST, DC, L2L, SCC, CAE, SIE.	
Activities	
Activity 1 (5')	<i>Our experience</i>
Grouping	Individual
Description	As it is explained in previous lessons, at the beginning of this session, the students will use the technological application Padlet (https://es.padlet.com/) again with the iPad, with the main purpose of creating an enriching and useful social wall. In this final case, each student will explain how was his/her experience in the museum of navigation in Seville. Thus, the learners will share their ideas and thoughts with their partners, writing their favourite place or activity, for instance. Also, it is an excellent opportunity to foster the communicative skills of the students, trying to use English as much as possible.
Activity 2 (50')	<i>Creating our role-play online</i>
Grouping	Small heterogeneous groups
Description	Finally, the last activity will be a great chance on putting into practice all content and language previously learned throughout the whole project. Thus, the teacher will distribute the students into four heterogeneous groups, and each of them will have some iPads to facilitate the progression of the activity in a cooperative way. In this case, they will apply the technological application Puppet Pals 2 (https://apps.apple.com/es/app/puppet-pals-2/id589141096) to performance a short role-play about how ships were oriented in former days only by looking at the stars. Using it, they will create the stage and characters virtually, taking advantage of the templates

	provided by the app. In addition, they will create a script with the dialogue in the foreign language. After it, they will record their voices through the application, adjusting the details of the virtual theatre. At the end, they can share their videos with the rest of classmates and their family thanks to Google Drive , being an amazing opportunity to organize an online theatre in times of pandemic.
Resources	
The main resources needed to put into practice this session are the following ones: computer, projector, screen, iPads, sheets of paper, and the technological applications Padlet and Puppet Pals 2.	

6.4. Annex IV. Template of Quizlet about universe and navigation

Star	Estrella		★ 🔊 ✎
Constellation	Constelación		★ 🔊 ✎
Route	Ruta		★ 🔊 ✎
Land	Tierra		★ 🔊 ✎
Sail	Navegar		★ 🔊 ✎
Crew	Tripulación		★ 🔊 ✎
Helm	Timón		★ 🔊 ✎

North Star (Polaris)	Estrella Polar		★ 🔊 ✎
Compass	Brújula		★ 🔊 ✎
Parallel	Paralelo		★ 🔊 ✎
Meridian	Meridiano		★ 🔊 ✎
Ship	Barco		★ 🔊 ✎
Mast	Mástil		★ 🔊 ✎
Gravity	Gravedad		★ 🔊 ✎
Atmosphere	Atmósfera		★ 🔊 ✎

Source: Original material making use of the application Quizlet

Link: https://quizlet.com/_9zmcsv?x=1jqt&i=2pdn5z

6.5. Annex V. Template of EdPuzzle about the discovery of America



MULTIPLE CHOICE QUESTION

The Catholic Monarchs were reigning Spain during this period.

→ ☐ True

☐ False



MULTIPLE CHOICE QUESTION

 MULTIPLE CHOICE QUESTION

San Salvador was inhabited by hostile Indians when Columbus arrived.

☐ True

☒ False

 OPEN ENDED QUESTION

What were the names of the three boats of Columbus?

 MULTIPLE CHOICE QUESTION

How were the crew of the boats just before shouting "Earth in sight!"?

☐ Happy

☒ Desperate

☐ Hopeful

☐ Valiant

 MULTIPLE CHOICE QUESTION

Which of the following ingredients were not discovered in America by Columbus?

☐ Chocolate

☐ Potato

☐ Tomato

☒ Banana

 MULTIPLE CHOICE QUESTION

Which country was named in honor of Columbus?

☒ Colombia

☐ Puerto Rico

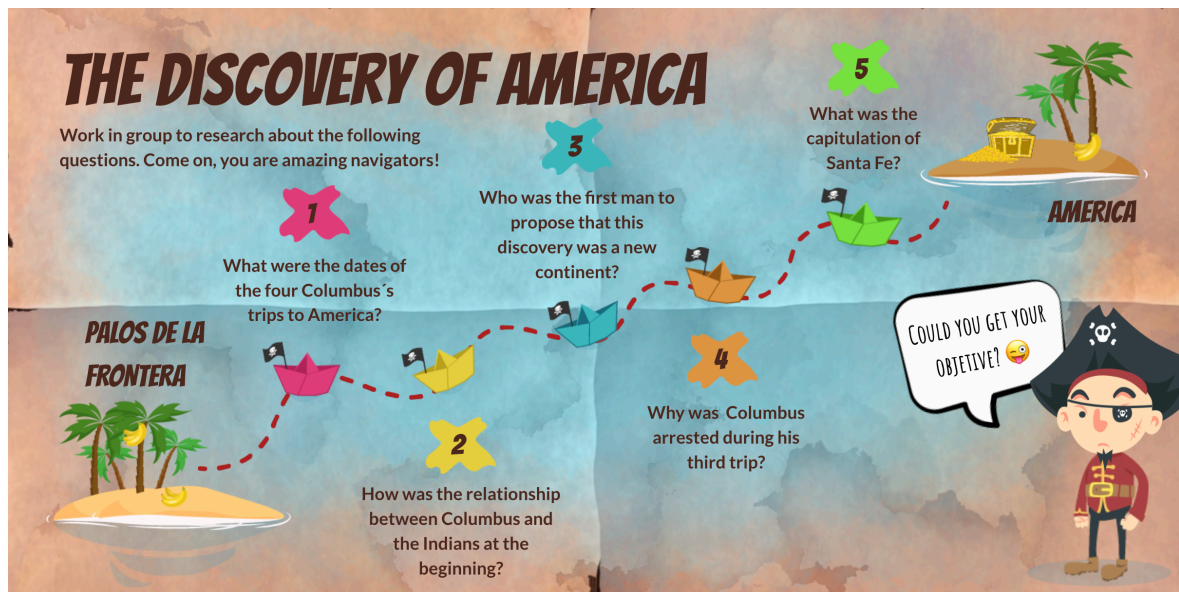
☐ Venezuela

☐ Panama

Source: Original material making use of the application EdPuzzle

Link: <https://edpuzzle.com/media/60deef96bd87244158d5251b>

6.6. Annex VI. Template of Genially about the discovery of America



Source: Original material making use of the application Genially

Link: <https://view.genial.ly/60e029a85d67950daddb0090/interactive-content-the-discovery-of-america>

6.7. Annex VII. Template of Plickers about the discovery of America

Columbus crossed the _____ to reach the Indies. 1 - A Mediterranean Sea - B Atlantic Ocean - C Pacific Ocean - D Indian Ocean	Columbus left from _____ to America. 2 - A Port of Palos - B Canary Islands - C Seville - D Barcelona	Who shouted "Earth in sight" in the boat? 3 - A Christopher Columbus - B Amerigo Vespucci - C Rodrigo de Triana - D King Fernando
Apart from the first trip, Columbus organized _____ more trips. 4 - A 1 - B 2 - C 3 - D 4	From America, Columbus took animals that did not exist in Europe such as hens or horses. 5 - A True - B False - C - D	

Source: Original material making use of the application Plickers

6.8. Annex VIII. Template of Socrative about stars and constellations

1. Stars are small cold balls.
☐ T True
☐ F False
2. Stars are in constant burning process.
☐ T True
☐ F False
3. Stars can differ between them depending on their... (More than one correct answer)
☐ A Size
☐ B Color
☐ C Function
☐ D Brightness
4. The hottest stars are...
☐ A Blue
☐ B White
☐ C Yellow
☐ D Orange
☐ E Red
5. Which star is closest to Earth?
☐ A Moon
☐ B Vega
☐ C Sun
☐ D Sirius
6. The North Star is the only star that remains in the same place.
☐ T True
☐ F False
7. Which constellation has a belt made up of three stars?
☐ A Little bear
☐ B Great bear
☐ C Polaris
☐ D Orion
8. Cassiopeia looks like a letter...
☐ A X
☐ B W
☐ C V
☐ D Y
9. A shooting star is a real star that is falling down in the Earth.
☐ T True
☐ F False

Source: Original material making use of the application Socrative

Link: <https://b.socrative.com/teacher/#import-quiz/59581879>

6.9. Annex IX. Template of Google Docs – The race star

THE STAR RACE

Taking into account the application Star Map Tracker Stargazing, fill the following table drawing the shape of each constellation, writing a similar geometrical figure, and the number of stars that each of them have. Come on students!

Constellation	Shape	Geometrical figure	Number of stars
Aquarius			
Leo			
Lyra			
Orion			
Pisces			
Great bear			
Little bear			

Source: Original material

6.10. Annex X. Template of Google Docs – Navigating by the stars

NAVIGATING BY THE STARS

A constellation is a group of stars that, when lines are drawn from one to another, make up a picture—like a dot-to-dot drawing. There are twelve constellations that make up the zodiac, but actually, the sky has been officially divided up into 88 constellations in the celestial sphere, so that astronomers can map them. With a star map and a celestial navigation instrument, you can figure out where you are on earth, just as you might navigate using terrestrial maps and charts.

Most people in the northern hemisphere know these twelve constellations, but not everyone knows how to find them in the night sky. Constellations and knowledge of the night sky have played a very important role in maritime history. Long before we had GPS units, satellites, and even a simple clock that could be relied upon to keep accurate time at sea on a rolling ship, sailors learned to identify the stars in the sky so they could use them to navigate out of sight of land.

Hundreds of years ago, people made tools to navigate with that could measure angles between the stars and the horizon—this way they could do some calculations and figure out their latitude. They had to wait hundreds of years to figure out their longitude, because you need a very accurate clock to figure that out, and the first reliable seagoing clock, or chronometer, wasn't invented until the 1700s. Some early celestial navigation tools were the cross-staff, the astrolabe, and eventually the quadrant, octant (above), and sextant.

Anyone can learn to identify some of the more important stars and constellations, and you don't even need to buy anything to do it. You just need your eyes and a dark sky and a little guidance.

The most important, and easiest star to find in the night sky is the North Star, or Polaris (also called the Pole Star). The North Star is located at the tip of the handle in the constellation, the Little Dipper. The easiest way to find it is to first find the Big Dipper and follow its pointer stars in a line across the sky to the North Star. No matter where you are in the northern hemisphere, you know you are facing north if you are looking at the North Star.

This time of year is terrific for checking out stars and constellations in the night sky. Once you've become familiar with finding the North Star, start looking for Orion's Belt. When you can see Orion low in the sky, you know winter is coming—but that is a constellation for another day (or night!).

Source: *Sea History for Kids* (2021).

6.11. Annex XI. Template of Google Form about how ships were oriented by stars

In the sky, we can observe all the zodiac represented by constellations. *	1 punto
☐ True	
☐ False	

In the old days, sailors could take advantage of using GPS to orientate themselves. *	1 punto
☐ True	
☐ False	

The astrolabe was an amazing navigation tool to measure angles between stars and the horizon. *	1 punto
☐ True	
☐ False	

The Polaris is the best star to orientate in the sea. *	1 punto
☐ True	
☐ False	

The North Star is located in the constellation of the Big Dipper. *	1 punto
☐ True	
☐ False	

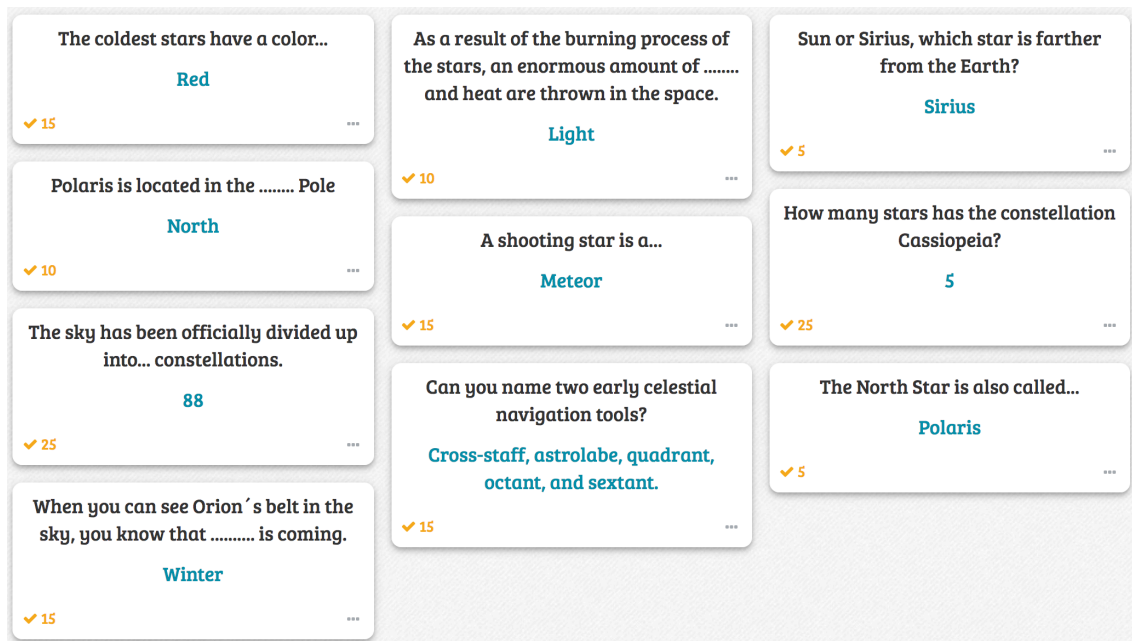
The Orion's Belt is synonym of summer. *	1 punto
☐ True	
☐ False	

Source: Original material making use of the application Google Form

Link:

https://docs.google.com/forms/d/e/1FAIpQLSeGxP7tFengFpjhmHUKvcRlRP7m9aHZ7_b4mao8j03j4P63lA/viewform?usp=sf_link

6.12. Annex XII. Template of Baamboozle about universe and navigation



Source: Original material making use of the application Baamboozle

Link: <https://www.baamboozle.com/game/556957>