

Master's Dissertation/
Trabajo Fin de Máster

**#GAMEISNOTOVER: GAMIFICATION
APPLIED TO "TECHNOLOGY,
PROGRAMMING, AND ROBOTICS".
A CLIL PROPOSAL**

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ABSTRACT AND KEYWORDS / *Resumen y palabras clave*

Nowadays teachers face difficulties to motivate and stimulate students in the classroom. New tendencies such as the student-centered methodologies have arisen in order to confront these difficulties. In addition, European countries and especially Spain, have bet for an improvement in foreign language teaching. CLIL has invaded the Spanish schools, but it may be complicated to teach through this approach, at least at the beginning. Probably, hundreds of teachers are wondering how to develop a lesson plan that not only motivates but also stimulates their students, in which the students are the protagonists of their own learning process and in which both content and a foreign language are integrated. This dissertation will try to answer those questions by developing a gamification project for a CLIL class of the subject “Technology, Programming and Robotics” of 2nd CSE students in Madrid called “#GameIsNotOver”.

Keywords: CLIL, gamification, Scratch, ICT, motivation, student-centered learning, CSE

RESUMEN

Hoy en día el profesorado se enfrenta al problema de motivar y estimular al alumnado en el aula. Nuevas metodologías como el aprendizaje centrado en el alumnado han surgido para combatirlo. Además, los países europeos, incluida España, han apostado por una mejora de la enseñanza de lenguas extranjeras. La metodología AICLE ha invadido los colegios españoles, pero puede que esta metodología no sea tan sencilla de aplicar, al menos inicialmente. Probablemente, cientos de profesores estén preguntándose cómo desarrollar un proyecto que no solo motive, sino que también estimule a su alumnado, en el que este sea protagonista de su propio aprendizaje y en el que tanto el contenido de la asignatura como la lengua extranjera estén completamente integrados. Este trabajo intentará responder a estas preguntas desarrollando un proyecto de gamificación para una clase AICLE de la asignatura “Tecnología, Programación y Robótica” de 2º de E.S.O. en Madrid llamado “#GameIsNotOver”.

Palabras clave: AICLE, gamificación, Scratch, TIC, motivación, aprendizaje centrado en el alumnado, E.S.O.

1. INTRODUCTION.

Education all over the world and, specifically in Spain, has experienced a revolution in the last decade. Society has evolved, technology devices have invaded our lives and children are nowadays completely different from what children used to be in the past. Teachers have realised these changes and have witnessed that what they used in their teaching practice a few years ago is not working anymore. Their teaching methods have been forced to change from a teacher's centered learning to a student's centered learning approach (*Student-centered learning*, 2010). In the latter, the role of teachers evolves to be a mere helper, guide, or facilitator (Ang *et al.*, 2001:9), whereas the students' role gains importance and remains central in the learning process, transforming the students into "active participants in learning and co-constructors of knowledge" (Meece, 2003:111). This students' active participation promotes motivation in the students as well as encourages exploration, critical thinking and knowledge construction, helping them to achieve the learning goals (Law, 2007:314).

Due to the popularity of the student's centered learning approach, a variety of methodologies have emerged and lately invaded the teaching practice. Some of the most common ones are cooperative learning, project-based learning, problem-based learning, task-based learning, the use of ICT, CLIL and gamification among others (Baeten, Kyndt, Struyven & Dochy, 2010:245). Teachers combine them and use them in order to reach out the students and involve them in their own learning. In spite of the fact that this MA Thesis will focus on CLIL and gamification for being the two main methodologies applied in the above-mentioned project, it can be observed that other methodologies such as cooperative learning, project-based learning, and the use of ICT are also going to be considered.

Why CLIL? First of all, it is undeniable that when teaching a subject in a foreign language a CLIL methodology must be present. Although the basics of CLIL are going to be described later on, it is important to clarify the main reasons why this methodology has been chosen. Firstly, the context is one of the most determining factors that the implementation of CLIL depends on (Bruton, 2013:593). This means that a CLIL subject is going to be taught taking into account the students' language possibilities. In addition, CLIL increases the exposure to authentic language in class for the students as pointed out by Pérez Cañado (2013:16), what produces a boost of the student's communicative competence. Lastly, CLIL methodology integrates both content and knowledge, what allows students to develop academic competences at the same time as specific communicative skills (Calle, 2015:8).

Why gamification? As stated by Palazón (2015:1059), it is becoming harder and harder to motivate students in educational tasks; however, thanks to gamification students assimilate contents better because they work in a more participative way, and they learn at the same time as they have fun. Moreover, gamification in learning environments might enhance important skills such as problem-solving, collaboration, and communication (Dicheva *et al*, 2015:75). For these reasons and due to the specific context of the students participating in the project that is going to be described in this research, the approach has relied on gamification as the main methodology involved in the project.

Moving on to the explanation of the sections of this work, we can differentiate seven main ones. The first one, “Objectives”, states the principal purposes of this paper. The second one, “Theoretical framework”, focuses on CLIL and gamification. In this section both methodologies are going to be reviewed and analysed, specifying their main characteristics, their benefits, and, in the case of CLIL, its application to the context of Spain and, more specifically, the Community of Madrid. The third section, “Gamification project: #GameIsNotOver”, includes the development of a project, that could be considered as a “Lesson plan”. It includes the justification for the design of the project as well as the characterization of the context in which it is going to take place. It clearly states the objectives, contents, and competences that are pursued with its implementation. In addition, it focuses on how attention to diversity is tackled in the project from different perspectives and it contains the mechanics of gamification that are going to be used, as well as the materials needed for the development of the lesson plan. Lastly, a detailed step-by-step account of the lesson plan as well as an analysis of the project in terms of evaluation will follow. This will focus on the evaluation criteria and learning standards for the students, the tools used for it, and the evaluation of the teaching practice. The fourth section, “Results and discussion”, contains the outcomes of having implemented the project in a real classroom setting. The fifth section, “Conclusions”, includes a reflection on the project developed and the conclusions in relation to the objectives stated at the beginning of this paper. The sixth section, “References”, includes not only the bibliography but also the webliography. Finally, the seventh section, “Appendices”, consists of all the supplementary materials that are going to be used to develop the project (worksheets, readings, rubrics, reward cards, etc.).

2. OBJECTIVES.

In this section the different goals of this work are stated and divided into two main sections according to their character: general and specific.

2.1. General objective.

The general objective is to develop a gamification project for specific contents of the subject “Technology, Programming and Robotics” aimed at 2nd CSE students to motivate them in their learning practice and to fully integrate the CLIL methodology in it.

2.2. Specific objectives.

The specific objectives are:

- To find a way to get all students involved in the learning practice.
- To boost students’ communication skills in the L2.
- To relate subject content to the students’ daily life.
- To help other teachers get familiar with gamification.
- To share my own experience in this project with the teaching community.
- To show the benefits of using gamification as a teaching-learning methodology.

3. THEORETICAL FRAMEWORK.

In this section the theoretical framework on which the project is based is going to be established. Both CLIL and gamification methodologies are going to be described, and some of the previous works related to these topics are going to be reviewed.

3.1. CLIL methodology.

The term CLIL (Content and Language Integrated Learning) was coined in 1994, and launched two years later by UNICOM, the University of Jyväskylä (Finland) and the

European Platform for Dutch education (Fortanet-Gómez and Ruiz-Garrido, 2009:47; Marsh, 2006:32). As defined by Marsh and Langé (2000:2) “CLIL is a dual-focussed education approach in which an additional language is used for the learning and teaching of both content and language”. Since the 1990s, CLIL has been gradually spreading and specially over the past two decades its presence has been on the rise all over Europe, being considered as stated by Pérez Cañado “an increasingly acknowledge trend in foreign language teaching” (2012: 319). But, what does it make CLIL so special?

3.1.1. CLIL characteristics.

According to Mehisto, Marsh and Frigols (2008:29-30) the core features of the CLIL methodology are:

- Multiple focus approach: CLIL pursues the integration of content and language lessons and the integration of different subjects.
- Safe and enriching learning environment: the experimentation with language and content is encouraged by CLIL teachers, offering students a safe and guided space for it and enhancing the language awareness in them. In addition, CLIL promotes the use of authentic learning materials.
- Authenticity: CLIL looks for the connection between the students’ daily lives with the content and language present on the subjects taught by means of this methodology. This connection can be made by activities that relate to the students’ lives, to their interests and motivations, to their context, etc. Moreover, the learning materials should be as often as possible authentic materials from the radio, newspapers or television, so that students are exposed to the real world.
- Active learning: CLIL is a type of student-centered methodology where the student is the protagonist of the teaching-learning process. The activities proposed in lessons follow a cooperative approach and must promote cognitive skills as well as communication skills among students. The role of the teacher evolves to a guide for students in the above-mentioned process.
- Scaffolding: teachers need to support the students’ language needs. For this, they use scaffolding strategies that consist on building on the students’ previous

knowledge, taking into consideration different learning styles and repackaging information in user-friendly ways.

- Cooperation: in order to successfully implement CLIL, it is necessary to make sure that there is a high degree of cooperation and coordination among CLIL and non-CLIL teachers, parents, and other stakeholders.

Moreover, it is essential to describe that according to Coyle (1999:9), CLIL is based on the integration of content, communication, cognition, and culture. This is known as the 4C's framework of CLIL:

- Content: it is the subject matter that is going to be taught in the foreign language.
- Communication: it is related to the language skills that students need and are going to develop. CLIL pursues interaction between peers and teachers. In order to make language affordable for students, it needs to be supported through scaffolding.
- Cognition: it is the thinking and learning processes that students develop. CLIL aims to challenge students and to make them construct their own understanding.
- Culture: on the one hand, this relates to the cultural awareness of learning a new language. On the other hand, it also refers to the students' context.

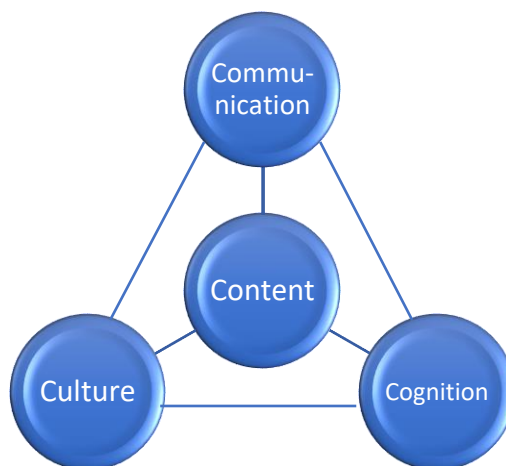


Figure 1: The 4C's of CLIL (adapted from Coyle, 1999:10)

3.1.2. CLIL advantages.

Through the years, research has shown a variety of assets derived from using the CLIL methodology. According to Pérez Cañado (2013:16-18), the benefits of CLIL can be categorized in the following dimensions:

- Linguistic: Firstly, the students' exposure to the L2 increases considerably. Moreover, students receive relevant input from authentic materials, using the L2 for real purposes. This produces an improvement in terms of language competence, especially in communicative skills. It is important to remark that by using the L2 as the target language, the L1 is not damaged.
- Content knowledge: CLIL is not detrimental for content knowledge. Students are exposed to the same contents as non-CLIL ones. In fact, CLIL forces students to use their cognitive skills constantly, what results in a better assimilation of content that non-CLIL students.
- Learning: CLIL offers the students a real context to use the foreign language, producing more efficient learning outcomes.
- Cognitive: CLIL promotes the acquisition and development of different cognitive skills such as communicative, problem-solving, critical thinking, risk-taking, pragmatic, and interpersonal abilities.
- Teaching: CLIL gives teachers the chance of learning and collaborating in community with other teachers (content and language ones), the school managers, the students, and the parents. It also introduces a modern view of pedagogy and methodology in the classroom.
- Orectic/volitional: students motivation increases due to their active participation in their own learning process, and the understanding of the L2 as a useful tool necessary to acquire the content knowledge. Moreover, the use of scaffolding strategies to support students helps them to raise confidence and a positive attitude towards the content subject and the foreign language.
- Social: CLIL grants students an opportunity to acquire a foreign language regardless of their social and economic background.

- Cultural: CLIL contributes to the development of cultural awareness and builds intercultural knowledge and understanding.
- Pragmatic: CLIL prepares students for their future (other studies, work, etc.), as well as for internationalization, and qualifies students for international mobility to study or work.

Despite all the benefits CLIL brings, it might be thought that implementing CLIL in a classroom setting or learning through CLIL is not easy. As stated by one of the students that participated in Coyle's research (1999:7), "it is harder to learn like this, especially at the beginning, but if it makes you concentrate more, then you learn it better, and so it is better to do it this way". Therefore, although at the beginning it might result a challenge (for teachers, school, students, and parents), implementing CLIL is a worthy decision that schools and teachers should take.

3.1.3. *CLIL disadvantages.*

Despite the positive aspects of CLIL methodology, the different disadvantages or challenges that teachers and students may face when teaching and learning through this methodology should also be taken into consideration. According to Sulistova (2013:50), the possible negative aspects of CLIL are:

- Material preparation: CLIL materials might be hard to find; therefore, teachers need to employ a lot of time searching for appropriate materials or creating their own.
- Foreign language level: on the one hand, students might not have an adequate level of L2 to be able to face a subject taught in that language. On the other hand, non-native teachers might face language difficulties when teaching in the foreign language.
- CLIL training: in general, the requirements to teach CLIL lessons focus only on the teacher's level of L2 without demanding specific training in CLIL methodology. Consequently, the majority of teachers start teaching CLIL without explicit knowledge on the matter.

- Teacher's lack of motivation: using CLIL entails extra effort from teachers. They need to keep their level of the foreign language up to date, they need to train in a new methodology, and they need to spend long hours planning, creating and searching for resources, etc. As a result, they can feel demotivated when schools do not compensate them with certain rewards such as hours to coordinate with other CLIL teachers or language assistants, or economic benefits.
- Reluctance to use CLIL: teachers might feel averse to the benefits of using this methodology compared to the required effort they need to do; therefore, they might find it difficult to leave their teaching comfort zone to try this methodology.

3.1.4. CLIL in Spain and in Madrid.

In the last two decades, Spain has been the scenario of changes in terms of language education. As claimed by Coyle (2010: viii), "Spain is rapidly becoming one of the European leaders in CLIL practice and research". This is the result of a commitment with the language policies established by the European Union to promote multilingualism and increase the need to learn foreign languages (Lasagabaster & Ruiz de Zarobe, 2011:9).

It should be emphasised the fact that CLIL in Spain has been developed under two specific circumstances. First, there are 17 different communities in Spain, in addition to two more cities. Each community has its own educational policies and legislation due to the decentralization of the Spanish educational system (Pérez Cañado, 2012:327). This has caused the implementation and development of a diversity of CLIL models, basically a different one per community. The second circumstance is the existence of communities with a co-official language (Catalonia, Valencia, The Basque Country, Galicia, the Balearic Islands). CLIL has been applied both in bilingual communities like the ones mentioned above, for either their co-official language or the foreign one, and also in the monolingual communities where there was no tradition in foreign language teaching.

Focusing on the Community of Madrid, a monolingual community, a Spanish-English bilingual program has been implemented since 2004 in public and charter schools. The program consists of not only studying English as a foreign language, but

also teaching other content subjects through CLIL. The Bilingual Program takes place in Infant, Primary and Secondary Education. In the academic year 2017-2018, there were 369 bilingual public schools for Primary Education age 6-12), 152 bilingual public high schools for Compulsory Secondary Education (henceforth, CSE) (age 12-16), and 204 bilingual charter schools, 61 of them with bilingualism also in CSE. There is no data for the extension of the Bilingual Program in 2017-2018 to Infant Education (age 3-6), but it is known that the previous school year, 35 public schools participated in that extension. (*Programa de enseñanza bilingüe en centros educativos*, 2019).

The Bilingual Program for Infant and Primary schools is regulated by the *ORDEN 5958/2010*. In these schools, the subjects taught in English are English, Natural Science and others amounting to 30% of the student's schedule. The Bilingual Program for Secondary schools is regulated by the *ORDEN 972/2017*. At this level, the Bilingual Program offers two different modalities: the *bilingual section* and the *bilingual program*. In order to belong to the *bilingual section*, students need to come from a bilingual school whose linguistic level guarantees they are going to be able to follow the contents of the program. Students in the *bilingual section* take 5 hours per week of the subject Advanced English¹, Tutorials², Biology and Geology, and Geography and History. Depending on the qualified teachers of each school, any subject can be taught in English except for Mathematics, Spanish, and the second foreign language. Students in the *bilingual program* take 5 hours per week of English, and one of the following content subjects is taught in English: Arts, Ethics, Physical Education, Technology or other elective ones.

Bilingual teachers from both public and charter schools need to obtain a linguistic qualification that is equivalent to a C1 level of the *Common European Framework of Reference for Languages*. The process to obtain this qualification is regulated by the *ORDEN 1275/2014* and the *ORDEN 1012/2015*. In the case of the teachers of the Advanced English subject in CSE, it is also necessary to obtain a specific qualification of 'Advanced English' through an exam offered by the Community of Madrid and

¹ A subject where students learn a higher level of English than students that belong to the *bilingual program* and that in addition of English grammar, it includes the study of English literature

² A session per week where the tutor of a class meets with his students in order to solve conflicts and to carry out activities planned by the Department of Educational Guidance

regulated by the *ORDEN 1317/2015*. This exam consists on an oral dissertation of a lesson plan of the subject above described Advanced English.

3.2. Gamification methodology.

3.2.1. What is “gamification”?

“Gamification is the concept of applying game mechanics and game design techniques into non-game contexts in order to engage and motivate people to achieve their goals” (Burke, 2014:6).

At the beginning, gamification was mainly applied in marketing strategies; however, after witnessing its benefits, different fields started to engage in it. For example, the Swedish National Society for Road Safety in collaboration with Volkswagen gamified the roads of Stockholm in November 2010. Their goal was to inspire drivers to respect the speed limit in a fun way. The speed of each vehicle was shown in a screen and recorded. Those vehicles exceeding the speed limit were photographed and they received a fine. The rest of vehicles were photographed as well to enter in a lottery contest (Melwin & Chiramel, 2017:103). The SpeedCam Lottery was the most successful anti speeding campaign in history and reduced the speeding cars by 20% (*Different gamification use cases*, 2017).

3.2.2. Gamification applied to education.

Another field in which gamification has become very successful for the past decade is education. Gamification is now being implemented in educational programs in order to help educators motivate students at the same time they reach their learning objectives. One of the key elements of a successful gamification in education is not trading the intrinsic motivation of students but promoting a combination of intrinsic and extrinsic motivation (Dichev *et al.*, 2015:2).

According to Huang and Soman (2013:7-15), there is a five-step process to follow so as to gamify a concept:

1. Understanding the target audience and the context: on the one hand, a study of the target audience helps to define factors like age group, learning abilities, current skill-set, etc.; on the other hand, with an analysis of the context, details of the students' group size, environment, sequencing of skills, and the culture can be obtained. These analyses will help to create and personalise gamification.
2. Defining learning objectives: teachers need to set the objectives that they want the students to accomplish at the end of the learning program. These objectives can be categorised into general instructional goals, specific learning goals, or behavioural goals.
3. Structuring the experience: creating stages and milestones is a powerful tool to sequence knowledge. These stages or milestones are useful for students because they break down the main objective into smaller ones which are more achievable and measurable.
4. Identifying resources: the teacher needs to select if there is going to be a tracking mechanism to measure the students' progress in each stage; which currency (the unit of measure, such as points, time, money, etc.) (s)he is going to use to reward students for their work; the amount of currency necessary to go from a level to another; which rules are going to be set; and what the feedback mechanism is going to be like so that students can use it to improve and learn about their learning progress.
5. Applying gamification elements: these are elements that usually appear on games that are used in the learning environment. The teacher has to decide which of these elements are optimal for his/her gamification. These elements are called "game-mechanics" and can be classified as:
 - Self-elements: they are used to help students to focus on completing tasks and to recognise self-achievement. We can include here the following: points, levels, trophies/badges, virtual goods, storyline, time restrictions, aesthetics, etc.
 - Social elements: these are used to relate one student with the others by showing publicly the students' progress and achievements. Some examples

of these game-mechanics are leaderboards, virtual goods, interactive cooperation, storyline, etc.

After these steps have been completed, the teacher has all the necessary tools to design and develop the gamification.

In all gamification process there is a cycle that students must follow in order to successfully complete their learning goals. Regarding Cheong, Filippou and Cheong (2014:243), the phases of this cycle are:

1. Motivation: being triggered to perform an action.
2. Action: enabling students to perform an action in order to achieve a goal.
3. Reward: being given variable rewards for the achievement of the goal. The rewards must be realistic so that students do not get false expectations about their learning process.
4. Achievement: making students invest intellectually in their learning process in a way that will encourage them to go through the cycle again.

Despite the difficulties that implementing gamification in education can involve, by following the steps previously described and by ensuring students enter the gamification cycle, teachers will increase their chances of creating an effective gamification strategy. If such a strategy is implemented properly, it turns into a powerful tool, and, as Huang and Soman (2013:15-16) argue, it can enhance an education program and achieve learning objectives by influencing the students' behaviour.

3.2.3. Benefits of gamification in education.

Several authors have studied the benefits of gamification in education. According to Klopfer, Osterweil and Salen (2009:4), the principal appeal of gamification in an educational environment is the liberty that it provides to both students and teachers: the freedom to fail, the freedom to experiment, the freedom of effort and the freedom to self-express. Related to these freedoms, Lee and Hammer (2011:3) highlight that “gamification offers the promise of resilience in the face of failure, by reframing failure as a necessary part of learning”. As stated by Kiryakova, Angelova and Yordanova (2014:4), “gamification is an effective approach to make positive change in students’

behaviour and attitude towards learning, to improve their motivation and engagement”. Nevertheless, gamification not only benefits students; it also “gives teachers better tools to guide and reward students, so that students can bring their full selves to the pursuit of learning” (Lee & Hammer, 2011:4). In addition to the benefits related to motivation and engagement of the students, the studies by Kim *et al.* (2018:35) pointed out that students learning through gamification showed an enrichment on learning achievement, procedural and declarative knowledge and higher order thinking skills. Moreover, gamification creates competitive learning environments promoting the participation and interaction among students and therefore, making students improve their social and communicative skills.

4. GAMIFICATION PROJECT: “#GAMEISNOTOVER”.

4.1. Justification.

The development of this project arose from the problems I detected as the CLIL Technology teacher in a 2nd CSE class in 2015-2016. The first year I taught the subject “Technology, Programming and Robotics” in that level, I organised the lessons about the contents related to the programming block following a more traditional approach. I was the one who explained every session different programming commands to the students, and afterwards, they had to do a series of practices in pairs implementing those codes to program videogames in the Scratch platform (a programming platform developed by the MIT to promote the development of programming skills among young students). At the end of the didactic unit, students had to submit the practices created in class as well as to pass a paper and pencil multiple-choice test. Along the different sessions I started to detect the following problems:

1. Lack of motivation of a high number of students, specially from those whose thinking and logic skills were less developed.
2. Drop out of difficult tasks even without trying them for students that found the tasks challenging.
3. Difficulty to foster all four skills of the L2 during the tasks.

After doing a self-evaluation of my teaching practice, I realised the approach I had taken to teach these concepts was not the most suitable for my students, and I decided to explore other methodologies to improve for the following year. The goal was to find a way to teach the students at the same time that they were motivated, not leaving anyone behind but also not stopping advanced students from learning more. In addition, I wanted to integrate more language skills to promote the development of the L2. Having these ideas in my mind, I researched into different student-centered learning methodologies, and while I was attending a group of teaching conferences in the event “*Innobar*”³, I heard about gamification for the first time. After that, I decided to learn more about it, and the more I learnt, the more I knew gamification was the new approach I was looking for and this is how the “#GameIsNotOver” project was born.

4.2. Contextualization.

The project has been developed in a charter school in the city centre of Madrid, Spain, with levels from Infant Education to Baccalaureate (Non-Compulsory Secondary Education), although for the project we will just focus on CSE. In terms of organization, the school follows the English bilingual program of the Community of Madrid in Primary Education, whereas in CSE, the school follows its own bilingual project that consists in: one extra session of English per week (a total of 5 sessions per week) and Technology lessons in English (2 sessions per week). The school is involved in the Bilingual English Development and Assessment (BEDA) program of bilingualism run by *Escuelas Católicas* and Cambridge English Language Assessment for catholic schools in Spain. The school has a Bilingual Coordinator (BC), who is a Primary Education teacher, and a Representative of Bilingualism in CSE (RBS), that is one of the English language teachers from CSE. The RBS has similar functions to the BC, but only applied to the bilingual program in CSE. She has monthly meetings with the BC in order to plan and assess the bilingual program of the whole school. She is also in charge of managing and organizing the 32 hours of Language Assistant teachers (LA) that teach in CSE. The two LAs in CSE help both language and content teachers from the bilingual program one hour per week and per group.

³ An educational meeting that takes place in a bar where 10 teachers share innovative practices in short talks, between 5-8 minutes each, with the rest of the audience (Carrión & Llorente, 2019)

Regarding the methodologies applied in the classroom, the school has its own line of pedagogical innovation based on the use of student-centered methodologies such as Cooperative Learning, Critical Thinking, Project Based Learning, and Service Learning. Moreover, the bilingual subjects follow a CLIL approach.

Moving on to the participants in the project, a total of 49 2nd CSE students were selected to take part in it during the “Technology, Programming and Robotics” class. They were divided into two groups (group A, with 24 students and group B consisting of 25 students), and both were taught by means of the same methodology. The students’ level of English ranged from an A1 to a B2 (this information is provided by the English teachers): 1 student from one class had an A1 level, 12-15 students from each class had an A2 level, 8-11 students from each class had a B1 level, and 2-3 students from each class had a B2 level. Both groups were equally distributed in terms of academic level in general, and of English level particularly.

4.3. Objectives.

4.3.1. Content objectives.

- Students can search and select meaningful information from the Internet.
- Students can analyse a problem and find an algorithm to solve it.
- Students can implement algorithms in flowcharts.
- Students can develop videogames on the Scratch platform.
- Students can use Google Docs to create online and shareable documents.
- Students know how to use Google Classroom to get the instructions for the activities, and to hand them in to the teacher.
- Students can design their own curriculum vitae.
- Students can perform a job interview.

4.3.2. *Language objectives.*

- Students understand vocabulary related to computer science, programming, work, and education.
- Students are able to read and understand written texts.
- Students comprehend oral messages displayed in video format.
- Students are able to produce brief oral communication related to lesson tasks.
- Students are able to compose brief written texts with basic cohesion elements.
- Students properly follow basic orthographic and punctuation rules in writing productions.
- Students use pertinent body language in communication.
- Students can perform a job interview.
- Students can write using their own words about the information found on the Internet.
- Students are able to carry out their oral presentations.

4.4. Contents.

4.4.1. *General curricular contents.*

The curricular contents of the “Technology, Programming and Robotics” subject are published in the *DECRETO 48/2015*. This is a compulsory subject in the official curriculum in the region of Madrid and it belongs to the group of subjects that any autonomous community can decide to include within the curriculum. In this decree, although the subject contents appear stated according to each course (1st, 2nd or 3rd CSE), it is established that both the contents and the learning standards have to be accomplished by the end of 3rd CSE, without specifying in the evaluation section, when those learning standards have to be met each course. For that reason, and taking into account that some of the contents established for 1st CSE were not fulfilled in the previous course, the curricular contents of this project will include 2nd CSE contents as well as a few of 1st CSE ones:

1. Analysis and resolution of problems through algorithms (2nd CSE).
2. Tools for block programming (1st CSE).
3. Applications and services for the Internet and new tendencies on the net (2nd CSE).

4.4.2. *Specific curricular contents.*

Once the general contents of the subject have been determined, attention is going to be paid to the specific contents that are going to be developed through the project. These contents are going to be divided into three groups:

1. Contents related to the content subject:
 - Creation of flowcharts to do the design of videogames.
 - Transformation of flowcharts into algorithms to design videogames.
 - Development of videogames by block programming.
 - Use of Cloud Computing tools to store and share files.
 - Use of Web 2.0 tools to create and edit documents.
2. Contents related to language skills:
 - Vocabulary related to computer science, programming, work, and education.
 - Comprehension of oral messages displayed in video format.
 - Production of brief oral communication related to lesson tasks: comments, dialogues, instructions, questions, etc.
 - Production of oral texts in an interview setting.
 - Use of pertinent body language in communication.
 - Use of basic strategies for reading comprehension.
 - Comprehension and use of verbal tenses: present simple, continuous and perfect, past simple and continuous, future simple, “going to”, basic modal verbs, and first conditional.

- Composition of brief texts with basic cohesion elements.
 - Use of basic orthographic and punctuation rules in writing productions.
3. Cross-curricular contents:
- Impact of videogames on society.
 - Design of a curriculum vitae.
 - Development of a job interview.

4.5. Competences.

The European Union guidance emphasizes the necessity of the acquisition of the key competences stated in the *REAL DECRETO 1105/2014* by the citizens so that they are able to fully develop in a personal, social, and professional environment. For this reason, the “#GameIsNotOver” project promotes the development of the following key competences:

1. Linguistic competence: students develop listening, reading, speaking, and writing skills along the project using the English language as the vehicular language.
2. Mathematical, scientific and technological competence: students use their logical and mathematical skills to solve the problems of how to design the code of a videogame at the same time they develop their programming skills.
3. Digital competence: students use digital resources to look for and obtain information (from the project website, Google Classroom, Youtube in general, and from the Internet to search about what is a curriculum vitae and how to design their own one, and about the job interview), to create new contents (design of the videogames on the Scratch platform and creation of their own curriculum vitae in Google Docs), to perform evaluations (through Google Forms rubrics) and to communicate (communication with the teacher and feedback through Google Classroom).
4. Learning to learn competence: on the one hand, students develop autonomy by learning how to program videogames through tutorial videos at the same time they acquire critical thinking skills, and strategies for planning and solving tasks; on the other hand, they feel as the protagonist of their own learning and lead the path they follow in order to progress.

5. Social and civic competences: students learn the code of conduct related to a work setting by designing their curriculum vitae and learning and performing in their own job interview.
6. Entrepreneurship competence: students are introduced to a professional setting by learning how to create a curriculum vitae and performing in a job interview. In addition, students develop their analysis, planning and organization skills by designing videogames, at the same time they build up their creativity and innovation skills.
7. Cultural conscience and expressions competence: students apply different design techniques to create the videogames (choice of game characters, backdrops, story, etc.) developing their creative and imaginative skills. They also learn to critically appreciate and respect their classmates' productions by doing a peer-assessment evaluation of their videogames.

4.6. Attention to diversity.

Student's diversity is a reality inside the classroom that teachers have to be taken into account when planning, teaching, and assessing. Along the teaching and learning process, teachers find students that can present diversity in terms of ideas, experiences, and previous attitudes; diversity of learning styles; diversity in learning pace; diversity in interests, motivations and expectations; and diversity in capacities and pace of development (Arnaiz & Haro de, 1997:141-148). For this project, attention to diversity has focused on the following topics:

1. Diversity of learning styles. They are defined as "the complex manner in which, and conditions under which, learners most effectively perceive, process, store, and recall what they are attempting to learn" (James & Gardner, 1995:24). According to the VAK model of learning styles developed by Barbe, Swassing and Milone (1988:20-35), there are three learning modalities: visual, kinesthetic and auditory. These three modalities have been included in the development of the "#GameIsNotOver" project":

- a. Visual. Videos are present along the project to help students' learning: the students are introduced to the project narrative through a video, they watch video tutorials in order to learn how to code, and they watch videos about how to perform a job interview. In addition, the creation of flowcharts to design the programming paths contributes to help the visual learners.
 - b. Kinesthetic. Students interact constantly with the computer. Moreover, the Scratch platform allows them to try every new step of the code that they create for their videogames, so they can continuously check the progress of their coding practices. Last, but not the least, they actively perform a job interview in semi-real setting.
 - c. Auditory. Students receive oral information and instructions about the different challenges. All the videos include audio with explanations about what is shown on it.
2. Diversity in learning pace. It is almost impossible that all students in a class finish a task at the same time. Every student has its own learning pace. It can be observed in a class that the diversity in learning pace does not have to be related to a diversity in the capacity of understanding contents. For instance, we can find students who obtain the highest grades but are really slow developing tasks because they are very perfectionist or take longer times to read and understand tasks. Although this is something to take into consideration in every subject, it becomes more important when the students are working with a computer in the classroom. If the faster learners finish their task and do not feel challenged to work in other tasks offered by the teacher: on the one hand, they can feel demotivated about the subject because they do not find it challenging enough; and, on the other hand, they can start using the computer to do things not requested by the teacher and sometimes not allowed in the class. For these reasons, in the “#GameIsNotOver” project, the diversity in learning pace has been considered by creating regular challenges that all students had to overcome, and extra-credit challenges, challenges that only students who finish the regular ones could do. For overcoming the extra-credit challenges the students obtain rewards cards instead of a grade, so the slowest students' grades do not get damaged by it.

3. Diversity in capacities. The three student's capacities that are going to influence the most in this project are:

- Language capacity. Although the level of English in the classroom is more or less similar (the majority of the students had an A2 or B1 level), we can find one student with a lower level, an A1, and between 2-3 students in each a class with a higher level, a B2:
 - The student with the A1 level, is a student with special-needs that not only presents difficulties with the language, but also with the content. Although she attends 2nd CSE, her level is according to 5th of Primary. In order to attend her diversity in language capacity, she is always paired in a group of three, instead of two, so she can receive extra help from her classmates and the classmates paired with her are not in disadvantage with the rest of the class. Her language diversity is attended by her group mates, who always help her with the language in order to understand what she has to do, and by the teacher, who provides this student with extra scaffolding as well as for some difficult tasks, she is allowed to develop them in Spanish (some writings, the job interview, the tests...).
 - The B2 level students are always paired with B1 students.
 - The rest of the students are mixed together.
- Digital-skills capacity. Despite it can be thought that this generation of students are digital natives, the reality is that not all of them have developed the necessary skills to overcome the tasks related to the digital component of the "Technology, Programming and Robotics" subject. All students have a great domain of how to use a mobile phone or a tablet for their own leisure, but a lot of them present a lack of experience and skills when they have to use a computer and digital tools for school purposes. Given the fact that this project is taking place in the third term of the school year, the teacher already knows the differences among the students, and uses that knowledge to pair students that present more difficulties with computer tasks with student that cope easily with them. This helps the students with difficulties to learn, to avoid frustration and to improve their perspectives about the subject.

- Logic and mathematical capacities. These skills are essential in all the challenges related to programming codes. Students need them to develop algorithms in order to create videogames. Different measures are taken into account to confront this type of diversity:
 - The scaffold strategy to create flowcharts before implementing the code on the Scratch platform to help students understand what they are creating and to structure their thinking.
 - Pairing students that present difficulties in the mathematical area with stronger students in the area. The information to pair them is provided by the Mathematics teachers.
 - Offering extra-credit challenges with more complex tasks for the more advanced students so that if they finish the regular tasks they keep feeling challenged to learn and face more difficult tasks without being detrimental for the rest.

4.7. Gamification mechanics.

In this section the gamification mechanics selected for the creation and implementation of the “#GameIsNotOver” project from the ones stated by Huang and Soman (2013:11-14) and above-mentioned in section 3.2 are going to be detailed:

1. Challenges. Each of the project tasks has been converted into a challenge. Each challenge includes specific instructions about how to develop it as well as information about how is going to be graded. Students face 15 regular challenges that are mandatory for all the students. The regular challenges can be divided in three categories:
 - a. Challenges related to language skills: in these challenges predominate the use and development of the listening, reading, speaking or writing skills in English.
 - b. Challenges related to programming skills: all the challenges in which students need to program and code videogames, as well as to create the flowcharts of their videogame algorithms.

- c. Challenges related to the work environment: in this section the challenges in which students have to do their own search about job interviews and curriculum vitae, the creation of their own curriculum vitae, the performance of the job interview are included.

Only if the students have already overcome a regular challenge and the next one has not been published yet, they can face the other type of challenges: the extra credit challenges. The students cannot get points through these challenges, but they obtain reward cards in exchange.

2. Points. Students receive points from each of the challenges they complete. They can receive 1, 2, 3 or 4 points being 1 the lowest and 4 the highest. Students will only receive a 0 if they have not done the work. The points are received in form of a stamp that they collect in their challenge cards (Appendix 3). There are four stamps (Appendix 4): Homework (1 point), Good job! (2 points), Great work (3 points) and Fantastic (4 points). In the case of the programming challenges, the students are told the amount of points that are going to receive when they ask to get their challenge checked by the teacher, and if the score is below the maximum, they have the option to improve it to get a higher score.
3. Leaderboard. The teacher keeps a leaderboard with the points of all the students and each week displays in the class different parts of it: the top 5, the top 10, the best player in a specific challenge... What to display is always carefully selected to promote motivation among the students and avoid demotivation for those who are lower ranked. By the end of the project every student has appeared at least once in the leaderboard.
4. Rewards. There are six reward cards created that students can earn through different procedures (Appendix 2). The six cards and its uses are:
 - a. Toilet card. The student can exchange this card for a visit to the toilet.
 - b. Music card. The student can exchange this card for listening to music during a class while s/he and her-his partner are working.
 - c. Present card. The student can exchange this card for a script of blocks s/he needs for a practice.

- d. Superteacher card. The student can exchange this card for 5 minutes of help from the teacher.
- e. Plickers' checked card. The student can exchange this card for a correct answer on a Plickers' test.
- f. +1 card. The student can exchange this card for an extra point on his/her final challenges score.

Each card can only be used once, and the students need to give it to the teacher when they want to use it in exchange for what it says on it. They can get reward cards in two different ways:

- By passing the extra credit challenges once they have finished a regular challenge and there is no new challenge published yet. Each extra credit challenge has a type of reward card assigned.
- When they pass a regular challenge, the teacher gives them a stamp on their challenge card. If they have:
 - 2 Fantastic or 3 Great Work., they get the Toilet card.
 - 3 Fantastic or 5 Great Work, they can select a card of the following: Music or Toilet.
 - 4 Fantastic or 6 Great Work, they can select a card of the following: Music, Toilet, or Present.
 - 5 Fantastic or 7 Great Work, they can select a card of the following: Music, Toilet, Present, or Superteacher.
 - 6 Fantastic or 8 Great Work, they get the Plickers' checked card.
 - 7 Fantastic or 9 Great Work, they can select a card of the following: Music, Toilet, Present, or Superteacher.
 - 8 Fantastic, they get a +1 card.
 - 9-15 Fantastic or 10-15 Great Work, they can select a card of the following Music, Toilet, Present, Superteacher, or Plickers' checked.

5. Storyline. The students are presented to the narrative of the project through a TV news video (Ballesteros, 2017) in which they watch that as a result of some terrorist attacks in an international congress of videogame programmers, there has been a shortage of video game programmers and society is going crazy thinking about the end of the videogames. A few days later, they receive more information about the events in a newspaper article format. Through this article, they find out that the major companies in the video game industry have come together and create a training program for students to turn them into videogame programmers. The students receive and invitation to enrol this training program that consists in a series of challenges that they will have to overcome in order to get a videogame programmer's certificate. Once they have completed their training, they will have the chance to be hired by one of the companies participating and work for them.

4.8. Materials.

The different materials that are going to be needed in order to implement and develop the “#GameIsNotOver” project are:

- Introductory video (Ballesteros, 2017).
- Sticky notes.
- #GameIsNotOver poster.
- *The New York Times*’ article and vocabulary activities (Appendix 1).
- #GameIsNotOver website (Ballesteros, 2019).
- Reward cards (Appendix 2).
- Challenge cards (Appendix 3).
- Marks’ stamps. (Appendix 4)
- Home classroom.
- Computer’s lab.
- Parent-teacher conferences offices.
- Welcome to the world of code video (e-skills UK, 2013).

- Scratch 2.0 overview video (Scratch Ed, 2013).
- Projector.
- Headphones (one per student).
- Audio jack splitters (one per computer).
- Google for Education accounts.
- Scratch and Lucidchart accounts.
- Plickers' cards (Appendix 5).
- Plickers' test 1: Introduction to Scratch (Appendix 6).
- Plickers' test 2: Final test.
- Power Point presentation for the final test (Appendix 7).
- Scratch tutorial videos.
- Pdfs with the guided practices (Appendix 8).
- Writing template: I would like to be a videogame programmer... (Appendix 9)
- Job related questions worksheet (Appendix 10).
- Curriculum vitae template.
- Job interview videos (Briya Classes, 2014), (ESL Learning, 2014).
- Job interview questions (Appendix 11).
- Job interview rubric (Appendix 12).
- Copy of the student's curriculum vitae.
- Teamwork rubric (Appendix 13).
- Videogames peer-assessment rubric (Appendix 14).
- Certificates of achievement (Appendix 16).
- Green, yellow and red stickers.
- Leaderboard.

4.9. Step-by-step account.

The “#GameIsNotOver” project takes place in 20 sessions from the third term. In these sessions, 15 different challenges are overcome by the students. Some of the challenges take place during the school sessions, and some take place as homework. A breakdown of each session can be found below.

4.9.1. Session 1.

This session is started by watching the introductory video to the storyline (Ballesteros, 2017). The students remain in their home classroom. After watching the video, students are asked to perform a “Think-Pair-Share” activity that consists on:

1. Think individually about these questions:
 - Do I play videogames? Which type? How much time?
 - How would affect me the end of the videogame industry?
 - Which consequences would the end of the videogame industry have for the world?
2. Talk with a partner about your answers and after discussing your outcomes write them on a sticky note.
3. Share with the class your thoughts and glue the sticky note to the #GameIsNotOver poster.

4.9.2. Session 2.

In this session students are sat in cooperative groups in their home classroom. Each group receives an article from the newspaper *The New York Times* (Appendix 1). The article describes part of the events known from the video they watched in the previous session but also includes new ideas for a solution of the problem. Students are instructed to read the text by the “Sharing Reading” technique:

- Each student has a number from 1-4 (in the group of five, the special-needs student and another member of the group chosen by the teacher share a number and work together).
- Student 1 starts reading paragraph 1 out loud and holding the paper so none of the other members of the group can see it.
- Student 2 tries to summarize orally what student 1 read.
- Student 3 adds details that student 2 left out.
- Student 4 writes down one or two sentences with the main ideas of the paragraph.
- Student 1 gives the article to Student 2 and s/he starts reading paragraph 2 and the process starts all over. The same for Students 3 and 4.

Before starting the activity, the teacher writes on the board the criteria that is going to use to evaluate the work. Once the activity has been completed, a member of each group will hand out the teacher the paper with the answers. The work will be corrected and graded based on the previous criteria.

Moving on to the next activity of the lesson, all students receive a copy of the *The New York Times'* article used before. They also receive a copy of a vocabulary worksheet (Appendix 1). The teacher explains the new activity. The newspaper article contains some bold words that need to match with the correct definition that appears on the worksheet crossword. They will have to complete the crossword through the "1-2-4" cooperative learning technique. The teacher reminds the students the rules of the technique and explains that one of the papers from a random member of the group will be chosen to evaluate the whole group. After that, the teacher writes on the board the criteria for the evaluation of the activity. The teacher is the one indicating when to pass from step 1 to 2, and to 4. At the end of the activity the teacher collects randomly one worksheet from each group to evaluate the activity.

This two activities complete Challenge 1.

4.9.3. Session 3.

This session takes place in the computer's lab. Students are already paired by the teacher taking into account the diversity studied in section 4.6. The session starts with the teacher giving back to each group the activities from the previous session corrected.

Students receive through email the link to the #GameIsNotOver website (Ballesteros, 2019). They get a few minutes to explore it by themselves and after that they comment the website taking turns out loud. Next, the registration process starts and each of the students complete the registration form included in the *Join us!* section of the website. Once each of them has been registered and received the confirmation email, the doorman of the schools appears with a sealed envelope claiming that a deliveryman has left it in the concierge's office. The teacher opens the envelope that contains the challenge cards (Appendix 3). She hands out a challenge card to each of the students and they complete their personal details on them.

Next, the teacher selects a few students to read out loud the reward cards system explained in the project website and she solves all the doubts the students present about it. Once they have the points and reward cards system clear, the students receive their first stamps with points from Challenge 1.

4.9.4. Session 4.

This session and all the upcoming ones, unless otherwise stated, take place in the computer's lab. The teacher starts the lesson showing the students the video "Welcome to the world of code" (e-skills UK, 2013). After watching it, the teacher opens a dialog in the class with the following questions:

- What is coding?
- Can you name different things that need to be coded in order to work?
- Can you name different programming languages?
- How many developers were needed to create the first version of Angry Birds? How long did it take?

- Can you specify the function of the different developers that work creating an app?

After closing the dialog, the teacher projects a second video, “Scratch 2.0 overview” (Scratch Ed, 2013). This video is about the platform that the students are going to use to program their videogames. Once they have watched the video, the students are instructed to turn on their computers, create their own account on the Scratch platform and start exploring the interface. Having given them 5 minutes to explore the platform, the students receive a post in Google Classroom with a pdf that includes basic information about the Scratch interface such as the name of the different parts and their function. They have to review the pdf and identify the different parts of the Scratch platform. There is a round of doubts in the class and after that, the students receive a Plickers’ card (Appendix 5) to take an online test in the Plickers’⁴ platform about an introduction to Scratch (Appendix 6). They can consult how the test is going to be graded in the project website (Ballesteros, 2019) in the Challenge 2 section.

Once they have finished the test, they receive their own stamp on their challenge cards.

4.9.5. Sessions 5-10.

Along these 6 sessions, students receive in Google Classroom the following information in order to overcome Challenges 3-6:

- A set of instructions of each programming challenge explaining what they have to do and the order to do it.
- A set of pdfs that include the guided practices.
- A set of tutorial videos to complete the guided practices.

In addition to that information, the students can consult the main instructions and how they are going to be graded in each of the challenges in the project website (Ballesteros, 2019) in the corresponding challenge section.

⁴ A Web 2.0 tool to perform multiple-choice online test

During these sessions, students have to complete Challenges 3-6 that consist on learning the basics of block programming on the Scratch platform. Besides these challenges, if any of the pairs finish them earlier, they can move on to the extra credit challenges. All the information related to the extra credit challenges such as instructions, tutorial videos or which reward card the students will win if they overcome the challenge appears in its specific section of the project website (Ballesteros, 2019).

4.9.6. Session 11.

In this session, students need to start a sketch of their final videogame for Challenge 7. They have to use the knowledge acquired with the previous practices to create their own videogame. In order to organize their ideas and to facilitate them the process of programming, the teacher explains the students what a flowchart is and how it is used in programming to organize ideas and to sketch programs. Once the main ideas of how to create a flowchart are explained and after the teacher shows them an example, the students are required to create an account in the website Lucidchart⁵ and to create their own flowchart for their final videogame.

In addition to this task, before finishing the lesson, the teacher gives the students a piece of paper (Appendix 9) that corresponds to Challenge 8. In that piece of paper each student needs to write 7 lines in English explaining which type of videogame programmer they would like to be, detailing which type of videogames they would like to create, for which type of people they would like to create the videogames and explaining why. The teacher explains the task and shows the student the grading criteria that is on the project website (Ballesteros, 2019). She also explains them that the task will not be done during class because it is a homework task that will be collected the following session. The writings will be graded by the language assistant.

⁵ A Web 2.0 tool to create online diagrams and flowcharts

4.9.7. Sessions 12-14.

During these three sessions, students have to implement the draft of their videogame from the flowchart into the Scratch platform. Students with an advance programming level are challenged to add extra features in their videogames in exchange for reward cards (adding levels and different screens of the videogame, having different players, including sounds, etc.).

At the end of session 13, students receive a copy of the job-related questions worksheet (Appendix 10). They are asked to complete the worksheet at home, encouraging them to dialog with their families about the topic first, and only if they cannot figure out an answer with them, move on to the use of the Internet. With this activity, the teacher is looking for the interaction and communication between the students and their families. The worksheet is collected at the beginning of session 14 and it will be graded by the language assistant following the grading criteria that appears on the Challenge 9 section of the project website (Ballesteros, 2019).

4.9.8. Session 15.

In this session, students perform a test about programming contents using Scratch through the Plickers' platform. At the beginning of the class, they receive a draft paper that can use to write ideas or paths in order to solve the questions of the test, and a Plickers' card (Appendix 5). The teacher will first open the Plickers' test, but instead of projecting the Plickers' interface to the student, she will project a Power Point presentation (Appendix 7) that includes the questions and multiple-choice answers of the test. This presentation has been created because some of the answers are images and the Plickers' platform does not allow to insert images as answers. Despite not showing the Plickers' interface to the student, the teacher will use it to read the students answers and to process the responses.

For each question, the students have some minutes to process the question and to select an answer. After the thinking time is done, the teacher says: "cards up", and the students show the teacher the selected answer that the teacher reads using her mobile phone.

After finishing the test, the teacher processes the answers and gives the students the corresponding stamp in relation to the mark obtained in the test to complete Challenge 10.

4.9.9. Session 16.

To continue the storyline of the project, once the students have acquired the programming skills, they need to get prepared for the hiring process of the videogame companies. After having researched a bit about the elements involved in a process of hiring with the homework worksheet of Challenge 9 already described, the students move on to the next challenge, Challenge 11, that consists on creating their own curriculum vitae in this session.

They receive a model of a curriculum vitae through Google Classroom, as well as the instructions to create their own. They have to use a curriculum vitae template from Google Docs and complete it with their personal information. While the students are completing their template, the teacher and the language assistant go around the class helping and correcting the students spelling and grammar mistakes in their works.

At the end of the class, and in case any of the students did not have enough time to complete it, at the end of the day, the students need to hand in their curriculum vitae in a pdf format through Google Classroom. Their work will be graded together by the teacher and the language assistant following the grading criteria included in the project website (Ballesteros, 2019) and including feedback information about the flaws and virtues of each of the works through Google Classroom.

4.9.10. Session 17.

In this session, students are going to learn how to perform in a job interview. For that purpose, the teacher plays two different videos that show an interview setting. In the first video (Briya Classes, 2014) is shown a bad example of a performance in a job interview. Once the first video has been played, the teacher asks the students the following questions:

- What is the impression you get from the applicant?
- How is the applicant and the job interviewer dressed up like?
- What do you think about the type of questions the interviewer does?
- What do you think about the type of answers the applicant uses?
- Would you hire the applicant after this interview? Why?

After having analysed the first video, the teacher plays the second one (ESL Learning, 2014). In this video, the applicant and the interviewer use basic conversation skills to do the interview and they do not ask many questions or give too many details but follows a good example of interview. After playing the video, the teacher repeats the same questions as in the previous video and the students answer them.

To continue the session, the students receive a list of job interview questions (Appendix 11) that need to answer individually in document created in Google Docs and need to submit through Google Classroom. If the task (Challenge 12) is not finished in class, it will be finished at home.

4.9.11. Session 18.

This session takes place in the home classroom. Students get in pairs (the same ones they had in the computer's lab) and have to take turns being the applicant and the interviewer performing a job interview. They use the questions they had to answer in the previous session to ask and respond in the job interview.

During the session, the teacher and the language assistant go around the class giving feedback to each of the pairs.

At the end of the session, the teacher explains the students that during the two following sessions they will perform a real job interview. She gives the turns each student will have for the interview. The teacher also projects the rubric the interviewers will use to evaluate the students, so they know beforehand what to focus on.

4.9.12. Sessions 19-20.

A few weeks before these sessions, the teacher had communicated with the student's parents in order to ask for volunteers to help performing the job interviews. The only requests were: to be available at any of the dates of the two sessions and have enough English level to be able to communicate and perform the job interview. A total of 12 parents among both classes volunteered.

Before starting the session, the teacher meets with the parents and provides them with a list of the students they are going to be interviewing and its order, the set of the job interview questions the students had rehearsed in class, the rubric to evaluate them and a copy of the curriculum vitae of each of the students that are going to interview. The parents are always placed with students that are not their own children for ethics reasons.

At the beginning of the two sessions, the parents are located in the parent-teacher conferences offices. The students, who already knew its order and which office to go, start going one by one to perform the job interview as Challenge 13. Each job interview lasts five minutes on average.

Meanwhile, the rest of the students stay in the computer's lab with the teacher (both sessions) and the language assistant (the second session). The students in the computer's lab have to perform the last two challenges. On the one hand, Challenge 14 consists on filling in the teamwork evaluation form (Appendix 13). In that form, they have to evaluate their partner's performance, and its own performance. On the other hand, Challenge 15 consists on evaluating the final videogame that the different pairs had developed. Each pair of student receives a peer-assessment rubric (Appendix 14). Students have to go around the computer's lab playing the different videogames created by their classmates and evaluating them with a green (excellent), yellow (good) or red (improvable) sticker.

At the end of each of the sessions, the teacher meets with the parents to obtain the feedback from the interviews and the evaluation rubrics completed.

After the last session, the teacher collects all the challenge cards to stamp the last points obtained. At the beginning of the following session, she gives them the cards with their final grade back and a certificate of achievement (Appendix 16).

4.10. Evaluation.

In this section, we are going to focus on the evaluation of the project through different perspectives. In order to do that, we are going to start stating the evaluation criteria and learning standards established in the educational law that applies to the “Technology, Programming and Robotics” subject, to later add other specific evaluation criteria and learning standards related to the language. Once these criteria and standards are clear, the different tools that are going to be used to assess students are going to be described. Lastly, a reflection about the evaluation of the teaching practice is going to be included.

4.10.1. Content evaluation criteria and learning standards.

In the *DECRETO 48/2015*, we can find the evaluation criteria (indicated with numbers) and learning standards (indicated with letters) related to the “Technology, Programming and Robotics” contents that are going to be taught in this project:

1. To analyse different levels of programming languages.
 - a. The student identifies the characteristics of low-level programming languages.
 - b. The student represents through flow charts different algorithms.
2. To use a block programming environment.
 - a. The student describes the developed process of an animation or videogame and lists the main phases of its development.
 - b. The student easily uses different basic tools from the programming environment.
 - c. The student sets and moves objects to a given direction.
 - d. The student starts and stops the execution of a program.

- e. The student modifies, through edition, the appearance of objects. S/he creates new objects: characters, backdrops and sounds.
 - f. The student handles the main groups of blocks from the programming environment.
 - g. The student easily uses the execution control commands: conditionals and loops.
 - h. The student adequately uses variables and lists.
 - i. The student handles with ease the interaction between the elements of a program.
 - j. The student analyses the functioning of a program from its programming blocks.
 - k. The student identifies and considers the implications of the “design for all” philosophy in the programs that develops.
3. To describe Web 2.0 apps, its main characteristics, registration procedures and use them in a responsible way.
- a. The student uses responsibly tools to create, store and share documents in the Cloud.
 - b. The student uses responsibly education and training tools.
 - c. The student uses responsibly tools to create flowcharts.
4. To act in a way open to dialogue and responsibly during the teamwork along all phases of the project.
- a. The student collaborates with its team members to reach the final solution.
 - b. The student dialogues, thinks and argues his/her proposals and the ones offers by other members of the group.
 - c. The student takes responsibility of his own part of the project and the final project.

4.10.2. Language evaluation criteria and learning standards.

The evaluation criteria (indicated with numbers) and learning standards (indicated with letters) related to the L2 that are going to be taken into account in this project are:

1. To develop Basic Interpersonal Communicative Skills (BICS) (Cummins, 1999:3-6).
 - a. The student understands written and oral instructions given by the teacher or language assistant.
 - b. The student interacts with the teacher and classmates by asking questions, answering them or dialoguing.
 - c. The student uses pertinent body language in communication.
2. To develop Cognitive Academic Language Proficiency (CALPS) (Cummins, 1999:3-6).
 - a. The student understands and uses vocabulary related to computer science, programming, work and education.
 - b. The student understands oral messages displayed in video format.
 - c. The student comprehends and obtains main ideas from readings related to the project topic.
 - d. The student composes brief written texts with basic cohesion elements.
 - e. The student uses basic orthographic and punctuation rules in writing productions.
 - f. The student produces oral communication in an interview setting.

4.10.3. Tools for the students' evaluation.

On the one hand, students are going to receive formative assessment during the sessions by the teacher and the language assistant. They will guide and help students both with language and content difficulties. For example, they will give different types

of corrective feedback during the creation of the curriculum vitae and during the job interview rehearsal. As marked by Petty (2009:480), the learners will also formatively assess themselves and each other thanks to cooperative work.

On the other hand, the students are going to receive summative assessment in each of the challenges. We can differentiate challenges that include a holistic rubric that says what is going to be evaluated and how many points are going to be given for it (Challenge 1, 3, 4, 5, 6, 7, 8, 9, 11, 12), challenges that are going to be evaluated by a test that also include how many points are going to be given for each score on the test (Challenge 2, 10), and challenges that include analytic rubrics (Challenge 13, 14, 15).

The holistic rubrics vary depending on the activity that is going to be evaluated. They appear on the project website (Ballesteros, 2019) in each of the challenges. For example, the holistic rubric for Challenge 4 is:

- 0 → You haven't done the guided practices and the drawing.
- 1 → You have done the guided practices but not the drawing.
- 2 → You have done the guided practices and the drawing. It is an easy-level drawing.
- 3 → You have done the guided practices and the drawing. It is a medium-level drawing.
- 4 → You have done the guided practices and the drawing. It is a high-level drawing.

Taking this rubric into account, students know before-hand what is going to be evaluated from their challenge. All challenges are evaluated in a scale 0-4. Depending on the mark the students obtain in each challenge, they receive a different stamp (Appendix 4) on their challenge cards (Appendix 3):

- 0 points = Keep Working
- 1 point = Homework
- 2 points = Good Job
- 3 points = Great Work
- 4 points = Fantastic

In addition, it is important to mention that especially in the programming challenges, students are given the chance to improve their programs when they ask the teacher to get their challenge evaluated. If for example, in the given example of Challenge 4, a student asked the teacher to get it evaluated, and the teacher checks that s/he has the guided practices done and evaluates the drawing as an easy-level drawing, the student has the chance to obtain 2 points and the *Good Job* stamp or improve the drawing to get a better grade.

Moving on to the second type of evaluation of the challenges, the Plickers' test, the teacher creates a battery of questions with their answers and add the list of students to a class. The chosen questions are added to a class and when the test takes place, those questions are shown on a screen (Appendix 6). Students see the questions and the optional answers and have to choose an answer by showing their Plickers' card (Appendix 5) to the teacher, who will read the card using a mobile phone or tablet with the Plickers' app installed on it. Automatically the teacher sees who is answering correct and who is not. This tool has been chosen for the evaluation for three reasons:

1. Students did all the programming challenges in pairs, for that matter, it was considered as necessary to include some individual grades of the programming skills to ensure all students work on the practices and none of them take advantage of their partner's programming abilities.
2. Plickers allow teachers to test students through multiple choice question in a quick way and creates a scoresheet of each test with details of the results of each of the students for every question.
3. Plickers motivates the student to get tested. They see the test as a game and helps them overcome insecurities that can arise in written tests.

Despite being Plickers a great tool to test, there was a setback when trying to implement the test for Challenge 10 on the website. Plickers does not allow to add images as answers. For that reason, it was necessary to create an alternative version of the Plickers' test in this challenge to show it to the student in a Power Point presentation version (Appendix 7), and just use the Plickers' app to read the answers.

In the two challenges that use a Plickers' test, students can also find on the project website (Ballesteros, 2019) the number of points that are going to be given in relation to the score obtained in the test. For instance, in Challenge 10 the points given were:

- 0 → You have a score of less than 30% on the Plickers' test.
- 1 → You have a score between 30-49% on the Plickers' test.
- 2 → You have a score between 50-65% on the Plickers' test.
- 3 → You have a score between 66-90% on the Plickers' test.
- 4 → You have a score more than 90% on the Plickers' test.

Next, we are going to focus on the challenges that use analytic rubrics. Despite the students are going to obtain a score on each of the rubrics that are going to be presented, there is an equivalence between these grades obtained in the rubrics and the points given by the teacher that can be found on each of the challenges in the project website (Ballesteros, 2019).

In the first place, the job interview from Challenge 13 is going to be evaluated by the parents that perform as interviewers. They receive a copy of the rubric (Appendix 12) and complete one of them for each of the students. The students know in advance what they are going to be evaluated about because there is a copy of that rubric on Challenge 13 in the project website (Ballesteros, 2019).

In the second place, for Challenge 14, students have to self-evaluate and evaluate their practices partners using the teamwork evaluation rubric (Appendix 13). The rubric has been implemented in the tool CoRubrics, an add-on for Google Sheets created by the teacher Jaime Feliu (2017). This is a very useful tool that allows you to create a rubric, add the students' names and emails, and the program creates by itself a Google Form with the rubric. If the rubric is only going to be used by the teacher, you complete a Google Form per student (it also includes an option to add personal comments as feedback). If the rubric is going to be used by the students as self or peer assessment, there is an option to send automatically the link of the Google Form to the students' emails, so they can easily assess their classmates or themselves. After the forms have been completed, the tool collects all the grades and comments on the spreadsheet where the teacher created the rubric. In this case, students complete a form

evaluating themselves and other one evaluating their partner. In addition, the teacher completes a form evaluating each of the students.

Lastly, in Challenge 15, students need to evaluate the videogames their classmates created. The tool chosen for this evaluation, although it follows the pattern of a rubric, it was created to be easy to use and fun. Students have a copy of the rubric (Appendix 14) in each of the computers where they are going to try the videogames. They also have small stickers of three colours: green, yellow and red. After playing each videogame they have to stick the sticker of the colour they think their classmates deserve for their work in each of the categories included in the rubric: green for an excellent job, yellow for a good job, and red for a job that could be improved.

To conclude, I would like to explain the reason why all the rubrics and the points given to students follow a 4-points scale. First, although in the challenges it is possible to obtain a 0 (that would make the scale a 5-point one), it is necessary to clarify that only students who have not done anything in the challenge can obtain that grade, so the evaluation of the work would still be in a 4-point scale. The main reasons why this scale has been chosen is to avoid grading students in the middle mark and to have a small range of options in which is easier to categorise the students.

4.10.4. Evaluation of the teaching practice.

A well-known quote from Lord Kevin says “To measure is to know. If you can’t measure it, you can’t improve it.” Referring to this quote, I want to highlight the importance of the evaluation of the teaching practice in the teaching-learning process. This type of evaluation gives teacher the chance to reflect about what s/he has accomplished in the classroom, the effectiveness of the methodologies used, the strongest and weakest points of the project, etc.; and use that reflection to improve the teaching practice the next time that is going to be carried out.

In order to accomplish this purpose, a self- evaluation rubric will be completed by the teacher at the end of the project (Appendix 15). Analysing the results obtained in the rubric and the observations made, the teacher will analyse the weakest and strongest points of the project and will think variations of the weakest parts to improve

and apply the next time the project is developed, or the next time a similar activity is carried out in the class.

5. RESULTS AND DISCUSSION.

Taking into account that the #GameIsNotOver project has already been developed in a classroom setting (Ballesteros, 2016-2019), in this section the results obtained during the implementation of the project, as well as the assets and pitfalls, and suggestions for improvement are going to be described.

To begin with, students showed a high level of excitement and motivation during the whole project, even those whose thinking and logic skills were less developed. On the one hand, the project offered the students a diversity of activities that required different type of skills, so every student could shine at least in a few challenges. On the other hand, the reward system of cards and points instead of real grades removed the fear to fail that many students had before, relaxing them and letting them experiment and overcome the tasks easily.

In addition, all students completed every challenge, and if they did not get a good score, they tried again in order to get more points, so that they could earn reward cards. Consequently, they scored higher than other groups in the previous years in the final test because they were better prepared for it. They had been learning without completely realising of it.

Furthermore, students accepted challenges related to L2 skills as part of the game and not as extra work. Even the students with higher language difficulties got involved in this type of tasks. If language tests would have been passed, probably, they had shown that the students' level of English improved. It is also important to mention that students valued the fact that English was used to face real life situations such as watching a news clip, reading a newspaper article, writing a curriculum vitae or performing a job interview. Students learnt English with a purpose and a utility.

Needless to say, the participation of the parents in the project was a complete success. When planning the project, I was not sure that my request was going to be fulfilled. Although the presence and participation of parents in the school activities is very common in Infant and Primary levels, it is very rare in CSE. On top of that, I needed parents that not only wanted to participate, had availability during school hours, but also had enough English level to perform the interview. All parents were emailed with a description of the project and a request to

participate. They were asked to maintain it in secret, so the identity of the interviewers would be a surprise until the day of the interviews. Most of the parents answered back congratulating me about the project and telling me how excited their children were about the first challenges and the storyline. Despite a lot of them had to refuse to participate due to the difficulties with the English, a total of 12 parents among both classes offered as volunteers. Two of them were native speakers and for the rest, English was their second language. This initiative was a success because of the specific context of this school, where a high number of parents have completed the higher education and have a good domain of English. Obviously, in a different context the situation would have been completely different.

Additionally, the figure of the language assistant was also a positive influence in the success of the project. A gamification project requires a lot of extra work for the teacher inside and outside the classroom: materials to prepare, assignments to grade, feedback to give, etc. The language assistant helped reviewing the materials prepared for the students to check spelling and expression, he helped grading some of the students' writing assignments, but what was the most important, he helped students given them continuous feedback during sessions about their performance in tasks related to language skills, as well as during their interaction with other students or the teacher.

Finally, I would like to point out a few suggestions for improvement. The first one is related to the evaluation of the project. I think it would be important to obtain information about the students' point of view about the project, their motivation through the development of it, their perspective about how much they have learnt, etc. For this purpose, it would be a good idea to develop a questionnaire with questions related to that and pass it to the students to fill it out. The second one is related to the evaluation of the English level of the students. In order to prove that this project helps students to improve their L2 language skills, it could be developed a language test that students have to take before and after the project. By comparing the individual results more detailed conclusions in terms of the effects of the project to the students' language proficiency could be obtained.

6. CONCLUSIONS.

Throughout this dissertation, we have dealt with a combination of two student-centered methodologies: CLIL and gamification. A review of its main features was developed, as well as a detailed description of bilingualism and CLIL applied in the Community of Madrid. This set the basis to design and implement a gamification project for the subject “Technology, Programming and Robotics” for 2nd CSE students. The need to develop the project has been justified, as well as the context in which the project was going to be applied has been provided. The gamification project, called #GameIsNotOver, has been drawn up taking into account the contents, evaluation criteria and learning standards established by the educational legislation of the Community of Madrid. Along this paper, it has been described the objectives of the project, the relation of the project with the key competences, how the diversity was going to be attended, the game mechanics that were going to be applied, the materials and resources needed, and how students were going to be evaluated, providing the specific evaluation tools that were going to be used. A description of each of the sessions of the project has also been included. Taking into consideration the results of having implemented the project already in a classroom setting, a discussion about the project assets, pitfalls and some suggestion for improvement has also been incorporated.

Moving on to the review of the objectives set at the beginning of this essay, it can be affirmed that the general objective of developing a gamification project for the “Technology, Programming and Robotics” subject of 2nd CSE to motivate students in their learning practice and to fully integrate the CLIL methodology on it has been successfully completed. In terms of the specific objectives, after having implemented the project in the classroom setting, it can be confirmed that all students have been involved in the learning practice; students have developed their communication skills in the L2 (a test would be necessary to prove that the students’ level of proficiency in English has improved); the activities and challenges that students had to overcome were connected to their present life (topic of videogames) and their future life (how to prepare for the work environment); by including this dissertation in the universities data base other teachers can access it and become familiar with gamification, and also, a brief description of the project along with the materials used on it are included on my e-portfolio (Ballesteros, 2016-2019), so other teachers can learnt from it; and lastly, the results observed in the classroom show the benefits of applying gamification as a teaching-learning methodology.

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8. APPENDICES.

8.1. Appendix 1. *New York Times*' article and activities.

The New York Times

IS THE GAME OVER? NOT YET!

Two days ago devastating news arrived to the world. At least 14 bombs exploded while the 1st International Congress of Videogame Programmers was **taking place** in Silicon Valley, CA. Companies in the videogame industry from all over the world had sent their programmers to this event. More than 10.000 experts were attending the conferences when the horrific blasts took place. After a first period of chaos and a lot of work from the emergency services and hundreds of citizens that volunteered in the rescue efforts, the numbers have **raised** to more than 8.000 deaths and over 2.000 people in critical condition.

After the first feelings from the world citizens of anger and terror for the terrorist attack, a new feeling of **uncertainty** about the future of the videogame industry **has spread** all over the world. The major videogame companies have lost most of their videogame programmers. They all are in a state of crisis. Players from all over the world are afraid that the end of the videogames has arrived. They can't imagine a life without videogames and they are sharing that with the world. There have been **demonstrations** all over the world in protest of the attack. The **hashtag** #GamelsNotOver has been **trending topic** since the attack. They want to claim that this is not the end.

Since the attack, the debate **has arisen**. People **weren't aware** of the importance of the videogames in our **daily** lives. Videogames are **commonly** seen as something for kids and teenagers, or an entertainment for the **geeks**. However, videogames are present in almost everyone's life since the appearance of the smartphones and tablets. Not many people can say they have never played a videogame (Candy Crush, Angry Birds, Clash of Clans, Fifa, Mario Bross...). Could you imagine no more levels on Candy Crush? Or no FIFA 2019? Society has started to realize of the importance of videogames and wants to ensure that this business is able to continue to exist. How will be this possible?

Rivalry have been **put aside** between these companies and their directors have agreed on a meeting to try to find a solution about the **shortage** of videogame programmers. The first ideas point to the young students. Fresh brains in development, the perfect **target** to be trained in programming. Companies are talking about an international training at school to start forming the videogame programmers of our closest future. More information will be released after they finish designing the whole plan that has been named as Game Is Not Over in response of the hashtag used by their clients.

Figure 2: *New York Times*' article⁶

⁶ Unless otherwise stated all the images have been designed by myself.

Read the New York Time's article through the Sharing Reading technique in your cooperative groups.

PARAGRAPH 1:

PARAGRAPH 2:

PARAGRAPH 3:

PARAGRAPH 4:

1. Find the correct definition for each of the words in bold from the article using the 1-2-4 technique to complete the crossword:



ACROSS

- 3 The condition of not having enough of something
- 5 A public exhibition of the opinion of a group of people toward a controversial issue usually by walking and marching together with signs
- 6 A person usually very intelligent and socially awkward
- 9 To be conscious of something
- 10 A person or thing in which an action is directed to
- 12 To separate and not take into account
- 14 Something that occurs usually
- 15 The state of being rivals or enemies
- 16 The state of doubt and unpredictability

DOWN

- 1 An important issue that is on fashion on the social networks
- 2 Symbol used in social networks to create and find topics
- 4 To increase in amount.
- 7 The action of expand something
- 8 To originate
- 11 To happen, to occur
- 13 Something that you do or happens every day

Figure 3: Crossword activity

8.1. Appendix 2. Reward cards.

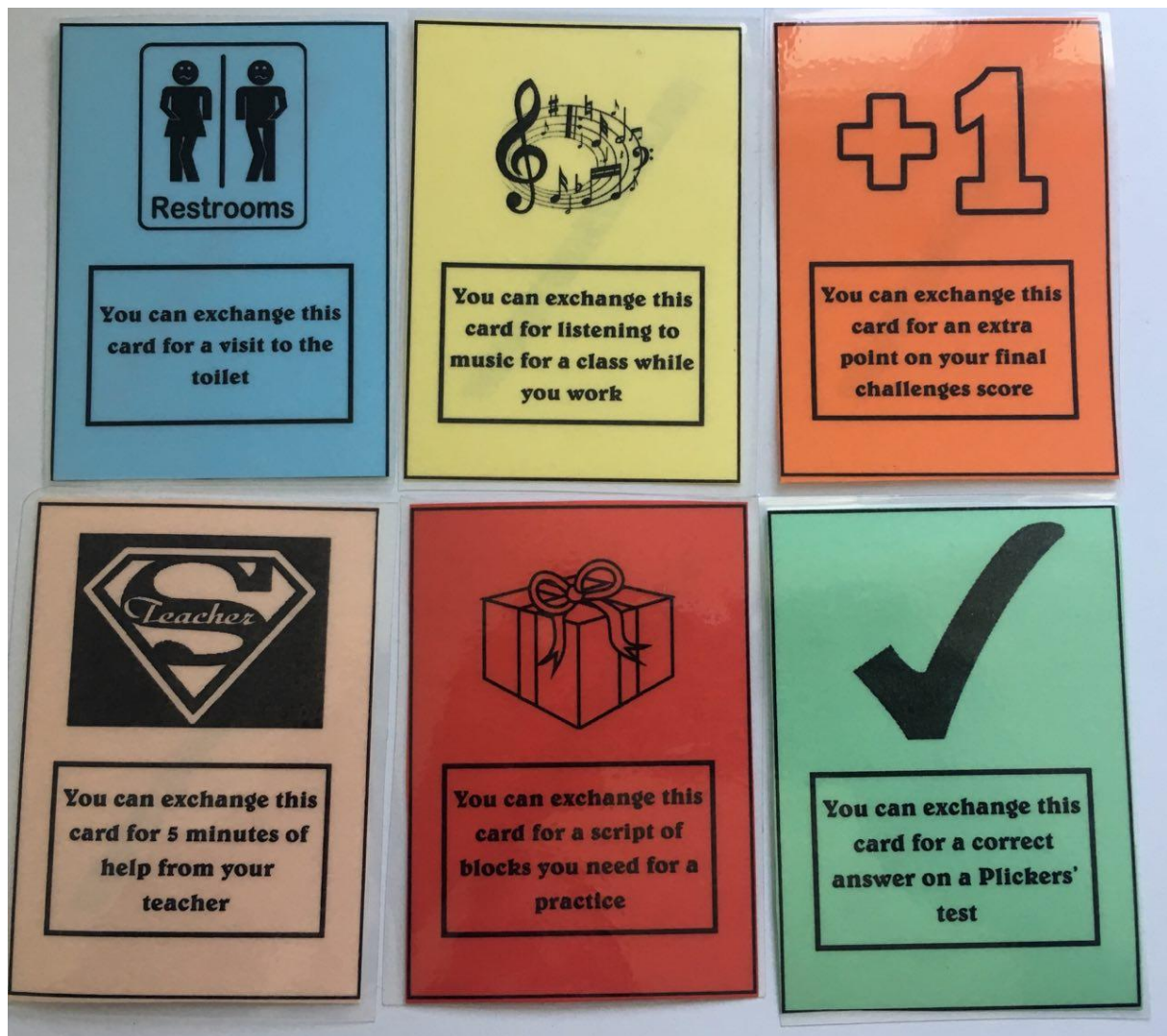


Figure 4: Reward cards

8.2. Appendix 3. Challenge card.

NAME: _____

SCHOOL: _____

CHALLENGE CARD



Figure 5: Front side of the challenge card

CHALLENGE 1	CHALLENGE 2	CHALLENGE 3	CHALLENGE 4	CHALLENGE 5
CHALLENGE 6	CHALLENGE 7	CHALLENGE 8	CHALLENGE 9	CHALLENGE 10
CHALLENGE 11	CHALLENGE 12	CHALLENGE 13	CHALLENGE 14	CHALLENGE 15

Figure 6: Back side of the challenge card

8.3. Appendix 4. Stamps.



Figure 7: Stamps

8.4. Appendix 5. Plickers' cards.

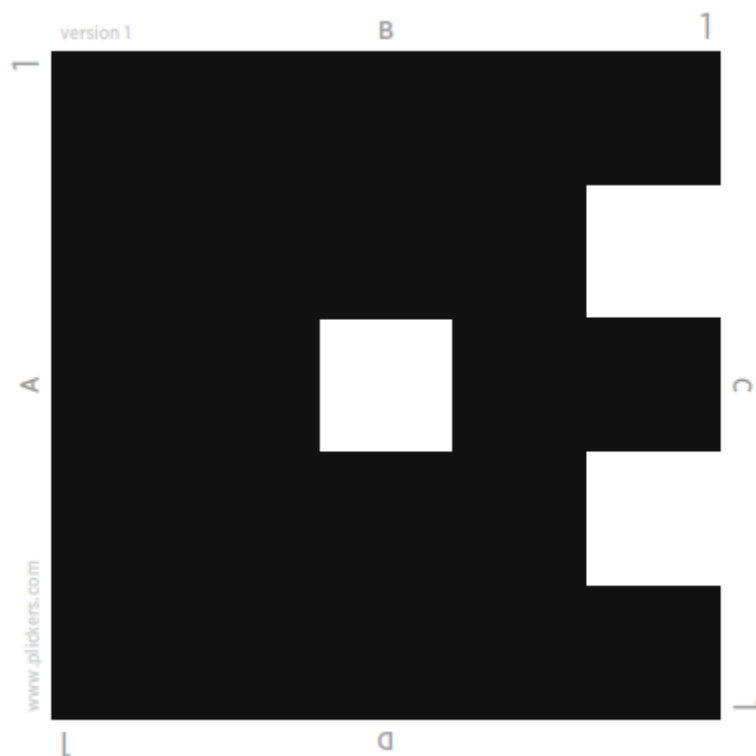


Figure 8: Plickers' card sample (Plickers, 2019)

8.5. Appendix 6. Plickers' test 1: Introduction to Scratch.

Where you can see what happens when you run your scripts.

- ☐ A Sprite
- ☐ B Script
- ☐ C Blocks
- ☐ D Stage

The appearance of the sprite on the stage.

- ☐ A Dress
- ☐ B Design
- ☐ C Costume
- ☐ D Script

In the top center of the Scratch editor, there are three that say "Scripts", "Costumes", and "Sounds".

- ☐ A Tabs
- ☐ B Stage
- ☐ C Sprite
- ☐ D Codes

A Scratch character. Each one has its own scripts, costumes, and sounds. They are shown on the stage and in the bottom left part of the screen.

- ☐ A Script
- ☐ B Stage
- ☐ C Costume
- ☐ D Sprite

A list of colored rectangles and types of blocks. We use them to look at lists of the different kinds of blocks.

- ☐ A Script
- ☐ B Tabs
- ☐ C Sprite
- ☐ D Stage

A group of connected blocks that does something when you double click on it.

- ☐ A Sprite
- ☐ B Costume
- ☐ C Script
- ☐ D Tabs

Figure 9: Plickers' test 1: Introduction to Scratch

8.6. Appendix 7. Power Point presentation for the final test.

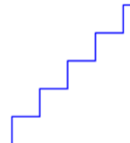
1. Which picture does this next script draw?



A)



B)



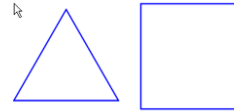
C)



D)



2- If I have the script to draw a triangle, do I have to turn **MORE** or **LESS** at each corner to draw a square?



A) MORE because you have to draw more for a more sided shape.

B) LESS because the outer angle is smaller.

C) LESS because each side is shorter

D) MORE because the inner angle is bigger.

3- What does **my number** equal after we run the script below?



- A) 10
- B) 13
- C) 3
- D) 23

4- What is the value of x after the script below is run?



- A) 7
- B) 10
- C) 4
- D) 17

Figure 10: Power Point presentation for the final test. Part 1

5- What is the value of x after the script below is run?



- A) 7
- B) 10
- C) 4
- D) 17

6- What is the value of x after the script below is run?



- A) 70
- B) 40
- C) 20
- D) 0

7- Which script will increase the score more rapidly when the sprite is touching the cat?

SCRIPT A



SCRIPT B



- A) A
- B) B
- C) Both will change score at the same rate

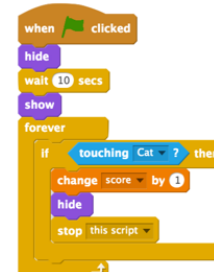
8- We are creating a game where there is a special item the cat is supposed to collect. The item should show up at a surprising time so the cat can't predict when it will be on the stage. Once the cat touches this item, the score will increase and then the special item will disappear. The item is only supposed to be collected once.

Which script correctly programs the collectable item?

A)



B)



C)



D)

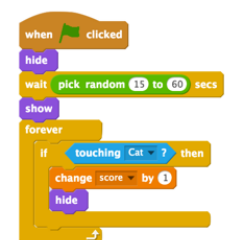


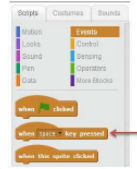
Figure 11: Power Point presentation for the final test. Part 2

8.7. Appendix 8. Sample Scratch guided practices.

INTRODUCTION TO SCRATCH

HAT BLOCKS

- Watch the video (Video_4 Hat Blocks).
- Look at the Events tab and you'll find a piece near the top that says "when _____ key pressed."
- Modify your "Drawing shapes" code to make your Sprite draw different shapes every time you press a different key.



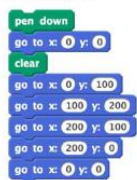
MOVING THE CAT

- Watch the videos (Video 5_The X and Y axis, and Video 6_Change and Set the X and Y positions).
- Will these two scripts do the same thing? Answer this first question before trying it in Scratch!



EXERCISE: DRAWING WITH COORDINATES

- Try making a picture of a house like the one described below:

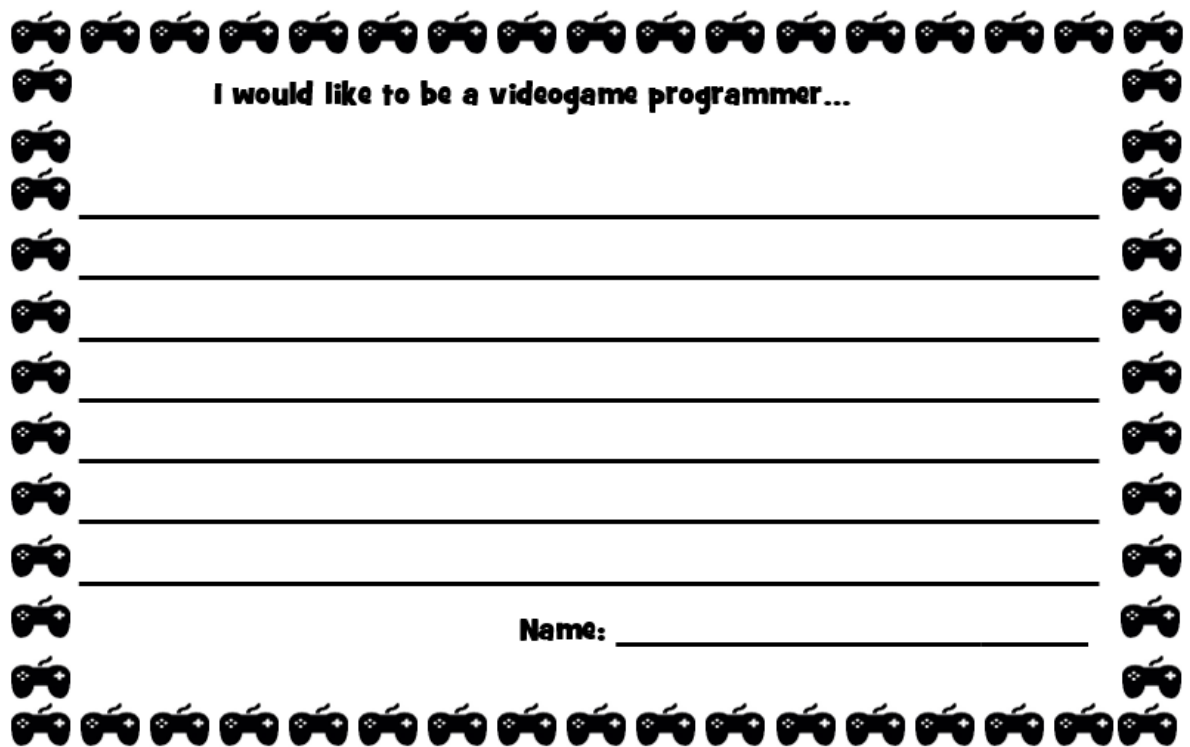


- Now use your imagination to draw a picture using coordinates.



Figure 12: Sample Scratch guided practices

8.8.Appendix 9. Writing template: I would like to be a videogame programmer...



I would like to be a videogame programmer...

Name: _____

Figure 13: Writing template

8.9.Appendix 10. Job related questions worksheet.

Name:

RESUME AND JOB INTERVIEW

1. What's a resume or CV? Why is it used for?

2. Which type of information do you include in a resume or CV?

3. Find the name of 3 online platforms used to look for a job.

4. What's a job interview?

5. How do you think you should dress for a job interview?

6. Write 6 questions that could be asked in a job interview.



Figure 14: Job related questions worksheet

8.10. Appendix 11. Job interview questions.

JOB INTERVIEW QUESTIONS

1. Can you tell me a little about yourself?
2. Do you prefer to work alone or on a team? Why?
3. Why do you want to work creating videogames?
4. Which type of videogames would you like to create?
5. What are you passionate about?
6. What are your goals for the future?
7. What interests you about this job?
8. What is your greatest strength?
9. What is your greatest weakness?
10. Why should we hire you?
11. How do you handle stress and pressure?
12. Describe a difficult situation/project at school and how you overcame it.



Remember you need to come well dressed to your job interview
(bring the uniform in a bag to change after the interview)

Figure 15: Job interview questions

8.11. Appendix 12. Job interview rubric.

INTERVIEWER'S NAME: _____

(Evaluate with 1-2-3-4, being 4 the highest, each of the items)

Candidate's name:	
Dress Code	
Body language (confidence, eye contact, posture...)	
Communication skills (good use of the language, no hesitation, good volume...)	
Answers (clarity, appropriate responses, extended responses...)	

Figure 16: Job interview rubric

8.12. Appendix 13. Teamwork rubric.

	EXPERT	ADVANCED	APPRENTICE	NOVEL	WEIGHT
	4	3	2	1	
Working with others	Almost always listens to, shares with, and supports the efforts of others. Tries to keep the team working well together.	Usually listens to, shares with, and supports the efforts of others. Does not cause arguments in the team.	Often listens to, shares with, and supports the efforts of others but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Often is not a good team member.	25%
Contributions	Almost always provides useful ideas when participating in a team. Shows a lot of effort.	Usually provides useful ideas when participating in a team. Tries hard to do his/her best.	Sometimes provides useful ideas when participating in a team. Only does what is required.	Rarely provides useful ideas when participating in a team. May refuse to participate.	25%
Time management	Almost always uses time well through the project to ensure things get done on time. Team doesn't have to adjust work responsibilities because of his/her timewasting.	Usually uses time well through the project but may have procrastinated on one thing. Team doesn't have to adjust work responsibilities because of his/her timewasting.	Tends to procrastinate, but always gets things done by the deadlines. Team doesn't have to adjust work responsibilities because of his/her timewasting.	Rarely gets things done by the deadlines and team has to adjust work responsibilities because of his/her inadequate time management.	25%
Quality of work	Provides work of the highest quality	Provides work of fine quality	Provides work of poor quality	Provides work of bad quality	25%

Chart 1: Teamwork rubric

8.13. **Appendix 14. Videogames peer-assessment rubric.**

	Designers' names:
Clarity of instructions	
Programming skills	
Creativity	
Degree of fun	

Chart 2: Videogames peer-assessment rubric

8.14. Appendix 15. Evaluation of the teaching practice rubric.

Items	Score	Observations
The contents, objectives, evaluation criteria and grading criteria are established and known by the students before each activity is carried out.		
Scaffolding strategies are used to help the students.		
The acquisition of contents is facilitated by the use of diverse methodologies.		
Students are offered a variety of activities (warm up, motivational, application, consolidation, review, extension and evaluation).		
Activities help students to improve their language skills.		
The activities relate the contents of the subject to the daily life of the students.		
The autonomy of the students is promoted.		
Students receive personalised feedback about the tasks performed and how to improve them.		
Diverse evaluation tools are used to assess students.		
Families have been involved in their children's learning process.		
The scheduling of the contents estimated in the subject syllabus is fulfilled.		

Chart 3: Evaluation of the teaching practice rubric

8.15. Appendix 16. Certificate of achievement.



Figure 17: Certificate of achievement