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Educación y Sociedad: Pensamiento e innovación para la transformación social

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#GameIsNotOver: Gamification applied to "Technology, Programming, and Robotics". An overview of a CLIL proposal.

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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 they 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. In the latter, the role of teachers evolves to be a mere helper, guide, or facilitator (Ang et al., 2001), whereas the students' role assumes importance and remains central in the learning process, transforming students into "active participants in learning and co-constructors of knowledge" (Meece, 2003). 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).

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, tasked-based learning, the use of ICT, CLIL, and gamification, among others (Baeten et al., 2010). Teachers combine them and use them in order to reach out students and involve them in their own learning. In spite of the fact that this paper focuses on CLIL and gamification as the two main methodologies applied in the above-mentioned project, it should be underlined that other methodologies such as cooperative learning, project-based learning, and the use of ICT will also be considered.

Why CLIL? Firstly, context is one of the most determining factors that the implementation of CLIL depends on (Bruton, 2013). This involves that any CLIL subject should be taught taking into account the students' language possibilities. In addition, CLIL increases the exposure to authentic language in class for students, as pointed out by Pérez Cañado (2013), what produces a boost of the students' 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 Casado, 2015).

Why gamification? As stated by Palazón Herrera (2015), 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). For these reasons and due to the specific context of the students participating in the project

described in this paper, the approach has relied on gamification as the main methodology involved in the project.

2. Gamification project: #GameIsNotOver.

2.1. Justification.

The development of this project arose from the problems detected by one of the authors after several years teaching the subject "Technology, Programming, and Robotics" (TPR) in 2nd CSE. The lessons about the contents related to the programming block were organized following a more traditional approach. Every session, different programming commands were explained to the students and, afterwards, they had to perform a series of tasks 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 tasks completed in class as well as to pass a paper and pencil multiple-choice test. By using this methodology, the following problems were detected:

- Lack of motivation of a high number of students, especially in the case of those whose thinking and logic skills were less developed.
- Drop out of difficult tasks even without trying them on the part of the students that found them too challenging.
- Difficulty to foster all four skills of the L2 during the tasks.

After conducting a self-evaluation of her own teaching practice, the teacher realised that the approach used to teach these concepts was not the most suitable for her students and decided to explore other methodologies to improve the result. The goal was to find a way to teach students at the same time that they were motivated, not leaving anyone behind, but also not stopping advanced students from learning more. In addition, another aim was to integrate more language skills to promote the development of the L2. Bearing these ideas in mind, and after analysing different methodologies, gamification was chosen as the starting point, and the "#GameIsNotOver" project was born.

2.2. Contextualization.

The project was developed in a charter school in downtown Madrid (Spain) where all levels are taught from Infant Education to Non-Compulsory Secondary Education (NCSE), although this paper will just focus on Compulsory Secondary Education (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 of one extra session of English per week (a total of 5 sessions per week) and TPR lessons in English (2 sessions per week). The school is involved in the Bilingual English Development and Assessment (BEDA) program of bilingualism run by both *Escuelas Católicas* and Cambridge English Language Assessment for catholic schools in Spain. Every content TPR teacher is helped by a Foreign Language Assistant (FLA) one hour per week and per group.

Moving on to the participants in the project, 49 2nd CSE students were selected to take part in it during the TPR class. They were divided into two groups (A and B, consisting of 24 and 25 students, respectively) and both were taught by means of the same methodology. Their level of English ranged from an A1 to a B2 according to the *CEFR* (Council of Europe, 2001): 1 student from one group had an A1 level, 12-15 students from each class had an A2 level, 8-11 students from each group 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.

2.3. Objectives.

The objectives of this project came from two areas: the content objectives (related to the specific contents of the TPR subject) and the language objectives (related to the development of skills in the L2, namely English). These objectives can be found in the following chart:

Content objetives	Language objectives
Students can search and select meaningful information from the Internet.	Students properly follow basic orthographic and punctuation rules in writing productions.
Students can analyse a problem and find an algorithm to solve it.	Students can read and understand written texts.
Students can implement algorithms in flowcharts.	Students comprehend oral messages displayed in video format.
Students can develop videogames on the Scratch platform.	Students can produce brief oral communication related to lesson tasks.
Students can use Google Docs to create online and shareable documents.	Students can compose brief written texts with basic cohesion elements.
Students know how to use Google Classroom to get the instructions for the activities and to hand them in to the teacher.	Students understand vocabulary related to computer science, programming, work, and education.
Students can design their own curriculum vitae.	Students use pertinent body language in communication.
Students can have a job interview.	Students can have a job interview.

Table 1. Project's objectives

2.4. Contents.

The curricular contents of the TPR subject were published in the *Decreto 48/2015*. TPR 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. This decree includes the following contents that were included in the project:

- Analysis and resolution of problems through algorithms.
- Tools for block programming.
- Applications and services for the Internet and new tendencies on the Net.

Once the general contents of the subject were determined, attention is going to be paid to the specific contents that were developed through the project as well as to the cross-curricular ones. These contents were divided into three groups and can be consulted in the following chart:

Contents related to the content subject	Contents related to language skills	Cross-curricular contents
Creation of flowcharts to do the design of videogames.	Vocabulary related to computer science, programming, work, and education.	Impact of videogames on society.
Transformation of flowcharts into algorithms to design videogames.	Comprehension of oral messages displayed in video format.	Design of a curriculum vitae.
Development of videogames by block programming.	Production of brief oral communication related to lesson tasks: comments, dialogues, instructions, questions, etc.	Development of a job interview.
Use of Cloud Computing tools to store and share files.	Production of oral texts in an interview setting.	
Use of Web 2.0 tools to create and edit documents.	Use of basic orthographic and punctuation rules in writing productions.	
	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.

Table 2. Project's contents.

2.5. Attention to diversity.

Student's diversity is a reality inside the classroom that teachers should take into account when planning, teaching, and assessing. For this project, attention to diversity focused on the following issues:

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). According to the VAK model of learning styles developed by Barbe et al. (1988), there are three learning modalities: visual, auditory, and kinaesthetic. These three modalities were included in the development of the "#GameIsNotOver" project":

- Visual. Videos are used along the project to help students' learning: students were introduced to the project narrative through a video and they watched not only video tutorials to learn how to code, but also videos about how to perform a job interview. In addition, the creation of flowcharts to design the programming paths contributed to helping visual learners.
- Auditory. Students received oral information and instructions about the different challenges. All the videos included audio with explanations about what was shown on each.
- Kinaesthetic. Students interacted constantly with the computer. Moreover, the Scratch platform allowed them to try every new step of the code that they created for their videogames, so they could continually check the progress of their coding practices. Last, but not least, they actively conducted a job interview in a semi-real setting.

2. Diversity in learning pace. It is almost impossible that all students in a group finish a task at the same time. Every student has her/his own learning pace. For this reason, in the "#GameIsNotOver" project, the diversity in learning pace was considered by creating regular challenges that all students had to overcome and extra-credit challenges, a type of challenges that only students who had finished the regular ones could face. As a result of overcoming the extra-credit challenges, those students obtained reward cards instead of a grade, so slower students' grades were not negatively affected by this measure.

3. Diversity in capacities. The three students' capacities that influence this project the most are:

- Language capacity. The use of the CLIL methodology helped to attend this type of diversity. Firstly, the student with the A1 level, who was a student with special-needs that not only presented difficulties with the language, but also with the content, was always paired in a group of three, instead of two, so she could receive extra help from her classmates and the classmates paired with her were not at a disadvantage with the rest of the class. Her language diversity was attended by her group mates, who always helped her with the language in order to understand what she had to do, and by the teacher, who provided her with extra scaffolding as well for some difficult tasks. In addition, the B2 level students were always paired with B1 students and the rest of the students were mixed together. Different

scaffolding strategies integrated in the CLIL approach were used in order to help students with language difficulties: closed captions in the videos, use of online dictionaries, help from the language assistant, and cooperative learning strategies, among others.

- Digital-skills capacity. Given the fact that this project took place in the third term of the school year, the teacher already knew the differences among the students and used that knowledge to pair students presenting more difficulties with computer tasks with students that coped easily with them. This helped the students with difficulties to learn, to avoid frustration, and to improve their perspectives on 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 were 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 were creating and to structure their thinking.
    - Pairing students that presented difficulties in the mathematical area with stronger students in that area.
    - Offering extra-credit challenges with more complex tasks for the more advanced students so that, if they finished the regular tasks, they kept feeling challenged to learn and face more difficult tasks without being detrimental for the rest.

2.6. 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) are going to be detailed. Each of the project tasks was converted into a challenge. Each challenge included specific instructions about how to develop it as well as information about how it was going to be graded. Students faced 15 regular challenges that were mandatory for all of them. They can be divided into three categories: challenges related to language skills (the use and development of the listening, reading, speaking, or writing skills in English predominated in them), challenges related to programming skills (the ones in which students needed to program and code videogames, as well as to create the flowcharts of their videogame algorithms), and challenges related to the work environment (the ones connected with the job interviews and the creation of their own curriculum vitae). Only when students had already overcome a regular challenge and the next one had not been published yet, they could face the extra credit challenges. Students did not get points through them, but they obtained reward cards in exchange.

From each of the challenges students completed, they received points. They could get 1, 2, 3, or 4, points, 1 being the lowest and 4, the highest. The points were received in the shape of a stamp that they collected in their challenge cards. In the case of the programming challenges, students were told the amount of points that they were going to receive when they asked the teacher to get their challenge checked by her, and if the score was below the maximum, they had the option to improve it to get a higher score. The teacher kept a leaderboard with the points of all the students and each week displayed in the class different parts of it: the top 5, the top 10, the best player in a specific challenge, etc. What information to display was always carefully selected to foster motivation among students and avoid demotivation for those who are ranked lower. By the end of the project every student had appeared at least once in the leaderboard.

In addition to points, students could earn reward cards through different procedures: by passing the extra credit challenges or when collecting a fixed number of stamps of a required punctuation. There are six different cards that students can exchange for what is included between round brackets: the toilet card (for a visit to the toilet), the music card (for listening to music during a class while s/he and her/his partner are working), the present card (for a script of blocks s/he needs for a practice session), the superteacher card (for 5 minutes of help from the teacher), the Plickers' card (for a correct answer on a Plickers' test), and the +1 card (for an extra point on her/his final challenges score).

Moreover, the project was built on a storyline. Students were presented the narrative of the project through a TV news video (Ballesteros Aceituno, 2017) in which they were told that, as a result of some terrorist attacks in an international congress of videogame programmers, there was a shortage of video game programmers and society was going crazy thinking about the end of videogames. A few days later, they received more information about the events in a newspaper article format. After reading this article, they found out that the major companies in the video game industry had come together and created a training program for students to become videogame programmers. Students received an invitation to enrol on this training program that consisted in a series of challenges that they would have to overcome in order to get a videogame programmer's certificate. Once they completed their training, they would have the chance to be hired by one of the companies involved and to work for them.

2.7.Materials.

Materials required		
Introductory video (Ballesteros Aceituno, 2017)	*The New York Times*' article and vocabulary activities	#GameIsNotOver website (Ballesteros Aceituno, 2019)
Sticky notes	#GameIsNotOver poster	Reward cards
Challenge cards	Marks' stamps	Computer's lab
Parent-teacher conferences offices	Welcome to the world of code video (e-skills UK, 2013)	Scratch 2.0 overview video (Creative Computing Lab, 2013)
Projector	Headphones	Audio jack splitters
Google for Education accounts	Scratch and Lucidchart accounts	Plickers' cards
Plickers' test 1: Introduction to Scratch	Plickers' test 2: Final test	Power Point presentation for the final test
Scratch tutorial videos	.pdf files with the guided practices	Job-related questions worksheet
Writing template: "I would like to be a videogame programmer…"	Job interview videos (Briya Classes, 2014; ESL Learning, 2014)	Curriculum vitae template
Job interview questions	Job interview rubric	Teamwork rubric
Videogames' peer-assessment rubric	Certificates of achievement	Leaderboard

Table 3. Materials required.

2.8. Step-by-step account.

The "#GameIsNotOver" project took place in 20 sessions within the third term. In those sessions, 15 different challenges were overcome by students. Some of the challenges took place during school sessions and some as homework. A breakdown of each session can be found in the tables below.

Session 1	Session 2	Session 3
1. Students watched the introductory video to the storyline (Ballesteros Aceituno, 2017). 2. "Think-Pair-Share" activity: *Think* individually about these questions: Do I play videogames? Which type? How much time? How	1. Each cooperative group received an article form the newspaper *The New York Times*. The article described part of the events mentioned in the video they had watched in the previous session. Students were instructed to read	1. Students received through email the link to the #GameIsNotOver website (Ballesteros Aceituno, 2019). They had to explore it by themselves and, after tha,t they commented on the website taking turns.

would the end of the videogame industry affect me? Which consequences would it have for the world? Pair and talk with a partner about your answers and, after discussing your outcomes, write them on a sticky note. Share with the class your thoughts and glue the sticky note to the #GameIsNotOver poster.	the text by the "Sharing Reading" cooperative learning technique. 2. Students received a copy of a vocabulary worksheet. The newspaper article contained some bold words that needed to match with the correct definition that appeared on the worksheet crossword. They had to complete the crossword through the "1-2-4" cooperative learning technique. These two activities completed Challenge 1.	2. Students completed the registration form included in the "Join us!" section of the website. 3. Students received a challenge card and they had to provide their personal details on it. 4. Students received their first stamps with points from Challenge 1.

Table 4. Sessions 1-3 description.

Session 4	Sessions 5-10	Session 11
1. Students watched the video "Welcome to the world of code" (e-skills UK, 2013) and all together, orally, replied the 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? 2. Students watched the video "Scratch 2.0 overview" (Creative Computing Lab, 2013). 3. Students signed up in Scratch. 4. Students read a file with basic information about the Scratch interface. 5. Students took an online test in the Plickers' platform about an introduction to Scratch. These activities completed Challenge 2.	Along these 6 sessions, students received in Google Classroom the following information in order to overcome Challenges 3-6: a) A set of instructions of each programming challenge explaining what they had to do and the order to do it. b) A set of .pdf files that included the guided practices. c) A set of tutorial videos to complete the guided practices. During these sessions, students had to complete Challenges 3-6 that consisted in learning the basics of block programming on the Scratch platform. Besides these challenges, if any of the pairs finished them earlier, they could move on to the extra credit challenges. All the information related to the extra credit challenges appeared in its specific section of the project website (Ballesteros Aceituno, 2019).	Students had to start a sketch of their final videogame for Challenge 7: 1. The teacher explained the students what a flowchart is and how it is used in programming to organize ideas and to sketch programs. 2. Students were required to create an account on the website Lucidchart and to create their own flowchart for their final videogame. 3. Students received the "I would like to be a videogame programmer…" worksheet for homework that corresponds to Challenge 8. In that document each student had 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 them, and explaining why.

Table 5. Sessions 4-11 description.

Sessions 12-14	Session 15	Session 16
1. During these three sessions, students had to implement the draft of their videogame from the flowchart into the Scratch platform. Students with an advanced programming level were challenged to add extra features in their videogames in exchange for reward cards. 2. At the end of session 13, students received a copy of the job-related questions worksheet for homework. This would be Challenge 9.	Students took a test about programming contents using Scratch through the Plickers' platform. This activity completed Challenge 10.	1. Students received a model of a curriculum vitae through Google Classroom, as well as the instructions to create their own. 2. They had to use a curriculum vitae template from Google Docs and complete it with their personal information. 3. Students had to hand in their curriculum vitae in a pdf format through Google Classroom. This activity completed Challenge 11.

Table 6. Sessions 12-16 description.

Session 17	Session 18	Sessions 19-20
1. The teacher played two different videos that showed an interview setting. The first video (Briya Classes, 2014) showed an example of a bad performance in a job interview and the second one (ESL Learning, 2014) a good one. 2. Students discussed the two situations analysing the different attitudes shown on them. 3. Students received a list of job interview questions that they had to answer individually in a document created in Google Docs and to submit through Google Classroom. These tasks completed Challenge 12.	1. Students worked with their computer's lab partner and role-played a job interview taking turns like the applicant and the interviewer. They used the questions they had to answer in the previous session. 2. At the end of the session, the teacher explained the students that during the following two sessions they would perform a real job interview. She showed the turns each student would have for the interview. The teacher also projected the rubric the interviewers would use to evaluate students, so they knew beforehand what to focus on.	1. 12 parents among both classes volunteered to be the job interviewers. Each of them received the list of students to interview, their curricula vitae, the list of questions for the job interview, and the rubric to evaluate them. The parents were always placed with students that were not their own children for ethics reasons. Students had their job interview. (Challenge 13) 2. While the student was not taking the job interview, (s)he had to fill in the teamwork evaluation form. (Challenge 14) 3. Students played the different videogames created by their classmates and evaluated them with a green (excellent), yellow (good) or red (improvable) sticker. (Challenge 15)

Table 7. Sessions 17-20 description.

2.9. Evaluation.

The *Decreto 48/2015* includes the evaluation criteria related to the TPR contents that were taught in this project:

- To analyse different levels of programming languages.
- To use a block programming environment.
- To describe Web 2.0 apps, their main characteristics and registration procedures, and to use them in a responsible way.
- To act in a way, open to dialogue and responsibly during the teamwork tasks throughout the project.

In addition, since TPR is a subject taught in a foreign language, the following evaluation criteria related to the L2 were also taken into account:

- To develop Basic Interpersonal Communicative Skills (BICS) (Cummins, 1999).
- To develop Cognitive Academic Language Proficiency Skills (CALPS) (Cummins, 1999).

On the one hand, students benefitted from formative assessment during the sessions by both the teacher and the language assistant. They guided and helped students both with language and content difficulties. For example, they gave different types of corrective feedback during the creation of the curriculum vitae and during the job interview rehearsal. As underscored by Petty (2009), learners also formatively assessed themselves and each other thanks to cooperative work.

On the other hand, students were provided with summative assessment in each of the challenges. A distinction can be drawn among three types of challenges: the ones including a holistic rubric stating what was going to be evaluated and how many points were going to be given for it in the form of a stamp (Challenges 1, 3, 4, 5, 6, 7, 8, 9, 11, and 12), the ones that were going to be evaluated by a test that also included the number of points that were going to be given for each score on the test (Challenges 2 and 10), and finally the ones including analytic

rubrics (Challenges 13, 14, and 15). The reasons why all the rubrics and the points given to students followed a 4-point scale were, firstly, to avoid grading students in the middle mark and, secondly, to have a narrow range of options in which it was easier to categorise students.

3. Results and discussion.

Taking into account that the #GameIsNotOver project has already been developed in a real classroom setting, in this section the results obtained during the project implementation will 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, students were provided with a diversity of activities that required different types 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 of failing that many students had before, let them relax as well as experiment and perform the tasks easily.

In addition, all students completed every challenge and, when 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. Moreover, they had been learning without completely realising 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 they had taken language tests, they would probably have shown that the students' level of English had improved. It is also important to mention that students valued the fact that English was used to face real life situations. Therefore, students learnt English with a purpose.

Needless to say, the parents' participation in the project was an extraordinary success. Although the presence and involvement of parents in the school activities is very common at Infant and Primary Education levels, it is very rare in CSE. Despite a lot of them had to refuse to participate due to their difficulties with English, 12 parents from both classes offered as volunteers. This initiative was successful, among other reasons, because of the specific context of this school, where a high number of parents are former students (that is, they had previously completed CSE and/or NCSE in the same school) and had a good command of English. Obviously, in another context, the situation would have been completely different.

Additionally, the role played by the FLA was also a positive influence on the success of the project. Any gamification project requires a lot of extra work for teachers both inside and outside the classroom, including, for instance, materials to prepare, assignments to grade, feedback to give, etc. The FLA helped by reviewing the materials prepared for students (check both spelling and expression), grading some of the students' writing assignments, and, what was the most important, giving students continuous feedback during sessions (about their performance in tasks related to language skills), as well as during their interactions with other students or the teacher herself.

Bibliography.

- Ang. R. P., González, M. C. T., Liwag, M. E. C. D., Santos, B. S., & Vistro-Yu, C. P. (2001). Elements of student centered learning. Loyola Schools, Ateneo de Manila University.
- Baeten, M., Kyndt, E., Struyven, K., & Dochy, F. (2010). Using student-centred learning environments to stimulate deep approaches to learning: Factors encouraging or

discouraging their effectiveness. Educational Research Review, 5, 243-260. https://doi.org/10.1016/j.edurev.2010.06.001

- Ballesteros Aceituno, B. (2017). Intro Gamification #GameIsNotOVer [Video]. YouTube. https://bit.ly/3GLXeGW
- Ballesteros Aceituno, B. (2022, March 22). Game is not over. https://bit.ly/3BfLLhL
- Barbe, W., Swassing, R., & Milone, M. (1988). Teaching through modality strengths. Zaner-Bloser.
- Briya Classes. (2014). Job interview (bad example) [Video]. YouTube. https://bit.ly/3oIijvP
- Bruton, A. (2013). CLIL: Some of the reasons why … and why not. System, 41, 587–597. https://doi.org/10.1016/j.system.2013.07.001
- Calle Casado, J. J. (2015). Teacher training for CLIL: Lessons learned and ways forward. [End of Degree Project, Universidad de Jaén] TAUJA: Repositorio de Trabajos Académicos de la Universidad de Jaén. https://bit.ly/3JltLoW
- Creative Computing Lab (2013). Scratch 2.0 Overview video [Video]. YouTube. https://bit.ly/3gFOdEM
- Cummins, J. (1999). BICS and CALP: Clarifying the distinction. ED 438 551 https://bit.ly/3srdlEE
- Decreto 48/2015, de 14 de mayo, del Consejo de Gobierno, por el que se establece para la Comunidad de Madrid el currículo de la Educación Secundaria Obligatoria. Boletín Oficial de la Comunidad de Madrid 118, de 20 de mayo de 2015: 10-309. https://bit.ly/3oGd1kw
- Dicheva, D., Dichev, C., Agre, G., & Angelova, G. (2015). Gamification in education: A systematic mapping study. Journal of Educational Technology & Society, 18, 75–88. https://bit.ly/3JizUSN
- e-skills UK. (2013). Welcome to the world of code [Video]. YouTube. https://bit.ly/3JjxYK2
- ESL Learning. (2014). Job interview: I want to learn (ESL) [Video]. YouTube. https://bit.ly/3Beh3pb
- Huang, W. H.-Y. & Soman, D. (2013). A practitioner's guide to gamification of education. University of Toronto. https://bit.ly/3JjkSfF
- James, W. B., & Gardner, D. L. (1995) Learning styles: Implications for distance learning. New Directions for Adult and Continuing Education, 67, 19–32. https://doi.org/10.1002/ace.36719956705
- Law, W. K. (2007). Frontiers for learner-centered IS education. Journal of Information Systems Education, 18, 313–320. https://bit.ly/3rIbCfi
- Meece, J. L. (2003). Applying learner-centered principles to middle school education. Theory into Practice, 42, 109–116. https://bit.ly/3oIv3T4
- Palazón Herrera, J. (2015). Motivación del alumnado de educación secundaria a través del uso de insignias digitales. Opción, 31, 1059–1079. https://bit.ly/3HI0xAn
- Pérez Cañado, M. L. (2013). Introduction. Revista de Lenguas para Fines Específicos, 19, 12–27. https://bit.ly/3GJeZXF
- Petty, G. (2009). Teaching today. A practical guide. Nelson Thornes.