

Ejemplo práctico de gamificación para alumnos españoles de educación secundaria

A Practical Example of Gamification for Secondary Spanish Students

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Resumen

La gamificación es el proceso de aplicar elementos y procedimientos de juego, como recompensas, retos y puntos, a actividades no lúdicas. En el ámbito educativo, la gamificación tiene como objetivo aumentar la motivación y el interés de los alumnos por las asignaturas que les enseñamos.

Una de las ventajas de la gamificación en la educación es que ayuda a los estudiantes a desarrollar habilidades importantes, como la resolución de problemas y el pensamiento crítico. Además, puede mejorar la motivación y el interés de los estudiantes en el aprendizaje, ya que les permite ver la educación como algo más divertido y desafiante, aumentando así su implicación.

Sin embargo, los docentes conocen bien los inconvenientes de la gamificación. Uno de los principales problemas es que puede distraer a los alumnos de los objetivos educativos reales, que es aprender. Asimismo, la gamificación no es fácil de implementar y requiere un gran esfuerzo para desarrollar y mantener los juegos y las actividades educativas.

Existen aplicaciones que utilizan retos y recompensas para motivar a los alumnos a aprender mientras juegan. Sin embargo, eso no es lo que estamos buscando al hablar de transformar nuestras unidades didácticas en unidades didácticas gamificadas. Eso implica mucho más y es eso lo que vamos a aprender en este artículo, para ser capaces de crear una unidad didáctica gamificada efectiva.

Palabras clave: gamificación, unidad didáctica gamificada, alumnos, profesor, recompensas, actividad, reto, juego.

Abstract

Gamification is the process through which gaming elements and procedures, such as challenges and points, are used in nongame activities. Regarding the educational field, gamification's goal is to raise students' motivation and interest towards the subjects we are teaching.

One of the advantages of gamification in Education is the fact that it helps students develop important life skills such as problem-solving and critical thinking. Additionally, it can enhance students' motivation and interest in learning, as it allows them to view education as more fun and challenging, thereby increasing their engagement.

However, teachers are well aware of the drawbacks of gamification. One of the main problems is that it can distract students from real educational objectives, which is learning. Moreover, gamification is not easy to implement and requires significant effort to develop and maintain games and educational activities.

There are applications that use challenges and rewards to motivate students to learn while playing. However, that's not what we're aiming for when talking about transforming our teaching units into gamified teaching units. It involves much more, and that's what we're going to learn about through this article: to be able to create an effective gamified teaching unit.

Key words: gamification, gamified teaching unit, students, teacher, rewards, activity, challenge, game.

1. INTRODUCTION

Gamification is a relatively new field, and as such, it is still developing a theoretical framework. However, there are several key theories and frameworks that are commonly used to understand and design gamified experiences.

One of the most remarkable ones is the so-called Self-Determination Theory (SDT) which is based on motivation, since it states that people are motivated by their inherent psychological needs for autonomy, competence, and relatedness. Therefore, gamification can be used to support these needs by providing users with a sense of control over their experience, opportunities to learn and develop new skills, and social interactions with others.

It is also important to mention the Flow Theory which is a psychological theory that describes the state of being completely immersed and engaged in an activity. Thus, gamification can be used to create flow by providing users with clear goals, feedback on their progress, and challenges that are matched to their skill level.

From the Behavioral economics perspective, which is a field of study that applies psychological insights to economic decision-making, gamification can be used to nudge users toward desired behaviors by providing incentives, creating social norms, and framing choices in a way that makes desired outcomes more salient.

Overall, the theoretical framework of gamification is still evolving as the field grows and matures. Gamification designers draw on a variety of theories and frameworks to create engaging and effective experiences that motivate users to take desired actions, learn new skills, and solve problems.

2. METHODOLOGY

Since the aim of gamification is to increase engagement, motivation, and participation, as Burke (2014), Werbach and Hunter (2012) explain, our methodology is going to be based in communication in English, since they need to communicate with each other and with the teacher in English, but also on behavioral psychology whose target is to motivate users to engage in desired behaviors. This involves creating a rewards system that reinforces positive behaviors and encourages users to continue engaging with

the system. For example, badges, points, and levels can be used to reward users for completing specific tasks or achieving specific goals.

Having into consideration that we are creating a gamified unit, we also need to use a methodology based on gaming. There are several methodologies we may find useful according to Kapp (2012). The first useful methodology is the game mechanics, which is a methodology that involves using game mechanics, such as challenges, quests, and competitions, to create an engaging and motivating experience. Game mechanics can be used to create a sense of progression, challenge, and achievement, which can increase engagement and motivation; The game design principles, which involves using game design principles, such as narrative, characters, and themes, to create an immersive and engaging experience. By creating a compelling story or theme, users can become emotionally invested in the experience, which can increase motivation and engagement; the Feedback loops, which involves providing users with feedback on their progress and performance. Feedback can be used to reinforce positive behaviors and encourage users to continue engaging with the system. For example, progress bars, notifications, and leaderboards can be used to provide feedback on user performance and progress; and last but not least, the personalization methodology which involves tailoring the gamification experience to the individual user. By understanding the user's goals, preferences, and behavior, the gamification experience can be customized to meet their needs and increase engagement. Personalization can be achieved through techniques such as adaptive difficulty, personalized rewards, and personalized feedback.

3. GETTING STARTED

In order to create our unit, there are many steps to follow and many considerations and decisions to take before truly getting started. We need to know how games work (Schell, 2008) and we need know different platforms and resources to use (Ferrara, 2015) Once the year for which we are going to create our gamification has been decided, the first step to create gamification is finding the topic. Our didactic unit is designed for 3ºESO and it is included in the subject of English as a foreign language curriculum. Regarding the topic, it is historical and it is to be set in the Modern Ages. Therefore, the next step is deciding how we are going to reward our

students for overcoming the games. Since the gamification will be set in the Modern Ages, instead of points, they will be rewarded with an ancient currency: the shilling. These shillings need to be useful for them so they can buy things with them. Our students will be provided with a vouchers book of rewards they will be able to buy with the earned shillings. Obviously, these rewards are to be something they will be happy to have within the academic context. Another interesting aspect of these vouchers is that the vouchers book is shared within the team, so they need to agree on who they allow to keep the rewards. Thus, we will be not only elevating their competitive part, but also their generosity and team-work skills.

It is of great importance to remember that in the creation and design of gamified units, the esthetics are very significant so every element needs to be in compliance with the rest of them: logotype, background of the web-page, name of the gamification...

Figure 1
Shillings



Figure 2
Rewards to buy

REWARDS	SHILLINGS
You can hand in your homework one day later	15
You are allowed to go the toilet	10
You get a positive	20
The day the teacher decides you get to choose a game or a video	25
You have 2 minutes extra at the beginning of the exam	15
You are allowed to talk in class without raising your hand during a period	20
You are allowed to decide where to sit during a period	25
You choose the punishment of a classmate who is misbehaving	30
You get a good comment in your agenda	25
You are allowed to chew gum in class	30

The next step is to decide how to measure the progress of the students, since every game consists of going to the next level. When you get to the next level, your character is upgraded. In this unit our character will begin as a Peasant when having between 0 and 20 shillings, then it will be upgraded to Page when having between 21 and 50 shillings, next it will become a knight when having between 51 and 70 shilling, and after that it will achieve the highest level which is becoming Minister once having between 71 and 90 shillings.

Since we want our students to work in teams, and not any team but a united one, the following step is to find roles for each member of the team. In our case we want to make groups of 5 to 6 people. Therefore, we need to find six roles which are in compliance with the times and must complement the other members. Besides, we need to describe which are the skills and responsibilities of each member. We are going to use *Robin Hood* as an inspiration, so they need to feel they form a band integrated by: a thief whose skills are being quick and smart and who needs to help the team to complete each quest successfully; a spy who needs to know how the other teams are doing in order not to get behind them; a monk who is to be in charge of culture and writing, as well as the pacifier when things get a little bit out of hand; a lieutenant who is the second-in-command, so he/she must help the leader; a leader who is the person in charge, so he/she must help all the members to agree and to do things right. In cases of groups of six, we will use the character of Lady Marian who is not a damse-in-distress, but a warrior, so she needs to keep the challenging feeling up so she can help her team to win.

Once we have all the previous steps mentioned clear and well designed, we can think of the title of our gamified didactic unit as well as the narrative to be used. In our case, since we are travelling to the Modern Ages, we are going to be inspired by the Spanish show *El Ministerio del Tiempo*. Therefore, the name of our unit is *Portals of Time*, which is also the key to the last activity. Regarding the narrative, Henry VIII is to be the center of our gamification and narrative. In order to get our students involved in the story, once they have been divided into groups and have formed a band, they will be told their bands have been chosen as members of the Ministry of Time to solve a mystery. Once all these basic aspects have been established, we need to design each session and each

activity before creating a web page (www.wixsite.com is my recommendation) and creating the materials we are going to need so we know how to design the web page and create the necessary materials. It's important to be aware of the fact that this is a whole didactic unit, so it must cover our four basic skills (reading, writing, listening and speaking), together with grammar and vocabulary related to the topic and the unit. In this example of gamified didactic unit, we are going to divide each session into 3 activities or games. Students will need to have access to a computer per team.

It is of great importance for teachers not to forget to take note of the shillings you award to each team during each session.

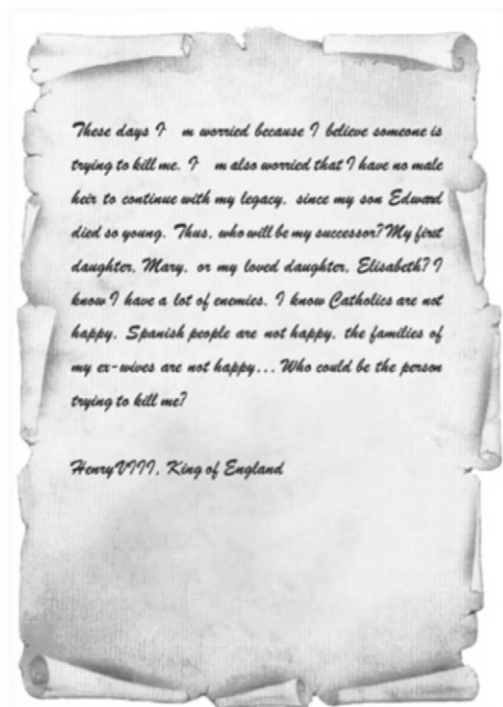
3.1 First Session

This first session is to be devoted to the explanation of the project. Thus, students are to be informed of the game rules, their groups and roles, how they will be earning shillings and what they can buy with those shillings. They will also be shown the Home Page of our website to learn what the project is about and be aware of the fact that they have been chosen to be members of the Ministry of Time and they need to solve a mystery. They are also to be informed of the fact that they need to overcome each activity in order to get a password that will give them access to the next activity or game. During this first session, the teacher will have to answer any questions students may have.

3.2 Second Session

Before we start this second session, we need to hide some parchments in the playground. Then, students will be told that something they should see has been found, so they need to go to the playground and look for it. When they find the parchment, they need to read the message from Henry VIII that it contains.

Figure 3
Parchment



Once they have read the parchment, they need to give it back to their teacher who will award them with the first shillings in a brown organza bag where they will be able to keep all the shillings they will be earning along the unit. As soon as they have got this, they need to get to the computer to access activity 2 which consists of a video that explains who was Catherine of Aragon, Henry VIII's first wife. After watching it, they need to answer some comprehension questions which are shown in the web page underneath the portrait of Catherine of Aragon.

Where was Catherine of Aragon from?

Who were her parents?

How many children did she have with Henry VIII and how many survived to become adults?

What was her religion?

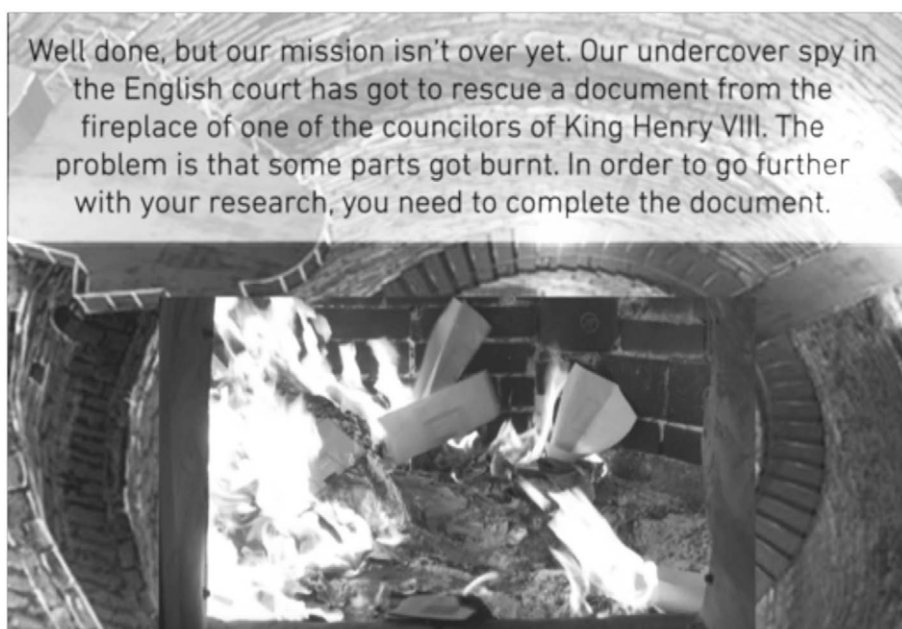
Did Henry VIII kill her?

Once they have the answers, they will show them to the teacher. The number of awarded shillings will depend on the number of correct answers (up to ten shillings). They will also be given the next password which will be homework and consists of an explanation of relative clauses.

3.3 Third Session

Those bands that have done their homework will be recipient of their pertinent shillings. After that, they are to be shown Challenge 2 in the web page that will explain the next activity.

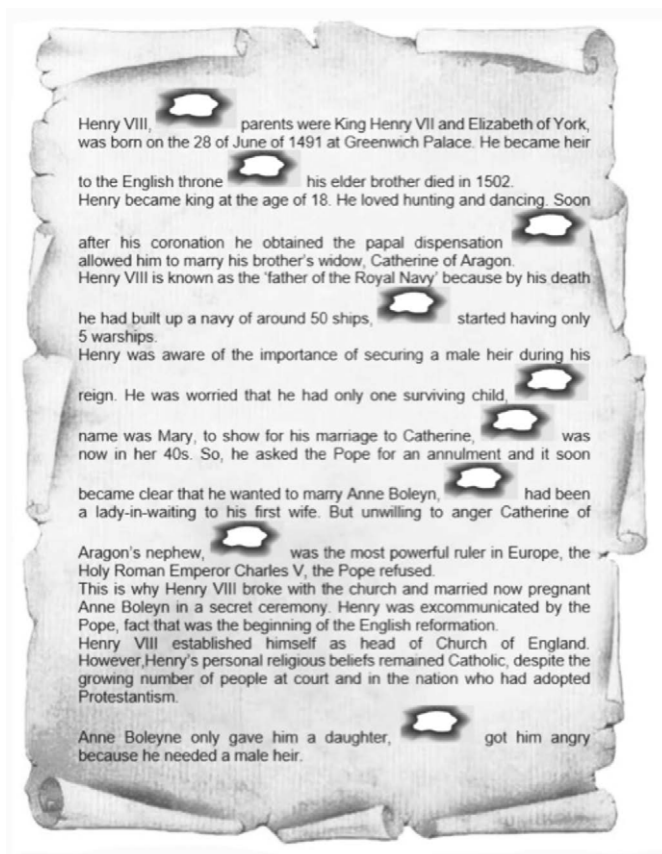
Figure 4
Challenge 2, Activity 1



Nota. Rebeca Sanz Monge, *Portals of Time* (2017). <https://rsanzmonge.wixsite.com/portal-softime/challenge-2>

Once they have read what this next challenge is about, they will be given a parchment with burnt gaps for them to fulfill regarding relatives. Therefore, they will be practicing the grammar explanation they had to revise as homework the previous day.

Figure 5
Burnt Letter

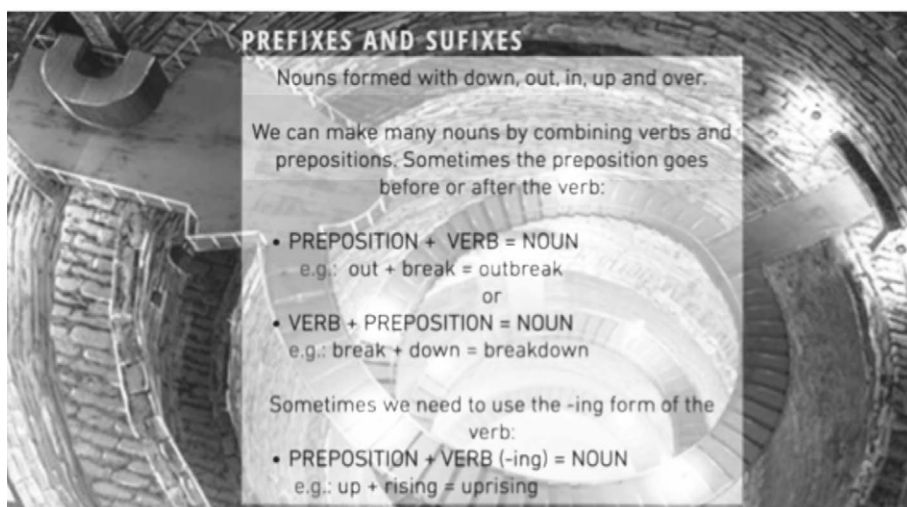


Having finished completing the parchment, the teacher will award them with a shilling per correct answer excepting answer to number one, which will be worth 2 shillings. After having received the shillings, they will also receive the next password, so they can move to the second activity of the session. This activity consists of listening to a conversation of two citizens gossiping about the king and the queen. As soon as they have listened to the conversation, they will be given the next password (and no shillings). In the third activity they will be asked to inform the King of what they have heard. In order to accomplish their duty, they need to write a formal letter. The number of shillings they will receive will depend on their letters' marks: Task 2 Shillings, Coherence & Punctuation 2 Shillings, Vocabulary 2 Shillings, Connectors 1 Shillings, Grammar & Spelling 3 Shillings.

3.4 Forth Session

It is a good moment to show their progress in the game and recount their shillings, so we help them all to find motivation to do better in the rest of the activities. Having shown every team's progress, it is time to move to Challenge 3. Students will be given the password of the first activity which consist of learning about prefixes and suffixes, since it is part of the grammar of this didactic unit.

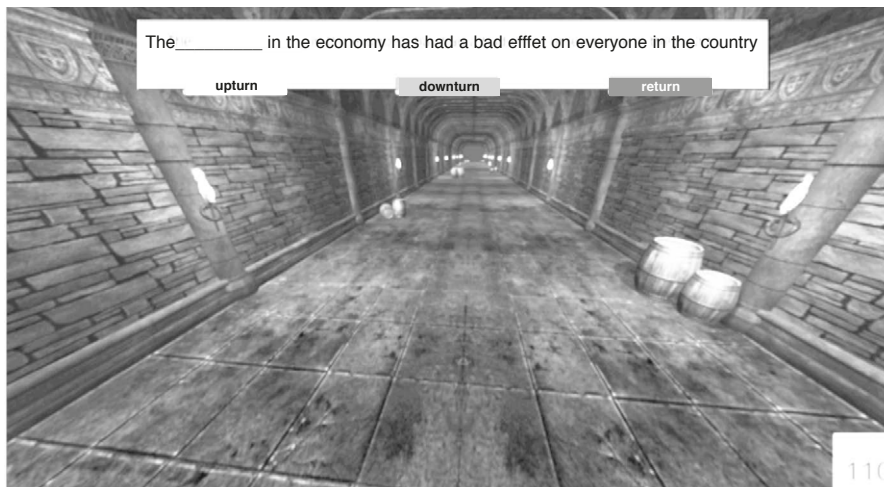
Figure 6
Challenge 3, Activity 1



Nota. Rebeca Sanz Monge, *Portals of Time* (2017). <https://rsanzmonge.wixsite.com/portal-softime/activity-1>

As soon as they have finished reading this explanation carefully, the teacher will give them the password for the next activity (this activity is not to be rewarded with shillings). Therefore, they need to go to the second activity of the challenge 3 and click on the picture that will lead them to a prefixes and suffixes game in which they will be awarded with shillings depending on the punctuation they achieve: 120-110 points = 10 *shillings*, 100-90 points = 9 Shillings, 80 points = 8 Shillings, 70 points = 7 Shillings, 60 points = 6 Shillings, 50 points = 5 Shillings, 40 points = 4 Shillings, 30 points = 3 Shillings, 20 points = 2 Shillings, 10 points = 1 Shilling, 0 points = 0 *shillings*.

Figure 7
 Challenge 3, Compound words Game



Nota. Rebeca Sanz Monge, *Portals of Time* (2017). <https://rsanzmonge.wixsite.com/portal-softime/activity-1>

At the end of this game, students will also be given the next password so they move to the next activity. Again, they need to click on the picture to access to the game in which they will have to complete a word formation chart and they cannot finish until they have all the correct answers. The shillings will be awarded in order of speed (1st = 10 shillings; 2nd = 8 shillings; 3rd = 6 shillings; 4th = 4 shillings; 5th = 2 shillings).

Figure 8
 Challenge 3, Word Formation Game

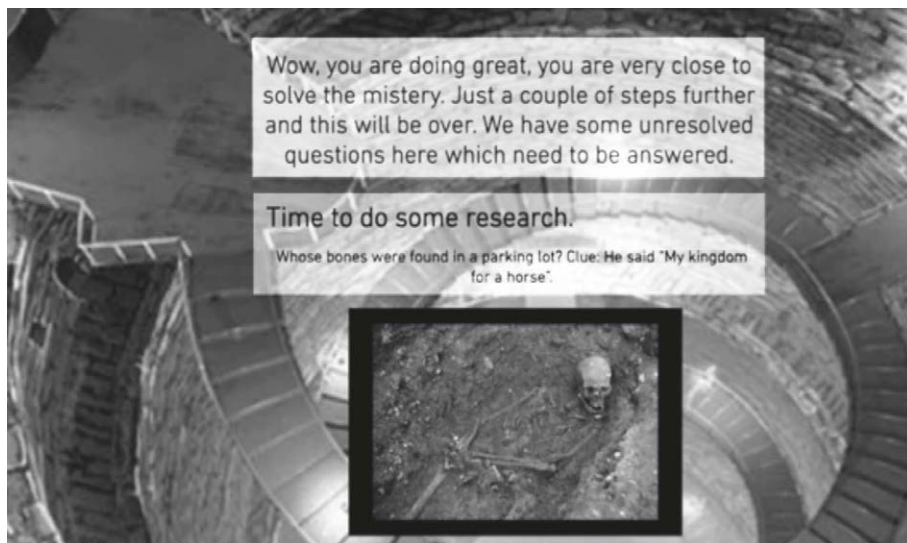


Nota. Rebeca Sanz Monge, *Portals of Time* (2017). <https://gamification.itch.io/gamification>

3.5 Fifth Session

The teacher will give the students the password to access Challenge 4 which will require research.

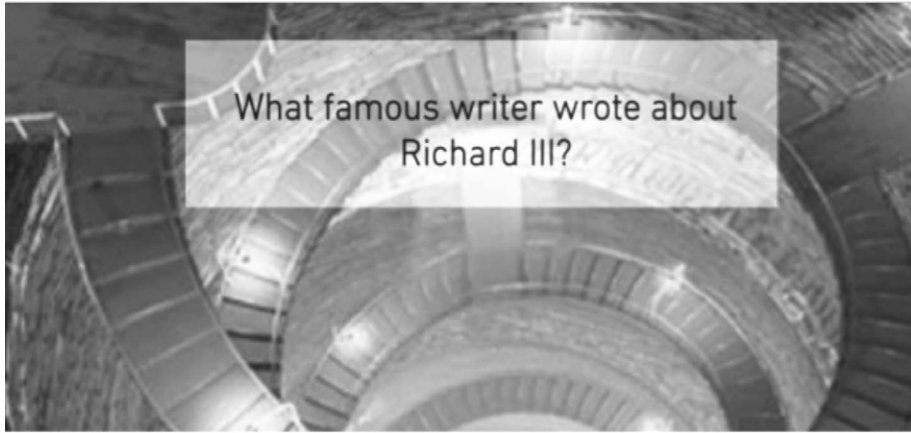
Figure 9
Challenge 4, Activity1



Nota. Rebeca Sanz Monge, *Portals of Time* (2017). <https://rsanzmonge.wixsite.com/portal-softime/challenge-4>

When they are capable of telling the teacher the answer to the proposed question, which is Richard III, students will be awarded with 10 shillings and the next password. In the next activity they need to prepare and present to the teacher, in low voice, a presentation on Richard III. Depending on how they do and the quality of the information provided, students will be awarded with a certain number of shillings or another: date of birth and death, why he was important, marriage and children = 3 Shillings; anecdotes or remarkable things he did = 5 Shillings; if they make a proper presentation = 7 Shillings; if their explanation involves all the members and do it fluently = 10 Shillings). Once the presentation has been presented, the teacher will give them the next password for the last activity of the session that also implies research to find the answer to the question, which is Shakespeare.

Figure 10
Challenge 4, Activity 3



Nota. Rebeca Sanz Monge, *Portals of Time* (2017). <https://rsanzmonge.wixsite.com/portal-softime/activity-3-3>

3.6 Sixth Session

Students have reached the best hidden room of the Ministry of Time. They are facing five doors that will teleport them to a different period of history.

Figure 11
Challenge 4, Activity 3



Nota. Rebeca Sanz Monge, *Portals of Time* (2017). <https://rsanzmonge.wixsite.com/portal-softime/activity-3-3>

The final recount of earned shillings will be the key of each team to choose the door they prefer. Thus, the team with the biggest number of shillings will be the first one to choose a door and the team with the smallest number of shillings will be the last one to choose. Having all the teams chosen their doors, the teacher will show the explanation to the whole class by clicking on the Activity 2 of Challenge 3 in the web page. This activity consists on preparing a drama play settled in the place and the time to which the door has teleported them to. Students will be given a few lessons to prepare their drama play and perform it in front of the class on the day the teacher decides. The mark of this speaking activity will be rewarded once again with shillings from 1 to 10.

At the end of this didactic unit, they will have the last chance to buy rewards with their vouchers because they have to return all their shillings and left vouchers (those not bought) to the teacher and they will lose those shillings they do not spend on vouchers.

4. RESULTS

This Gamification has been carried out twice in two different schools. The first time was in 2017 and the second one in 2019.

Out of teacher's observation during the whole process in both years, it's possible to say that most of the students were really participative, they got totally enrolled in the teams and the tasks. They had fun and that made them be eager to continue. Having the possibility of buying rewards also reinforced their willing to do things right in order to earn more shillings to buy those rewards.

Nevertheless, we need to face the reality of our students having to take traditional exams in their lives to check their knowledge levels, which means that this way of learning may be very beneficial regarding behavioral aspects and other aspects which might be more difficult to quantify such as team skills, leadership, generosity, competitiveness and motivation.

Therefore, once the gamification was finished each and they had a self-evaluation as well as the chance to assessed the gamification through a survey. 100% of the students evaluated the gamification positively and said

they had loved it. However, when asked if they thought they had learned as much as they normally did with the traditional method and whether they wanted to take the traditional exam without any more traditional exercises, 98% of them required more traditional exercises to practice before the exam. Also, 62% of the students referred that some of the students in their groups had not worked enough and had taken advantage of the rest of the team's work.

This proves that, while these strategies and methodologies may have a great way to enhance many of their abilities, traditional practicing ways cannot be left aside, we need to find a way to implement these innovative techniques in a balanced way with traditional ones.

5. CONCLUSION

To conclude, facing the creation of a gamified didactic unit is greatly challenging and overwhelming and, probably, the main thought is for all the requirements we may need and the lack of certain materials and means, such as computers or a good internet reception in our educational centers. The second thought is probably addressed to how difficult and time-demanding it is going to require to create a web page. The third thought will probably be devoted to the hesitation of how much they will truly learn after making all this effort and how to assess the learning process and what they have really learnt in the end.

Seldom find students activities which really end up in engagement on their part, so any chance of achieving this sort of feeling among them which may motivate them to feel involved within the subject and the group is worth trying. Each group is different and any method is likely to not be effective. However, as teachers, trying to innovate and do our best to help our students learn, will always be meaningful.

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