11 Fostering critical thinking and motivation through digital escape rooms: preliminary observations

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Abstract

This paper reports our preliminary observations of a pilot project carried out from February to April 2019 with a group of students learning Spanish at the University of Central Missouri and students learning English at the University of León. The project combines challenging escape room activities with intercultural and interlinguistic interaction in a virtual exchange. Students learned of the premise of the activity through a video that set the context in a dystopian future with an authoritarian dictator who had hidden and controlled access to knowledge. The contextual narrative also explained that a hacker was leaking information that the students could retrieve. Therefore, they needed to collaborate with their partners in order to save the world by solving different types of enigmas that involved knowledge about geography, culture, and language. In addition to these problem-solving activities, they were also required to discuss cultural topics and comment on different habits, traditions, and stereotypes. This combination might enhance the students' motivation, foster their communication skills, and help them develop critical thinking skills and learn more about each other's language, country, and culture.

Keywords: virtual exchange, escape rooms, interculturality, gamification.

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1. Background

The aim of this paper is to present a pilot telecollaboration project between Spanish and American university students: a group of 24 third year students learning English as a foreign language in the degree program of primary education at the University of León (Spain) and a group of 27 undergraduate students learning Spanish at the University of Central Missouri (USA), communicating in both languages to solve enigmas in digital escape rooms specifically designed for them. This English/Spanish tandem project took place in the second semester of the year 2019, during the months of February, March, and April, the overlapping time in the teaching periods of the Spanish and American university systems. We integrated two broad teaching approaches: telecollaboration and gamification. A digital escape room was the bridge between the two methods. This paper describes the overall structure of the telecollaboration, provides an overview of the pedagogical benefits of gamification, and explains the basic features of the escape room activities.

The purpose of the project was to engage our students in a motivating activity where they had to cooperate and learn about each other's language and culture. Telecollaboration undoubtedly provides huge benefits in foreign language learning and contributes to building on a number of key competencies (Duffy, Stone, Townsend, & Cathey, 2020; Fuchs, Hauck, & Müller-Hartmann, 2012; Hauck, 2019; Hauck & Satar, 2018) such as (1) teamwork competency: students learn about how to deal with peers, participate actively, and share responsibility, ideally empathizing and creating an atmosphere of respect and cooperation; (2) linguistic competency: in a bilingual project, language learners receive exposure from authentic materials and native speakers in the target language; (3) cultural awareness competency: students learn from a foreign culture since the interchange of ideas usually includes topics dealing with different aspects of the other group's traditions, routines, lifestyle, or even music, movies, geography, and gastronomy; (4) digital and multimodal competency: students get to use different tools for communicating, such as video-chatting and texting; (5) critical thinking: they reflect on the things they hear from their international partners and may change their stance when they are interpreting the other culture

– what they may usually regard as ‘weird’ at first simply becomes ‘different’ after gaining a deeper understanding of their partner’s culture; and (6) learner autonomy: they need to be responsible, well-organized, and be able to work on their own and arrange virtual meetings with their partners.

Gamification constituted a major building block in this project. The term, ‘gamification’, first coined by Pelling in 2002, refers to “the use of game thinking and mechanics in a non-game context to inspire employees and students to get engaged in the learning process” (Pappas, 2014, p. 3). Pelling (2011) explains

> “[s]o at some point during late 2002, I put all these pieces together […] and began to wonder whether the kind of games user-interface I had been developing for so long could be used to turbo-charge all manner of transactions and activities on commercial electronic devices – in-flight video, ATM machines, vending machines, mobile phones, etc. Unsurprisingly, this was the point when I coined the deliberately ugly word “gamification” (n.p.).

This ties in with other related concepts such as ‘edutainment’, ‘learning by playing’, ‘game-based education’, and ‘serious games’. Engaging games are a form of play that should be absorbing and fun: they should promote relaxation and motivation (Prensky, 2001). Prensky (2001) argues that computer games are so popular because in addition to involving ‘play’ and being ‘fun’, which give participants pleasure and involvement, they include the following additional essential ten elements: rules (structure); goals (motivation); interaction (doing); adaptation (flow); outcomes/feedback (learning); winning (ego gratification); conflict, competition, challenge, and opposition (adrenaline); problem-solving (creativity); interaction (social groups); and representation/story (emotion).

Escape rooms represent a clear example of gamification, where students are engaged in a quest to solve a number of enigmas and use the solutions to unlock locks and move on to the next activity. Although physical escape rooms are popular forms of entertainment around the world, educators have also found that many digital tools can replicate the experience online. The increasing availability of learning environments made of hybrid spaces, both physical and digital, facilitates both virtual exchange and gamification. Whereas some digital games may foster a more solitary experience in which the learner works alone, the escape room model assumes a team-based approach to a problem or mystery. As such, it is a pedagogical tool that shifts the focus from a narrow academic task to a more human-centered, and thereby holistic, experience (Clarke et al., 2017).

2. Description of the project and preliminary observations

For our project, first, students were asked to introduce themselves in a short video and reply to their partners' videos using Flipgrid, and they also paired up in small groups (two Spanish students and two or three American students in each group) by signing up in a Google document, and adding their names and contact details. Then, the premise of the project was given to them in the form of a video[3], which sets the context in a dystopian future with an authoritarian dictator against which they have to collaborate in order to save the world by unlocking padlocks containing different types of enigmas, some for the American students and some for the Spanish students. Although they worked separately in their local teams, as the escape rooms were specifically designed for them to learn their L2 and about the foreign culture, they had to collaborate with their international partners to solve many of the enigmas and they were asked to discuss some of the topics presented in the escape rooms in both synchronous and asynchronous sessions.

A variety of digital tools was used by the teachers to create the puzzles, scavenger hunts and videos: Breakoutedu[4], Camtasia[5], Snagit[6], Flippity[7], and

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[3] https://www.screencast.com/t/UhdxMRc7I

[4] https://www.breakoutedu.com/

[5] https://www.techsmith.com/video-editor.html

[6] https://www.techsmith.com/screen-capture.html

[7] https://flippity.net

Jigsaw Planet[8], as well as Google collaboration tools, while other platforms were used by the students to interact with their international partners: Flipgrid[9], Whatsapp[10], Skype[11], and Google Hangouts Meet[12].

The enigmas were organized around three main units – (1) geography, (2) American/Spanish culture through songs and movies like *Gone with the Wind, Forrest Gump, Mujeres al borde de un ataque de nervios*, etc., and (3) food, meals, eating habits, tipping, and education – and required listening to songs, watching videos, finding out information about famous people, historical facts, and locations, etc.

There were clues hidden in all these materials provided to them, but as they involved specific knowledge about geography, culture, and language, in most cases, the students needed their partners' help to solve the mysteries, e.g. supplementary materials Appendix 1 shows part of a conversation where an American student asks their Spanish partners for help to solve a puzzle. Supplementary materials Appendix 2 contains an address in Spain that students had to search for in Google Maps and were asked to find in street view as it contained a clue. Supplementary materials Appendix 3 is an image with links and clues to promote an intercultural conversation about food and eating customs. As well as these problem-solving activities, they were also required to discuss some cultural topics, find out similarities and differences between the two countries, and comment on habits, traditions, and stereotypes.

The final requirements of the project were (1) the submission of a portfolio, consisting of a report of their interactions and an essay, and (2) a presentation, held individually in each local classroom after the project, to express their opinion about their experience. However, the process was also monitored, as a way of mentoring, defined as "the strategies and techniques that teachers use in their classes to support students' learning during virtual exchange projects" (O'Dowd, Sauro, & Spector-Cohen, 2019, p. 146). Our students were continuously asked about their progress, they had to provide an assignment after each of the three units (supplementary materials Appendix 4), and they received feedback after each submission. Finally, the learning outcomes, reflecting on the ongoing process and on these written and oral assignments, were assessed and marked.

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[8] https://www.jigsawplanet.com/?lang=es-ES

[9] https://info.flipgrid.com/

[10] https://www.whatsapp.com/

[11] https://www.skype.com/

[12] https://meet.google.com/

Our initial observation of the data shows that the portfolios and presentations reflected the students' opinions about their experience, which was positive in general – they considered it fun, new, motivating, challenging, and they acknowledge having learned about the L2 language and culture, and about didactics, technology, and teamwork. For instance, supplementary materials Appendix 5 shows an extract of a conversation through *Whatsapp*, where they start organizing their interactions and refer to the use of Google Hangouts, which is new to some of them; this shows improvement in their digital competency and teamwork. Supplementary materials Appendix 6 shows extracts of some students' essays that reflect increased motivation, learning evidence, and satisfaction with the results. Some of them were at times a bit frustrated because of the uneven participation of their partners, they found some of the puzzles hard and time-consuming, and they encountered some technical problems. Consequently, in order to improve the project for the following year, we tried to overcome these problems by fostering participation, shortening and simplifying some of the tasks, giving students a short practice game at the beginning, and involving students in the creation of some puzzles. Although our preliminary reflections reveal some positive outcomes, future research and an in-depth analysis of the data on the updated project will be necessary to determine whether and how digital escape rooms foster students' critical thinking as well as their motivation.

3. Conclusion

Online international exchanges and escape rooms and are neither easy to set up for educators nor easy to carry out by learners. They require time, effort, and engagement both by teachers, in the design of the activities and the organization of the projects, and by students, when it comes to interacting with their peers and tackling the enigmas. However, the hard work is worthwhile, as these teaching methods are very efficient in terms of learning and they foster divergent thinking and stepping out of one's comfort zone, which results in rewarding and inspirational experiences for teachers and learners alike. We tend to routinize our ways of learning and thinking, but "learning is or should be both frustrating and life enhancing. The key is finding ways to make hard things life enhancing so that people keep going and don't fall back on learning and thinking only what is simple and easy" (Gee, 2007, p. 6).

4. Supplementary materials

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