



Interaction games to boost students' engagement in foreign language virtual exchanges: the case of virtual worlds and video-communication

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Abstract. Game-based learning is gaining popularity in language education. For the present study, three games were developed with a central focus on intercultural interaction to be played internationally in dyads or small groups using Video-Communication (VC) tools or a Virtual World (VW). The interactions were carried out in Spanish as a Lingua Franca (LF) between 32 university students over a period of three weeks. Different sources of data were gathered in order to study how games, played in an intercultural setting in VWs and VC, influence or not key affective variables in language learning. Initial results of the final questionnaires show that the interaction games did boost students' engagement in virtual exchanges, but results were more promising for the VC than the VW condition.

Keywords: game-based learning, virtual exchange, virtual worlds, video-communication, intercultural interaction.

1. Introduction

Game-based learning (Gee, 2017; Prensky, 2003) has gained popularity in language education practices for the potential that games offer to make learning processes more enjoyable and to increase students' engagement (Reinhardt, 2019). The aim of the present study was to study how games played in an intercultural setting in VWs and VC influence or not key variables in language learning such as motivation (Dörnyei, 2019), self-efficacy beliefs (Wang & Sun, 2020), and anxiety (Kruk, 2018).

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2. Method

Three games were developed following task-based language teaching approaches with a central focus on intercultural interaction. They were played internationally in dyads or groups of three students as part of a virtual exchange between the universities of Utrecht (The Netherlands) and Queen Mary (UK). The two environments chosen to play were VC and the VW of OpenSim. The interactions were carried out in Spanish as a LF.

The participants were 19 students from Utrecht University and 13 from Queen Mary University. At Utrecht University all students were enrolled in the language course Español 3 (B1, CEFR³). They were split into two groups and each group was assigned to one condition (VW or VC) at random. Students from Queen Mary University were all volunteers with the B1 required level. Here, also, groups were randomly assigned to each condition.

Participants played three games in three consecutive weeks: Snakes and Ladders, a cultural quiz, and a treasure hunt or escape room. Before task performance, students received a set of guidelines with instructions to prepare themselves and record the interaction, and the links to the tasks and the corresponding reflection diary. In addition, several online tutorial meetings were organised for the students participating in the VW condition, as the VW was new to them. They also received video instructions illustrating the dynamics of each game.

Snakes and Ladders gave them the opportunity to get to know each other with questions related to personal experiences, and the cultural quiz tested their knowledge of their partner's culture. The escape room (VC) was designed as a mission to find the secret to learn Spanish and the treasure hunt (VW) took place in virtual Valencia.

Different sources of data have been gathered (pre- and post-questionnaires, reflection diaries, recordings of the interactions, and focus groups) to analyse the following aspects:

- how games, played in an intercultural setting in VWs and VC, influence or not key affective variables in language learning processes (self-efficacy beliefs, anxiety, and motivation);

3. Common European Framework of Reference for languages

- engagement in interaction processes facilitated (or not) by presence and immersion; and
- differences between the VC and VW conditions.

3. Results and discussion

The initial results presented here are based on the final questionnaire filled in by 20 students participating in the VC condition and 12 students in the VW condition. A five-point Likert scale was used for closed items.

For students participating in VW, the environment was completely new. Some of them faced quite a few technological issues (e.g. not being able to download the viewer, sound problems, computers loading the world at a slow pace). Although they were given several tutorials, some students found it quite difficult to start and use the tool. This seems to have highly influenced their overall game experience. In the VW condition, there was a great diversity of perceptions, as can be seen in the high standard deviation values. While some liked the VW and found it easy to use, others were critical. In addition, while being an avatar felt very positive for some students in the VW group, others found it annoying not to be able to see the person they were playing with. By contrast, those students in the VC environment, who were using a known tool, experienced less technological hindrances when playing the games and were able to fully enjoy the international game experience (see [supplementary materials](#), Table 1).

Participants in both conditions enjoyed the task games they played (see [supplementary materials](#), Table 2). They remarked that the games were an added value because not only did they let them get acquainted with another person and culture, they also stimulated and guided the conversations. Users felt the games were fun assignments, “different from a normal language exchange”, engaging and entertaining. The following student’s words summarise the general feeling about the positive aspects of the experience: “I had fun, met a new person, practiced Spanish, and learned about a new culture”. When asked whether the environment had contributed to making the interaction games more interesting and fun, participants in the VW condition (\bar{x} : 3.2) were more critical than the students in the VC condition (\bar{x} : 4.3). The perceptions in the VW group were quite split, as we can see in the high standard deviation value. While five of the participants were extremely positive about the VW, four were quite negative, and three were neutral.

Although valued positively and an effective ice breaker, some students found Snakes and Ladders slightly long and at times repetitive. Personal preferences were split between the other two games. Students saw in the cultural quiz an opportunity to learn about their partner's culture and reflect upon their own. The escape room/treasure hunt gave them the chance to learn more about Hispanic culture. The VW group pointed out to have enjoyed the interactivity required to play it.

Interestingly, key characteristic concepts of the VW (immersiveness and co-presence) were perceived more strongly in the VC than in the VW condition (see [supplementary materials](#), Table 3), except for the third item (“I was so immersed playing the interaction games in the VC/VW environment that I lost track of time”) where the difference between conditions was marginal.

The international dimension of the games, that is, meeting new people from another country, was the first thing they mentioned when asked what they liked about the experience (see [supplementary materials](#), Table 4). They valued that all participants were approximately the same age and therefore had many things in common, being able to create a connection easily. Students stated to have felt relaxed during the game sessions since their partner was at the same language proficiency level, valuing LF communication in Spanish. Some of the participants in the VW group mentioned that they would have preferred to interact with native speakers.

Anxiety level was higher in the VW than in the VC condition across items (see [supplementary materials](#), Table 5), while self-efficacy values were alike in both groups, except for *being confident about their speaking skills*, which was considerably lower in the VW condition.

4. Conclusions

Students in both conditions enjoyed the interaction games for the opportunities they create to communicate and learn in a fun, spontaneous, and relaxed setting ([Pujolà & Appel, 2020](#)). They were particularly fond of the international dimension of the experience, as games were played in virtual exchange sessions with peers abroad. The VC group, who used a tool they were familiar with and who experienced minor technical issues, valued very positively the tool, the games, and the LF setting and felt co-present and fully engaged in the communication game with a peer they could ‘see’. In the VW group perceptions were split. While some were very positive about the affordances of the VW, others experienced many technological issues,

which seemed to hinder the possibility for them to fully immerse themselves and enjoy engaging in communication game processes (Hubbard, 2013). Additional analysis of the different data sources gathered will help us understand in more depth these initial findings.

5. Supplementary materials

<https://research-publishing.box.com/s/90b7iaaz8jpleaijmm5b8yeow05htudc>

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