# When international avatars meet – intercultural language learning in virtual reality exchange

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**Abstract**. Virtual exchange projects have become an effective pedagogical method to support students' development of intercultural language competence. High-immersion experiences in Virtual Reality (VR) may offer an environment which is conducive to developing such competence. This paper reports on a pilot study carried out with two groups of university students (N=30) in the Netherlands and Germany. The students, involved in a virtual exchange using VR headsets, completed three tasks collaboratively. The aim of the study was to investigate participants' perception regarding (1) their collaboration with foreign peers within the VR setting and (2) the perceived usefulness of the tool. The researchers employed questionnaires and conducted interviews and focus groups. The audio recording transcripts from the VR encounters and students' reflective journals provide further data to triangulate the results. This pilot study provides first results with regard to virtual exchanges carried out in high-immersion VR.

**Keywords**: virtual exchange, virtual reality, English as a lingua franca.

## 1. Introduction

In this study we report on the preliminary results from a VR experience that took place in February and March 2020 between Dutch and German students. Two types of VR headsets were employed (Oculus Go and Oculus Quest). Both are head-mounted devices and enable high-immersion VR, which can be defined as "a computer-generated 360° virtual space that can be perceived as being spatially realistic, due to the high immersion afforded by a head-mounted device"

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(Kaplan-Rakowski & Gruber, 2019, p. 552). Users feeling highly immersed in the experience may have a temporary suspension of disbelief that they are inside in the VR environment (Dede, 2009), which is the base for intense physical and psychological responses (Li, Legault, Klippel, & Zhao, 2020). It was hypothesized that communicating in a 360° real-life like environment with students from another country would have a positive impact on the students' (foreign language speaking) experience. Apart from gauging students' perceptions on the experience as a whole, we also tried to establish the perceived usefulness of VR for virtual exchange projects.

## 2. Method

The students from Utrecht University were on the course *ICT*[4] *and language education*, where this VR experience was integrated. Half of the students participated in the virtual exchanges, while the other half was asked to explore the pedagogical opportunities of VR for language teaching. The students from Heilbronn were volunteers. Participants were grouped mostly in dyads. The students arranged the meetings at their convenience. To prepare the students for the virtual exchange, manuals and video tutorials on how to use the Oculus headset were provided.

The sessions were conveyed using English as a lingua franca. Students received detailed task descriptions and the tasks themselves were performed outside classroom hours. The three interaction tasks reported here were carried out in Bigscreen.

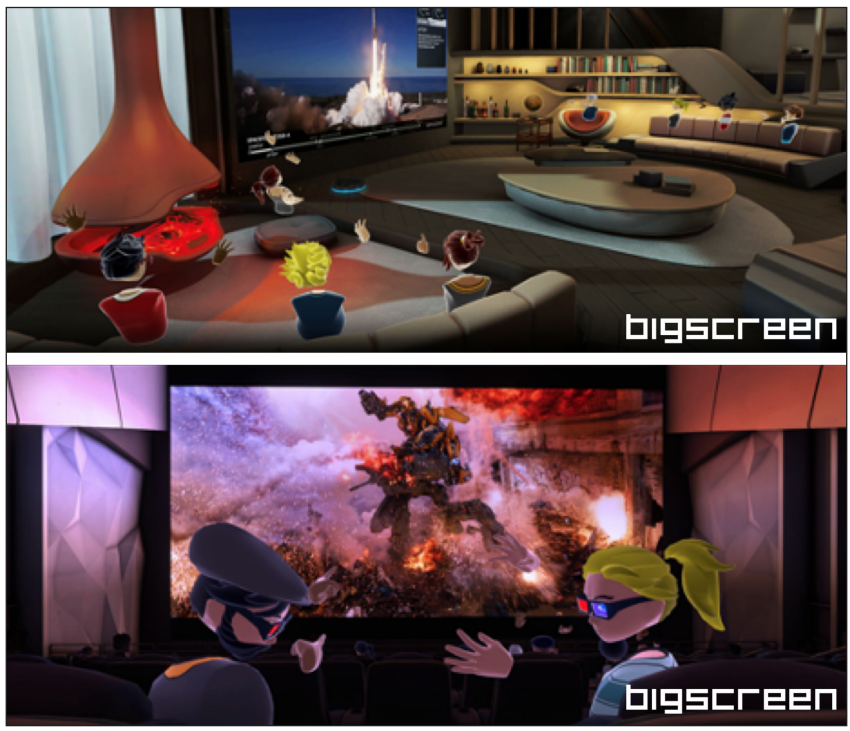
Bigscreen is a popular non-gaming VR application that enables people to collaborate and communicate in a virtual environment (see Figure 1 below). In order to use it, a stable Internet connection and a VR headset are needed. Users, represented as avatars which they can customize, can socialize with other users in a variety of virtual locations they can choose from.

In order to be prepared for all interactions, participants were advised to follow the corresponding pre-task guidelines. In Task 1, students were asked to introduce themselves and exchange information about what they knew about the other culture and the views they had. Task 2 required watching a 360° film and discussing the value of cultures in a globalized world, by exchanging impressions about the film with their partner and information about personal experiences with other cultures.

4. Information and Communication Technology

Task 3 was created by the Dutch participants and every group designed a different task: a virtual city tour, cultural exchange, or Pictionary game.

Figure 1. Bigscreen app (www.bigscreenvr.com)




Sessions were recorded by participants. A survey was administered before the exchange about participants' background information. After the completion of each task, students were also asked to fill in a questionnaire as well as a reflection diary with their impressions for the task. Information was also gathered from focus groups organized at Utrecht University and personal interviews at Heilbronn University after the virtual exchange had finished.

The results presented in this paper are based on the analysis of focus group responses and interviews conducted with the Dutch and the German students respectively, as well as their reflective journal entries. Participants were asked what they had learned from the experience, what they liked or disliked, how the VR environment might have influenced how they felt or the way they communicated, how they felt about speaking to an avatar in the VR environment, and whether they would recommend this kind of project to other university students.

## 3. Results and discussion

Preliminary analysis of the perceived usefulness of VR and collaboration with peers abroad suggests that the participants enjoyed communicating with peers in a VR setting, although the degree of enjoyment varied. In general, participants perceived the meetings on the VR communication platform as informal and enjoyable, and described the experience as sociable, easy-going, pleasant, and entertaining. One participant felt that "overall, the relaxed settings, like a fireplace or forest contribute to a good atmosphere". Another participant suggested that "I think the room we were in also played a part that helped to feel comfortable" and another stated that the environment gives you some security because you feel more like you are talking to someone in the same room.

When asked what they had learned from this experience, the Dutch students, who mostly studied pedagogy, reported to have gained initial knowledge about how VR works and its pedagogical possibilities and how to apply it in education. One participant stated: "I loved the experience, I´ve never done anything like this, really cool being totally immersed". Other participants were critical, though. Participants in both countries reported feeling dizzy, even out of balance when carrying out the tasks standing or because the headset was heavy. Most students liked the high-immersion being experienced, but found it inconvenient that they could not access the task specifications or own notes in the VR environment nor look up words on the Internet they did not know in English. They had to take off the VR headset to be able to access their laptop, whereby the immersion experience was lost. There were additional limitations on the app being used. Students liked the privacy within their rooms, which only invited people could access, or the diversity of room options in Bigscreen. However, once being in a room, there were no possibilities to undertake action (move around or interact with objects), which was felt as an important limitation. Some students managed to upload games or files from their laptops into the screen they shared in the given room in Bigscreen. Nonetheless, most of them experienced technical difficulties to do so. When asked whether they would recommend this pedagogical experience to other students, they agreed they would, since: "It's very different from what you normally do. You don't often have this opportunity". Novelty might be experienced here as a motivating factor.

Students in the VR app Bigscreen were represented by a human avatar of their choice. In general, most students reported that they liked using avatars. The avatars moved their lips, which, according to one participant, made it feel more real. Another participant appreciated the fact that "you could look at each other while talking or listening, showing signs of attentive listening and interest in each

other's points". The VR environment and the avatars seem to have contributed to students feeling comfortable within the setting. According to one student, "you feel that the situation is more real and you speak more naturally because no one is looking directly at your face and they don't notice if you turn green or red. You feel more confident to talk and debate a problem or counter an idea". Similarly, another student stated that "I do think the environment contributed for us to feel more confident speaking to each other". With regard to speaking English in the VR setting, one participant commented that they "really enjoyed speaking English and breaking down the communication barrier. When I speak English I get very nervous, especially when I speak in person, face to face". These statements on the settings and their communication indicate that due to the environment, students' affective filters (Dulay & Burt, 1977) may have been lowered because of the non-threatening settings and the avatars and had a positive effect on their foreign language anxiety (Horwitz, Horwitz, & Cope, 1986).

## 4. Conclusions

The preliminary results of the present virtual exchange project using high-immersion VR seem to indicate that, in addition to providing a motivational boost, the VR environment can contribute to lowering foreign language anxiety when students interact in English as a lingua franca, and in so doing facilitate the communication flow and language learning.

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