Promoting common ground building
in L2 cross-cultural conversations

Maryam Sadat Mirzaei[1], Kourosh Meshgi[2], and Toyoaki Nishida[3]

Abstract. Teaching culture out of context may not be the optimal approach, yet it could be achieved by immersive technologies. This study uses an immersive theme-based environment and focuses on cross-cultural interactions between learners of different cultures in goal-oriented scenarios. We collected interactions among learners with different cultural backgrounds and annotated common ground formation and conversation breakdowns in those interactions. Next, we recreated the scenarios in a 3D immersive environment using an in-house situation creation toolkit to enable experiencing the situation by using choices to navigate the conversation and observing the consequences. In case the conversation derails, we provide timely scaffolding by offering appropriate communication strategies to rebuild common ground. Learners can be the actors of the scenarios but can also be the observers by switching between roles and points of view. Preliminary experiments with 20 L2 learners of English from different cultures showed that practicing with immersive conversational game-play is effective for raising cultural awareness and learning to choose appropriate strategies for smooth interactions.

Keywords: cultural competence, 3D environment, virtual worlds, cross-cultural communication, second language.

1.   Introduction

With new technologies, communication across borders has become a part of our life. Smooth intercultural conversation using L2 not only requires knowledge of the language and deft listening and speaking skills but also entails cultural

1. RIKEN AIP, Tokyo, Japan; maryam.mirzaei@riken.jp; https://orcid.org/0000-0002-0715-1624
2. RIKEN AIP, Tokyo, Japan; kourosh.meshgi@riken.jp; https://orcid.org/0000-0001-7734-6104
3. Fukuchiyama University, Kyoto, Japan; toyoaki.nishida@fukuchiyama.ac.jp

awareness (Byram, 2012). Language and culture have intertwined relationships and are deeply connected, as culture forms language use, and language carries cultural meanings. At the conversation level, cultural differences may manifest through verbal and non-verbal interactions, where the lack of cultural competence leads to common ground breakdown, and the language barrier can exacerbate the situation (Stopniece, 2019). Achieving a higher level of intercultural awareness is not easy as learners often do not realize the deterioration of common ground until the conversation falls apart. Further, they may not notice what led to this result. Thus, attending to how common ground is developed and updated during the conversation and at what point the breakdowns become critical help determine when and how to assist the learners.

With new opportunities introduced by technologies such as virtual reality and 3D virtual worlds, researchers began to design platforms to foster the development of cross-cultural competence (Culbertson et al., 2016). These platforms allow for real-life experiences in another culture via a virtual environment. The interactions in these systems are carefully designed to teach discrete cultural points. However, actual interactions among learners from different cultural backgrounds can also improve cross-cultural competence and can even be more naturally internalized as these interactions are induced on-the-fly in a given situation. Moreover, virtual environments, especially virtual games, can offer access to a context for using target language and promote social interaction leading to the development of sociocultural competence (Peterson, 2012).

This paper focuses on learners' interactions and communication breakdowns in cross-cultural settings based on the participants' text-chat episodes in a theme-based situation. We closely monitored common ground formation and updates during the conversation and looked for instances of breakdowns. We recreated the interactions in a 3D environment using our situation creation toolkit to allow the learners to experience the same situation from different viewpoints, thus realizing experiential learning (Mirzaei, Zhang, Meshgi, & Nishida, 2019). We aim to improve cross-cultural competence and promote common ground building by immersing the participants in a given situation and asking them to fulfill goal-oriented interactions by choosing suitable options while receiving assistance.

2. Method

In an attempt to raise cross-cultural awareness, we collected a series of conversations taking place between L2 learners interacting with people of other cultures. Following

the grounding theories (Clark, 1996), we annotated common ground updates and defined four categories: (1) common ground is established, (2) common ground is maintained, (3) common ground is lost and both parties know, and (4) common ground is lost and only one party is aware of it. The annotations were used as indicators for the necessary scaffold and appropriate communication strategies to rebuild common ground when (3) or (4) happens. The fixing strategies were defined based on the situations derived from the interactions, including but not limited to: be flexible, use affirming responses, ask for/provide clarification, and make a polite request.

We developed a situation creation toolkit based on the Unity game engine that enables designing scenarios in a 3D environment for non-expert users. Such an environment can be explored with virtual reality headsets for a fully immersive experience or controlled by a keyboard or mouse. The system enables creating and collecting interactions plus having an embodied experience of the situation in which the interactions occur. We used this system to simulate the data derived from learner interactions in the form of a game tree made out of the conversations. We made a 3D visualization of those conversational situations so that other learners could engage in them as role-players or observers (Figure 1). We also designed non-player characters to act as a conversational partner, representing a target culture. Learners played a role by making decisions in a game-like conversation tree while benefiting from suggested strategies designed based on the annotations of common ground to repair the conversation.

Figure 1.   Learners navigate the interactions by moving down the conversation tree in which (*) represents common ground breakdown


3.   Preliminary experiments

We conducted a preliminary analysis with 20 learners of English from Europe, India, Japan, and China. Before the interactions started, participants received a

preamble about the scenario, the goal, and the settings in which the interaction was going to occur. The conversational partners had a mutual goal that was evident to both, similar to fulfilling a quest or task (e.g. hiring/being employed) but also had some personal goals or received some explanation about a personal problem (e.g. having a financial deadline). They used our system by interchangeably contributing as a creator, a role-player, and observer to monitor conversations. At each step, the outcomes of the learners' choices unfolded as they moved down the conversation tree. They refined their choices by using the suggested repairing strategies. For something more challenging, we provided several strategies and asked if the learner could choose the best approach (given the situation) to improve the conversation's quality. In the end, we asked the learners to review their choices and explain the causes of common ground breakdowns or try other branches to see the outcomes.

We observed interesting common ground formation and breakdown and L1 culture transfer. Analysis of participants' strategy selections showed an improvement in the use of strategies through practicing, suggesting that our platform is effective in raising learners' awareness of common ground deformation in cross-cultural interactions. We received positive learner feedback on 3D environments, the usefulness of scaffolding, the importance of trying alternative branches, and the benefits of reviewing choices (Figure 2).

Figure 2.   Participants' votes on the effectiveness of our system and its components
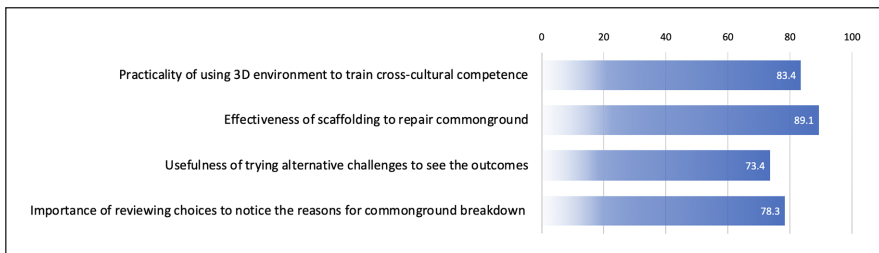
Data also suggested that when practicing cultural competence, learners need to understand the differences and similarities, avoid L1 culture transfer, and be able to take the perspective of the partner to select the appropriate choices. With annotations, we observed that in many cases, common ground breakdown was not noticeable to at least one of the conversational partners, indicating that they missed the viewpoint of their partner. This finding was confirmed by the participants during the review phase. Moreover, participants' feedback showed that the immersive experiences draw on the ability to be surrounded by a virtual environment that can stimulate language learning, as highlighted in other studies

(Jeffery & Collins, 2008). Participants claimed to have lower stress, and the use of avatars allowed them to be bold both in using the target language and in expressing their preferences which is in line with the findings of other studies on taking risks and engaging in language play when using virtual environments (Peterson, 2011). While L1 culture transfer was the main factor for common ground breakdowns, the finding on using avatars as an opportunity to take risks could also be accounted for and needs further analysis and confirmation.

4.   Conclusions

Intercultural communication is imperative in today's global society for getting along with people whose beliefs and backgrounds are different. This study explored the instances of common ground breakdown in a cross-cultural setting to provide timely scaffolding in a theme-based conversation. We introduced an immersive environment for experiencing the situations, navigating the conversations, and observing the outcome. Using this system, participants began to learn to use appropriate strategies designed to rebuild and maintain common ground, thus practicing to improve cross-cultural competence.

5.   Acknowledgments

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