Investigating the Effects of Social Goals in a Negotiation Game with Virtual Humans

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Abstract. Educational games may be particularly suited to teaching social learning skills with virtual humans. We investigate the importance of social goals and engaging social interactions in learning from such games. In one experiment, students played a cultural negotiation game with an explicit social goal or only negotiation task goals. While the group without the explicit social goal learned significantly more, students who reported having social goals in a manipulation check learned the most. In future work, we will develop an intervention built into a virtual learning environment to implicitly scaffold social goals.

Keywords. Virtual humans, motivation, educational games, social goals

Motivation

Simulation-based instructional systems are increasingly being used to facilitate learning social or interpersonal skills such as conflict resolution by simulating human behavior with virtual characters. These skills are currently taught through methods like role-playing exercises and tutoring, both of which are very resource-intensive teaching methods. Computer-based simulations offer a major advantage for social learning by providing a cheaper solution to a much larger number of students. BiLAT [1], the game in which this work is situated, is a virtual environment that supports cross-cultural interactions in the context of a negotiation task. In BiLAT, students enter scenarios and interact with virtual humans who have underlying models of personality and culture.

While results on learning from such simulations are preliminary, they are purported to be highly motivating [e.g., 3]. Motivation is important because it can lead students to make greater effort, seek greater challenges, and have higher achievement. However, there has been little research on how aspects of student motivation affect learning in social simulations, and even less on how they affect learning of intercultural competence in such environments. It is important to better understand what aspects of student motivation are particularly conducive (or not) to student learning in this context.

One standard framework of student motivation that is relevant to games is goal orientation. Goal orientation researchers tend to focus on mastery and performance orientation, or, striving to master the material versus to demonstrate high scores. However, in domains like culture that focus on social interactions, social factors might have an even greater influence on learning. Cultural interaction is an inherently social process between people of different cultural identities. While cultural identity is largely unconscious, it becomes salient when interacting with someone of another culture, who is then often relegated to outgroup status. Such cross-cultural contact can exacerbate outgroup biases and lead to social goals like the desire to be distinct from and
positively compared to the outgroup [4], motives that may be detrimental to learning about a new culture. On the other hand, integrative social goals, such as a need for affiliation or the desire to conform to social rules, may promote learning. I study these goals in a virtual learning environment to understand how to promote or increase social goals that may be beneficial, while decreasing social goals that interfere with learning.

Results and Future Work

In previous work, I hypothesized that students who were given explicit social goals (e.g., “Understand your partner’s point of view”) would be more successful in learning from the game than students who were given task goals only. In a randomized controlled study of 54 participants, the results contradicted my hypothesis – the group without the explicit (externally-imposed) social goal learned significantly more. However, students who reported having social goals in a manipulation check, regardless of whether they were externally imposed, learned the most on both task-specific and far transfer measures of cultural interaction. Along with my prior interviews with experts and results from think-aloud investigations with 13 students, these results suggest that social goals and interactions are important in learning cultural negotiation, but that explicit social goals may not be the right scaffold for students who do not generate these goals spontaneously. It is an open question how such goals can be promoted in a way that improves learning in environments such as BiLAT, where learners interact with virtual characters from a different culture. Methods used for reducing outgroup bias in cross-cultural contact focus primarily on promoting cultural similarities [2], and often avoid direct consideration of cultural differences which seem critical to learning intercultural competence. Additionally, efforts to integrate these methods into advanced computer simulations have been limited or nonexistent.

In future work, I will 1) develop an intervention built into a virtual learning environment to implicitly scaffold social goals, 2) manipulate students’ social goals to better understand social motivation and how it leads to learning, and 3) develop a model of how social goals interact with learner characteristics such as need for affiliation, social intelligence, and personality traits. I hypothesize that an intervention in a virtual learning environment designed to reduce outgroup bias while retaining cultural differentiation can promote both self-assertive and integrative social goals, which will lead to greater cultural learning gains and more positive attitudes towards the target culture. This work will utilize user-centered design to develop improved ways to support intercultural learning through technology. It will increase understanding of how social goals influence learning in the context of a cross-cultural negotiation task, and how they can be promoted in a way that is beneficial to learning.

References


