APR18-2018-000760

Abstract for an Invited Paper
for the APR18 Meeting of
the American Physical Society

Learning from Avatars: Developing Student-centered Teaching Skills in a Mixed-reality Simulator[1]

JACQUELYN CHINI, Univ of Central Florida

Graduate and undergraduate teaching assistants (TAs) are an essential part of the teaching force at many universities. TAs are increasingly being used to support student-centered learning, such as tutorials or inquiry-based labs. However, TAs likely have little or no prior pedagogical training and may not have experienced student-centered courses in their own undergraduate education. TeachLivE is a highly immersive mixed-reality simulator where teachers can practice pedagogy skills with five interactive avatar students. Prior research has demonstrated that the simulator is effective at helping K-12 math and science teachers increase their use of student-centered teaching practices both in the simulator and in their classrooms, leading to increased student learning. We have extended the use of this tool to physics undergraduate learning assistants and math graduate teaching assistants, and we are starting a project to develop training for graduate teaching assistants in four STEM disciplines (physics, math, chemistry and computer science). To use the simulator, TAs identify particular skills they would like to practice, such as asking open questions, and plan a lesson (typically five to ten minutes) to teach the avatar students. TAs teach the lesson and receive feedback, both automated feedback from the simulator and specific feedback from a facilitator, and then reteach the same lesson to implement that feedback. Our initial work demonstrates that TAs are able to practice their target pedagogical skills and experience the simulator as mostly representative of their actual classrooms.

[1]This work was supported in part by National Science Foundation Grants No. 1725554, No. DUE1347515 and No. DUE1246024 and a PhysTEC Grant (supported by the National Science Foundation under Grants No. 0808790, No. 0108787, and No. 0833210.)