

Situated Pedagogical Authoring

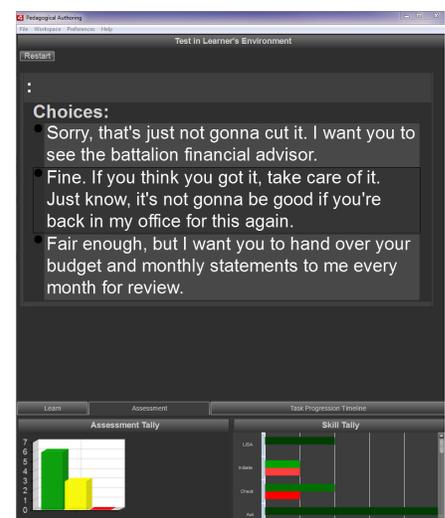
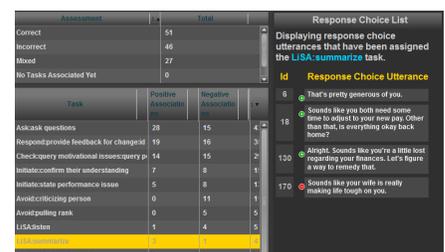
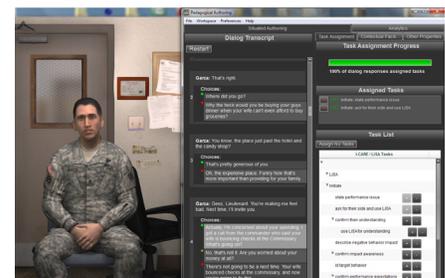
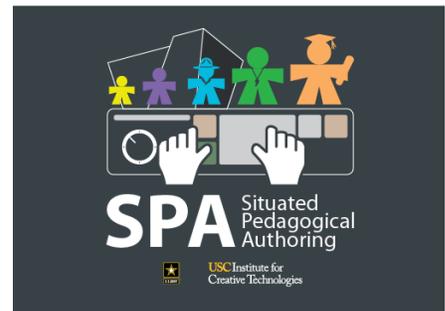
For Virtual Human-based Training

Summary: The long-term vision for the Situated Pedagogical Authoring (SPA) project at ICT is to simplify the process of creating knowledge for automated assessment and feedback in virtual environments. We are building and evaluating software tools that enable non-technical users to create content for immersive, virtual learning environments. Specifically, these tools support the (1) defining learning objectives, (2) writing effective feedback content, (3) performing informative assessments, and (4) designing appropriate scaffolding for reflection and self-directed learning. Our hypothesis is that authoring in an environment that emulates the actual learner's experience eases the technical burdens normally associated with content creation for intelligent learning environments and improves efficiency of creating learning content. Additional visualization and tracking tools provided by the system seek to promote the creation of pedagogically effective and thorough learning content. The current prototype targets the ELITE system and learning with virtual humans for leadership and counseling skills.

Motivation: Advanced learning technologies are playing a central role in the evolution and modernization of educational practices around the world, both in civilian and military training contexts. Unfortunately, costs associated with building and maintaining such systems have not decreased at a sufficient rate, and so uptake by end users (e.g., schoolhouses, students, training developers) has been slowed. The pursuit of authoring tools for advanced learning technologies, like intelligent tutoring systems, represents a prominent research trend to address these challenges. SPA seeks to provide tools for instructors and subject-matter experts to create and customize the guidance and assessment learners receive while practicing in virtual learning environments.

Future work: SPA is a fully implemented prototype and is undergoing multiple forms of evaluation. The focus of these evaluations are to (1) identify and meet end user needs in the classroom and out, (2) investigate the capability of SPA tools to promote better content creation for learning, and (3) elaborate on the design and creative skills needed during the act of authoring pedagogical content. Further technical advances seek to ease deployment for end users and increase the richness of assessments provided by the system.

This research is funded by the U.S. Army as part of the core mission of the USC Institute for Creative Technologies.



At the University of Southern California Institute for Creative Technologies leaders in artificial intelligence, graphics, virtual reality and narrative advance low-cost immersive techniques and technologies to solve problems facing service members, students and society.