

Inventing Virtual Tutor and Therapists

Ron Cole

Mentor Interactive Inc.
Boulder Language Technologies

During the past ten years I have been involved in research and development efforts that have produced software programs that use lifelike computer characters to help people learn. These efforts have produced systems in which virtual tutors help children learn to read and learn about science and programs in which a virtual therapist helps individuals with aphasia or Parkinson disease acquire speech and language skills. These programs, developed with reading experts, science educators, speech and language pathologists, cognitive scientists and computer scientists, have been shown to produce immersive learning experiences and significant outcomes in formal evaluations and clinical trials.

My talk will provide an overview of the theory and research that informs the design of these programs, a demonstration of specific tutoring and therapy programs, and describe the human language technologies that enable natural spoken dialogs with virtual humans. I will also discuss how advances in speech recognition, natural language understanding and character animation technologies appear to be responsible for producing immersive user experiences with effective learning outcomes.