Virtual Human
Training with Virtual Characters

Los Angeles, CA (Institute for Creative Technologies - Army)–Virtual human research scientists develop simulations to help both soldiers and therapists become trained in effective personal interactions. The technology blurs the barrier between what is real and what is virtual. One training simulation is about patient interviewing and diagnosis skills. Another helps soldiers interact with people in different cultural settings.

"These characters are trying to simulate what happens between people in a face-to-face conversation."
Jonathan Gratch, virtual human research scientist

Framework	Standards
Middle School	STL - 2.N ➤ Systems thinking involves how parts relate. STL - 3.E ➤ Systems may be applied to other settings. STL - 17.H ➤ Communication systems transfer information from human to machine and machine to human. STL - 17.J ➤ Messages are designed.

Content Illustrated

➤ "Justina," the 16-year-old virtual patient, participates in doctor training.

Content

Social Science
➤ Virtual humans can be used to teach interviewing and diagnosis skills.

Technology
➤ Computer-generated characters use speech processing to respond with natural language understanding.
➤ Computers triangulate the user's motion and location so as to interpret and respond to the user's gestures and expression of emotions.

Engineering
➤ The programs must be designed to work in real time to process and respond in conversational language.

Math
➤ Human response time in interactions is on the order of 250 milliseconds (1/4 second). A millisecond is 1/1,000th of a second.

Guiding Questions

To think about as you watch:

➤ What makes a virtual human believable?

Keywords

millisecond
natural language understanding
simulation
speech processing
triangulate
virtual human
virtual reality

Suggested Activities

➤ Identify some differences between the natural language people use in conversation and more formal written language.

➤ Make a link to "emotional intelligence." Discuss the emotions you think virtual humans should recreate. How would they display those emotions?

➤ *Virtual Human* can be found online at www.ndep.us/Virtual-Human. Visit www.ndep.us/LabTV for a list of process skills modeled in webisodes.