

Benefits of Virtual Humans Over Videos & Workshops

Virtual humans help engage:

- Users report feeling they are in a safer environment, less judged, and have an increased willingness to honestly reveal information¹⁻³
- Greater rapport as defined by increased empathy, trust, attention, and understanding due to the environment, and virtual human verbal, and non-verbal communication strategies⁴
- Levels of Realism: Kognito virtual humans can be designed to any desired level of realism. Research shows that learning, retention and engagement are actually undermined by overly-realistic characters^{5,6}
- Customized to Users: Virtual humans can be created and customized to the appropriate gender, age, language, and physical appearance for each given simulation or learner. In some cases, users can choose their own avatar
- Comfort: Virtual humans create a marked difference between real characters and virtual ones, minimizing the possibility of transference reaction⁷

Virtual human simulations provide a **safe and effective instructional environment**:

- Safe to Experiment: Users can experiment with various clinical approaches and communication styles without fear of repercussions on real patients
- Openness to feedback: Research suggests that users are more open to receiving feedback from a synthetic agent than from a human being, and feel less judged⁸
- Situated Learning: Characters and environments can be adapted to reflect the learner's professional setting and population of interest. Deliberate practice in a situated environment tailored to the learner promotes engagement, retention, and transfer to professional practice⁹

The Kognito Expertise:

For a virtual human to be “effective” it must combine the correct appearance/level of realism, life-like body language, and a voice that generates a level of authenticity and engagement. In addition, they need to act and respond like a real person would which requires for them to have memory, emotions, and a personality. Kognito has over a decade of experience is doing exactly that and the quality of its work, methodology, and technology are backed by over a dozen empirical studies. Please visit www.kognito.com for more information.

¹Lucas, G. M., Gratch, J., King, A., & Morency, L. P. (2014). It's only a computer: Virtual humans increase willingness to disclose. *Computers in Human Behavior*, 37, 94-100.

²Rizzo A, Scherer S, DeVault D, et al. (2016). Detection and computational analysis of psychological signals using a virtual human interviewing agent. *Journal of Pain Management*. 9:311-21.

³Pickard, M. D., Roster, C. A., & Chen, Y. (2016). Revealing sensitive information in personal interviews: Is self-disclosure easier with humans or avatars and under what conditions? *Computers in Human Behavior*, 65, 23-30.

⁴Lucas, G. M., Rizzo, A., Gratch, J., Scherer, S., Stratou, G., Boberg, J., & Morency, L. P. (2017). Reporting Mental Health Symptoms: Breaking Down Barriers to Care with Virtual Human Interviewers. *Frontiers in Robotics and AI*, 4, 51.

⁵Mori, M., MacDorman, K. F., & Kageki, N. (2012). The uncanny valley [from the field]. *IEEE Robotics & Automation Magazine*, 19(2), 98-100.

⁶MacDorman, K. F., Green, R. D., Ho, C. C., & Koch, C. T. (2009). Too real for comfort? Uncanny responses to computer generated faces. *Computers in human behavior*, 25(3), 695-710.

⁷Lim, S., & Reeves, B. (2009). Being in the game: Effects of avatar choice and point of view on psychophysiological responses during play. *Media Psychology*, 12(4), 348-370.

⁸Lowes, S., Hamilton, G., Hochstetler, V., & Paek, S. (2013). Teaching communication skills to medical students in a virtual world. *Journal of Interactive Technology and Pedagogy* (3).

⁹Squire, K. (2011). *Video Games and Learning: Teaching and Participatory Culture in the Digital Age. Technology, Education--Connections (the TEC Series)*. Teachers College Press. 1234 Amsterdam Avenue, New York, NY 10027