Designing a Stuttering Chatbot: A Speech-Language Pathologist's Exploration of AI for Clinical Training

Caroline Brinkert

Boston University

I am a clinician at heart, who happened to find herself in academia with no formal training on how to teach. When I accepted a full-time clinical lecturer position starting in Fall 2023, a former professor and continued mentor reinforced my confidence and capacity and helped me see teaching as a natural extension of the clinical work I knew so well. I know how to build clinical rapport, so I can create a supportive learning environment; I know how to explain complex diagnoses in accessible terms, so I can break down difficult academic content; I know how to document clearly and with purpose, so I can write and communicate student learning outcomes; I believe in client-centered solution-focused clinical care, so I can translate that to pedagogy that is responsive, iterative, and creative. Trepidatious but excited, I joined the faculty and began thinking about how to design my graduate-level course Stuttering and Related Disorders.

My deepest fear, that people would question if I was good enough to be in this position, led me to devour the university's teaching resources. In Fall 2023, the spotlight was clearly on AI, and I was particularly struck by so many seasoned professors talking about how they needed to reimagine the courses and assignments they'd been teaching for years. I quickly realized that if I was going to be starting from scratch, I might as well embrace AI. Knowing how little everyone else knew made me feel more confident and less vulnerable to explore this new territory. In a space with no clear experts, I wasn't the most novice - an empowering realization that helped me feel a sense of belonging.

Much like the rapid progression of AI, my ideas gained momentum and morphed beyond what I could have imagined possible. Curious and energized, I began experimenting with how AI could support active learning in my course. I piloted ChatGPT4 text-to-text and ad hoc prompting/training in March 2024. After teaching the students about the important features of a case history interview for pediatric stuttering, I had them engage in an in-class role play by calling out questions to ask the key stakeholders (i.e. child who stutters, parents, teachers), adapting in real time to the ChatGPT4 responses. My prompt was simplistic, but ChatGPT's responses were surprising. With just a little

tweaking, I could make the GPT sound more informal and as childlike as desired. The student engagement was incredible. Students closed their laptops, eagerly called out responses, collectively laughed or sighed over different responses, and discussed course content- rather than evening plans- in side conversations.

During the following year, I learned about critical distinctions between role play and simulation, training standardized patients, and creating simulations with fidelity. Also, during this time, AI's capabilities expanded exponentially, and my creativity followed suit. I integrated the initial classroom experiment with my newfound knowledge and taught a custom GPT to stutter. Stuttering is more than the surface-level presentation of blocks, repetitions, and prolongations, and encompasses deeply personal and often traumatic lived experiences of embarrassment, self-doubt, and shame. Can a "robot" actually embody this? From my history in clinical supervision, student clinicians are often most uncomfortable addressing these personal experiences, and it can result in stalled therapy progress. My aim was to increase student knowledge, comfort, and self-efficacy in these counseling-based clinical competencies, hopefully with the spillover effect of improved clinical care for future "real-life" clients.

The three stuttering adult profiles I created differed in their experiences with stuttering, not just how their stuttering presented, but the emotional toll and impact on quality of life. Personas differed in engagement styles, challenging students to prioritize information within a message for a "client" who spoke at length and often tangentially, or to respond and establish professional boundaries when a "client" challenged student knowledge or competency. I trained the chatbots using relevant literature and published personal narratives related to the lived experience of stuttering, description of the overt features of stuttering including specific words or patterns of stuttered responses, and fictional case histories. There was a labor of love in the extensive prompting, trialing, and re-prompting to capture the desired tone and engagement style of each persona. In the end, the specificity with which they responded felt jarringly alive. And, perhaps most unexpectedly, they stuttered too.

So, in Spring 2025, with the enhanced technology of voice-to-voice messaging, I assigned groups of students to engage in 30-minute intake interviews with a heavy focus on counseling skills. They had learned the classroom content and were now going to put it to practice in a "live", AI-generated, and therefore unscripted, simulation experience. At one point, when Jacob (one of the personas) told a student, who was flustered and disorganized, "Spit it out already. You're not the one who stutters," I audibly gasped and leaned forward in my chair behind the double mirror, literally on the edge of my seat awaiting what would happen next. I didn't know an AI persona could, or would, say that! In clinical education, it is not often that, as a supervisor, you can allow students the time and space to process, find, and sometimes fumble, to a conclusion because it would put the client at risk. This AI simulation assignment allowed for powerful, harmless learning that gave the student space to reshuffle her papers, find her voice, and redirect with clarity and control. In the debrief that followed, students animatedly discussed what they each wanted to say in that moment and reworked it into

professional and poised boundary setting. Students were required to recognize what mattered most in the moment (validation, clarification, redirection), rather than following a script, and in this authentic discomfort, meaningful learning occurred.

My next step is to attempt to integrate an avatar into the simulation. Nonverbal communication is a critical component of effective delivery and clinical counseling and will always be the hardest to embody in this modality. I welcome that, as I know AI will never replace real-life clinical interaction during student training. But my stuttering "robots" aren't just a gimmick. They are an embodiment of my teaching philosophy, rooted in clinical expertise, and I've come to realize that it is my heart that brings value to the classroom. I'm not just designing lessons; I'm building knowledge and shaping an environment where students can safely learn. Like in therapy, I now know I can allow students the space to make mistakes and learn from them, with a collective focus on growth. I know many educators are worried about AI replacing our teaching, but in my case, it *revealed* it.