

PERSPECTIVE ARTICLE

When artificial intelligence speaks back:
Rethinking communication training in health
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Abstract

Effective communication is a core competency in health professions' education, yet opportunities for deliberate, scalable practice remain limited. This perspective explores how voice-enabled generative artificial intelligence (AI), such as ChatGPT Voice, can enhance communication training by enabling students to rehearse clinical dialogues, receive immediate feedback, and engage in reflection within psychologically safe environments. Drawing on recent evidence, the article illustrates how AI-mediated conversation supports skill development in empathy, adaptability, and professional identity formation across patient, family, and interprofessional contexts. Practical examples demonstrate how educators can integrate voice-based AI into coursework and clinical preparation to complement, not replace, human mentorship. Ethical and pedagogical considerations, including privacy, bias, and authenticity, are also discussed. Used thoughtfully, voice-enabled AI can extend the reach of communication education, preparing students to engage confidently and compassionately in the complex interpersonal dynamics of healthcare practice.

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1. Introduction

Effective communication is a cornerstone of safe, compassionate, and collaborative healthcare practice. Evidence from a Cochrane review highlights that structured communication training, particularly when combined with experiential practice and feedback, improves learners' empathy and communication performance.¹ However, traditional methods, such as roleplay and standardized patient encounters, are resource-intensive and difficult to scale, underscoring the need for new approaches that allow students to rehearse and refine communication skills before entering clinical environments.

As an educator working at the intersection of clinical training and technological innovation, I have observed how health professions students develop confidence in their professional identity and communication skills as they prepare for real clinical interactions. Whether completing a patient interview, explaining their role, outlining a care plan, or collaborating as part of an interprofessional team, these moments call for clarity, empathy, and adaptability, competencies that evolve through guided practice and feedback.

Voice-enabled generative artificial intelligence (AI) offers an emerging opportunity to strengthen these skills. Tools such as ChatGPT Voice can simulate realistic conversations, allowing learners to practice explaining, listening, and responding in psychologically safe environments. Emerging early-phase studies suggest that adaptive, AI-based simulations may support professional skill development, foster reflection, and enhance learners' confidence when applied thoughtfully in health professions' training.²⁻⁴ However, much of this evidence is preliminary, with small samples, limited follow-up, and variable outcome measures, and should therefore be interpreted with caution.

The ability to speak with generative AI marks a critical evolution in educational technology. Until recently, most AI applications in health professions' education have primarily focused on increasing efficiency and reducing cognitive load in clinical tasks, such as documentation, intervention planning, or organizing care plans. Students are now being taught to critically appraise these outputs, using AI to support, but not replace, their clinical judgment.⁵ Voice-enabled systems represent the next step: Rather than producing text, they invite learners into dialogues. Through spoken interaction, students can practice explaining their reasoning, articulating recommendations, and adapting communication based on the listener's needs, skills that mirror authentic clinical conversations with patients, families, and colleagues.

In health professions' education, where effective communication underpins clinical reasoning, patient trust, and interprofessional collaboration, this innovation holds particular promise. AI-enhanced simulations promote realism, responsiveness, and learner engagement, complementing human-led instruction.^{6,7} If designed ethically and implemented thoughtfully, AI that "speaks back" could provide scalable, low-stakes practice environments where learners build confidence and fluency in professional communication before entering real-world clinical settings.

2. Communication as a core professional competency

Across medicine, nursing, and allied health, communication competence is a cornerstone of safe and effective patient care and practice. The ability to listen actively, convey empathy, and translate complex information clearly affects not only patient outcomes but also the formation of teamwork and professional identity. Yet, cultivating these skills requires deliberate practice, feedback, and opportunities to apply them in realistic but supportive contexts.

Established models, such as the Calgary–Cambridge Guide, the Four Habits Model, and the Interprofessional Education Collaborative Core Competencies for Interprofessional Collaborative Practice, emphasize key domains including relationship building, information gathering, explanation and planning, shared decision-making, and reflection.⁸⁻¹⁰ Voice-enabled AI may offer structured opportunities for learners to rehearse aspects of these competencies, particularly articulation, empathetic phrasing, pacing, and adaptive listening, while recognizing that certain elements, such as non-verbal communication, silence, and detailed emotions, remain difficult for current systems to approximate.

Traditional strategies remain valuable but resource-intensive. Simulated interviews and virtual patient interactions have extended these experiences, yet they often lack the adaptability needed to individualize feedback or allow for repeated, self-directed practice.

Research demonstrates that structured repetition and immediate feedback enhance communication performance. Wilkie and Rosendale¹¹ found that virtual mock interviews improved learners' preparedness and self-efficacy, particularly when feedback was behavior-specific. Similarly, Gupta² described how multimodal AI platforms integrating speech recognition and adaptive algorithms produced measurable gains in communication effectiveness. These findings highlight the importance of feedback loops and reflection, principles that voice-enabled AI can make accessible and sustainable. Nevertheless, much of the current literature remains preliminary. Studies vary widely in methodology, sample size, learner population, and outcome measures, and few include long-term follow-up or objective assessment of communication behaviors. Distinguishing early proof-of-concept research from rigorously evaluated interventions is essential to avoid overstating the evidence base and guide responsible integration into curricula.

By offering dynamic, responsive dialogue, voice-based AI platforms can supplement traditional instruction and provide low-stakes opportunities for deliberate practice. Learners might rehearse patient education, explain care plans to families, or participate in interprofessional case discussions, all within psychologically safe environments that encourage experimentation without fear of evaluation. When implemented carefully and with appropriate scaffolding, voice-enabled AI can support aspects of competency-based education by enabling students to refine their fluency, adaptability, empathetic phrasing, and collaborative communication skills before entering real clinical settings. These benefits should be interpreted in light of ongoing questions about reliability, bias, accessibility, and the need for human-guided feedback.

3. The pedagogical opportunity of voice-enabled AI

Voice-enabled generative AI offers students opportunities to engage in simulated dialogue and receive preliminary feedback. Rather than replacing faculty-facilitated debriefings or standardized patient encounters, AI-supported practice can prepare learners by offering a space to rehearse conversations and build self-awareness. Speaking aloud also requires attention to tone, pacing, pausing, and the way one conveys warmth or clarity through language, skills that are central to patient-centered communication but not fully exercised through text-only simulations.

Emerging research suggests that AI-powered simulated interviews may enhance reflection, empathy, and self-efficacy when paired with instructor guidance.^{3,4} These early findings reinforce that generative AI works best within educator-led frameworks, underscoring the importance of structured facilitation.

For faculty, voice-enabled AI can serve as a preparatory tool, allowing learners to practice foundational elements of communication, such as framing questions, delivering explanations, or responding supportively, before engaging in standardized patient encounters or live clinical interactions. Students may also use AI to articulate their reasoning, prepare for emotionally charged conversations, or explore communication strategies involving power differentials. The immediacy of spoken exchange promotes cognitive engagement, and the ability to repeat scenarios without judgment fosters confidence and metacognitive awareness. Educators can then reserve in-person time for deeper work on empathy, professionalism, and contextual reasoning, using AI transcripts or summaries as starting points for discussion.

It is also important to differentiate voice-enabled generative AI from traditional, scripted simulations. Rule-based programs follow predetermined pathways, whereas generative models adapt responses based on learner input, more accurately reflecting the unpredictability of clinical encounters, though this same flexibility introduces variability and potential inaccuracies that require careful oversight.

Voice-enabled AI retains value during clinical placements. Students may use it to rehearse difficult conversations, advocate for learning opportunities, respond to feedback, or navigate tense interactions, which helps build language for self-advocacy, emotional regulation, and professional communication skills that often shape the quality of a placement experience.

Ultimately, AI-assisted dialogue reinforces communication practice as an ongoing process. By

rehearsing patient interactions, team discussions, or supervisory conversations, learners can enter clinical settings with greater confidence and adaptability. However, these benefits depend on recognizing the system's technical constraints and pairing AI use with guided reflection to ensure accuracy, safety, and professional growth.

3.1. Practical application

Educators integrating voice-enabled AI can begin with structured, goal-directed prompts that mirror authentic clinical encounters. In practice, students would say these prompts aloud to initiate a voice-based conversation with the AI (Table 1).

After completing each scenario, students can debrief using reflection questions such as:

- What aspects of my communication felt clear or unclear?
- How did my tone, pacing, or word choice affect understanding?
- What feedback did the AI provide, and how might I verify or apply it in a real setting?

Students should be encouraged to cross-check AI feedback during faculty-led debriefings, as the accuracy, depth, and appropriateness of AI responses can vary based on system constraints and the specificity of the prompt. Educators can scaffold learning by reviewing transcripts and prompting learners to identify instances where the AI provided helpful insights, as well as moments where feedback was overly generic, inconsistent, or misaligned with clinical communication norms.

Embedding short, voice-based simulations within coursework offers low-stakes, iterative opportunities to build confidence, adaptability, and professional fluency before learners engage in high-stakes clinical interactions.^{3,4} The pedagogical value of these exercises depends on thoughtful integration, transparent communication of limitations, and the active involvement of faculty to guide reflection and ensure accuracy.

3.2. Limitations of voice-enabled AI systems

Although voice-enabled generative AI offers novel opportunities for communication rehearsal, it also introduces several important limitations that educators must consider.

- (i) Speech recognition variability: Current systems demonstrate inconsistent performance across accents, dialects, multilingual speakers, and individuals with speech differences related to disability. Misinterpretations at the input stage may lead to cascading conversational errors, distorting the learning experience.

Table 1. Practical application

Example	Prompt
Patient interview	"I am an occupational therapy (OT) student conducting an initial interview with a 65-year-old patient who recently experienced a stroke resulting in right-sided hemiparesis. Please act as my patient and respond to my open-ended questions about your daily routines, self-care activities, and goals for therapy."
Explaining a care plan to a family member	"I am a physical therapy student explaining to a patient's spouse how to support their partner, who is recovering from a knee replacement, in completing the home-exercise program. Please act as the family member, ask questions if something is unclear, and give me feedback on whether my explanation feels supportive and easy to understand."
Interprofessional collaboration	"I am a speech-language pathology student participating in a discharge-planning meeting with a case manager and physician. Please act as one of my team members as I raise a concern about the patient's swallowing safety or communication needs."

- (ii) Error propagation: When a system misunderstands a learner's statement, subsequent responses may compound the error rather than repair it. This can create unrealistic conversational patterns that diverge from clinically appropriate communication.
- (iii) Latency and conversational flow: Processing delays or interruptions can disrupt turn-taking and affect the sense of natural dialogue, which is central to effective communication training.
- (iv) Limitations in AI-generated feedback: Feedback may be overly general, inconsistently calibrated, or misaligned with established communication frameworks. Learners may misinterpret AI feedback as authoritative unless instructors explicitly coach them on how to critically evaluate it.
- (v) Lack of non-verbal and contextual cues: Voice-enabled AI simulations cannot interpret or convey non-verbal behaviors, emotional cues, silence, or environmental context, key components of authentic clinical communication.
- (vi) Evaluation challenges: Metrics such as word error rate, response latency, and coherence may offer partial indicators of system performance, but comprehensive evaluation tools for AI-mediated spoken communication are still underdeveloped.

These limitations underscore the need for faculty oversight, careful curricular design, and transparent communication with learners about what AI can, and cannot, reliably simulate.

4. Reflection, feedback, and presence

Developing communication competence requires more than repeated performance; it depends on structured reflection and meaningful feedback. Voice-enabled AI supports this process by allowing learners to pause, re-listen, and revise their responses within the same simulated exchange.

Studies demonstrate that AI-supported reflection can enhance self-awareness. Lin *et al.*⁴ found that learners using AI-based interview simulations gained clearer insight

into their communication strengths and weaknesses, particularly when paired with faculty debriefing. Similarly, Kakabayeva *et al.*³ reported that increased empathy and improved integration of feedback occurred among students who practiced therapeutic dialogues with AI-simulated clients. Learners often describe the ability to "retry" a conversation as particularly valuable. For instance, after receiving feedback such as, "Your explanation was clear but could be more concise," a student might repeat the scenario using shorter, more direct phrasing (Figure 1).

Educators can scaffold these experiences by incorporating guided reflection prompts or reviewing transcripts to coach around tone, empathy, and professional boundaries. This approach preserves instructor presence while distributing practice opportunities more evenly throughout a course. Rather than replacing mentorship, AI functions as a rehearsal partner that prepares students for deeper, more focused faculty-led discussions.

However, AI-generated feedback is not consistently reliable. Systems may offer overly general comments, inconsistently calibrated praise, or suggestions that conflict with established communication frameworks. Without faculty oversight, learners may over-trust or misinterpret these responses. Students should therefore treat AI feedback as a starting point for reflection rather than a final judgment. Moreover, voice-enabled AI cannot perceive or convey critical non-verbal communication elements, such as facial expression, body language, silence, or emotional cues, that shape clinical presence. These limitations reinforce that AI-assisted practice should supplement, not substitute, human interaction, and that the relational depth developed through real patient encounters or standardized patient work cannot be replicated by current systems.

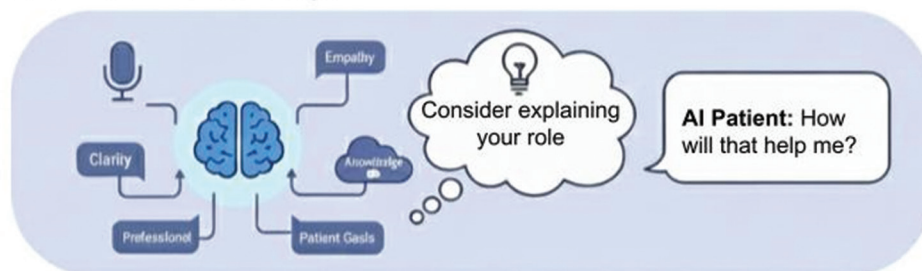
5. Ethical and pedagogical considerations

Integrating voice-enabled AI into health professions' education requires attention to ethical, pedagogical, relational, and equity considerations. While these tools offer unprecedented opportunities for scalable

1. Initial Attempt



2. AI Processes & Prompts



3. Revised Response

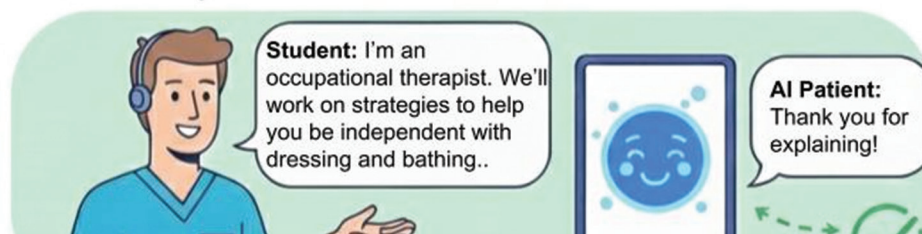


Figure 1. Voice-enabled AI in health profession's education, shaping learning communication. Image created by the author using AI. Abbreviation: AI: Artificial intelligence.

communication practice, they also raise questions about privacy, bias, authenticity, and equitable access.

5.1. Data privacy

When students use voice-enabled AI for reflective communication or simulated encounters, educators must ensure that they understand the types of information that are appropriate to share aloud and what constitutes protected or identifiable data. Learners should be explicitly instructed not to disclose patient details, names, or other personally identifiable information during AI-based interactions. The ethical use of AI in education requires transparency about how spoken information is processed or stored, reinforcing students' professional responsibility to maintain confidentiality.

The privacy implications also differ significantly depending on the platform and implementation model. Institutionally hosted systems may offer greater control over data retention, storage, and access, whereas commercial

cloud-based platforms typically transmit and process audio externally, introducing additional compliance and governance considerations. Students should be informed of these distinctions, and institutions should develop a clear consent process, acceptable-to-use guidelines, and safeguards for voice data.

5.2. Algorithmic bias and representation

Generative AI can reproduce biases present in training data. Nofal *et al.*⁷ demonstrated that gender and accent may influence AI-generated scoring and sentiment analysis. Similarly, Kim *et al.*⁶ noted that limited linguistic representation can privilege certain communication styles. Faculty must help students recognize when AI responses reflect bias and incorporate explicit discussions of equity and inclusion into the curriculum.

Bias extends beyond gendered or accented speech. Learners with varying language proficiency, neurodiversity, disability-related speech differences, or culturally shaped

communication norms may encounter systematically different responses from AI systems. Such disparities may impact the quality of feedback, conversational tone, or the system's ability to accurately interpret user intent. Educators should encourage students to critically evaluate AI interactions for potential bias and to reflect on how these limitations parallel real-world inequities in communication.

5.3. Authenticity and emotional presence

Lin *et al.*⁴ and Kakabayeva *et al.*³ found that learners valued AI practice but noted limits in affective realism. Educators should strike a balance between accessibility and authenticity, utilizing AI for repetitive, low-stakes practice while maintaining human mentorship as the central component in cultivating empathy and professional presence. Since current systems cannot interpret non-verbal communication or emotional shifts, their use should be clearly framed to prevent learners from overgeneralizing AI-based practice to complex real-world encounters.

5.4. Pedagogical integration

Effective integration of voice-enabled AI requires thoughtful curricular design and faculty preparation. Educators must determine where AI-based practice fits, such as preparing for standardized patient encounters or serving as a reflective supplement to clinical practice. Faculty may also need guidance in designing prompts, interpreting AI-generated feedback, and identifying inaccuracies or biased responses so they can help students use these tools appropriately.

AI-based activities should be framed as formative rather than evaluative, with students understanding that the goal is practice and professional growth.² Aligning AI exercises with program outcomes and established communication frameworks helps maintain curricular coherence. Clear expectations, transparent limitations, and structured debriefing ensure that AI functions as one component of a broader pedagogical strategy rather than a standalone solution.

5.5. Ethical mindset and professional formation

Teaching with AI should model the ethical reasoning expected of clinicians. When students learn to question the reliability of AI outputs, consider confidentiality, and reflect on how digital tools influence communication, they develop the professional judgment necessary for responsible practice. Integrating AI into communication training also offers an opportunity to strengthen students' ethical and professional identity. By discussing issues such as transparency, accountability, digital professionalism, and the ethical use of emerging technologies, educators

can help learners develop reflective and responsible habits that extend beyond technical proficiency.

5.6. Equity and access

Although voice-enabled AI tools are often described as "scalable," equitable access to these technologies is not guaranteed. Learners may vary significantly in their access to hardware (e.g., high-quality microphones or updated devices), stable internet access, and private or quiet spaces suitable for spoken practice. These disparities can significantly impact learners' ability to engage with AI simulations and may inadvertently disadvantage students who lack access to conducive environments. Institutional access models also differ. Commercial platforms may introduce subscription fees, licensing restrictions, or data governance limitations that affect feasibility across programs with differing resources. Even when institutions provide access, variable digital literacy among learners may affect their comfort and effectiveness in using AI for communication practice. These considerations highlight that scalability does not equate to universal accessibility. Programs should assess technological, financial, and spatial barriers within their learner populations and explore strategies, such as dedicated practice spaces, institutionally supported devices, or alternative learning pathways, to ensure equitable participation.

6. Conclusion

As health professions' education evolves, voice-enabled AI invites educators to reimagine how communication competence is taught and sustained. Speaking with AI is not meant to replace the human relationships at the core of clinical learning, but to extend them, making the rehearsal of empathy, clarity, and collaboration more accessible and reflective.

Conversing with AI that listens and responds in real time helps learners bridge the gap between knowledge and mindful engagement. AI-supported practice can enhance confidence before clinical encounters. Yet, any potential benefit depends on situating AI as a supplement to, rather than a substitute for, the mentorship, authenticity, and relational depth that only human educators, patients, and team members can provide. To support responsible integration, educators and institutions may consider several priority recommendations. First, pilot voice-enabled AI within clearly defined use cases (e.g., interview practice, care-plan explanations, interprofessional communication) before broader implementation. Second, collect meaningful evaluation data, including learner reflections, communication outcomes, and usability considerations, to assess feasibility and impact. Third, engage students in co-design processes to identify cases that feel relevant,

motivating, and appropriately challenging. Fourth, ensure that faculty receive support in interpreting AI feedback, identifying system limitations, and facilitating structured debriefings. These steps can help programs integrate AI in ways that promote reflection, equity, and sound pedagogical practice.

Ongoing limitations necessitate thoughtful and ethical integration. These limitations not only shape educational outcomes but also provide opportunities to foster digital professionalism and critical thinking as students learn to navigate emerging technologies responsibly.

Educators who model curiosity, transparency, and discernment when using AI create learning spaces that encourage the same qualities in students. Used thoughtfully, generative AI can become a catalyst for human connection, amplifying the reflective, compassionate, and communicative capacities that define effective healthcare practitioners.

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