



# SPEAK: Simulated Practice to Explore Application of Knowledge

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## Context & Objectives

Learning through failure is recognised as valuable across multiple higher education disciplines, but it must be done safely. Health sciences often focus on patient safety. However, protecting students from stigma, anxiety and discouragement arising from failure during practice is also important. Classroom practice has value but may be daunting for first attempts, especially for neurodivergent or non-traditional students; moreover, class time and resources are limited.

The SPEAK project's core objectives are:

- To co-design (with diverse students) a simulation hub hosting a suite of realistic GenAI-driven patients for safe, independent practice of pharmacy consultation skills, with automated assessment and feedback.
- To evaluate the performance and impact of this tool.
- To generate a replication toolkit (templates and guidance) to enable adoption across disciplines beyond pharmacy.

### Joy

- Diagnosed with autism.
- Unfamiliar environments and activities are stressful.

### Liam

- Mature student.
- Struggling with study skills and drawing on prior knowledge.
- Can't spend evenings in College due to family responsibilities.

### Noor

- International student – lacks social network in Ireland.
- Shy and has found it difficult to make friends with whom to practise.

### Billy

- Always did well at school.
- First in his family to go to university.
- Feels huge pressure to succeed – his family is so proud of him.



Images created using OpenArt.ai (Nano Banana 2)

## Key Outcomes & Impact



### GenAI-driven simulated patients

Simulated patients include emotionally adaptive avatars. Students must notice audiovisual signs of issues needing exploration or influencing care (e.g., underlying conditions, risk factors, communication challenges) and take account of the patients' dynamic emotional state.

### Replication toolkit

The toolkit will contain templates, workflows and 'how to' guides to support widespread adoption of SPEAK at various complexity levels (with/without avatars, with/without feedback), including comparison summaries.

Images created using Google Gemini (Nano Banana 2)



As this is an ongoing project, its outcomes are anticipated and emerging rather than final, but include:

- A scalable, pedagogy-led simulation hub, compliant with Universal Design for Learning principles and containing pharmacy-specific GenAI-driven dialogue scenarios with progressive complexity. Automated transcription, rubric-aligned AI-generated feedback, and guided self-reflection prompts will support learning through failure.
- A replication toolkit to support adoption by other disciplines requiring dialogue practice. It is hoped that this will foster a community of practice and interdisciplinary innovation.
- Insights into the design, use and impact of GenAI dialogue simulations as inclusive educational tools.

The anticipated impact includes improvement in students' skills, confidence and preparedness for real-world dialogue, and greater staff understanding of how GenAI may benefit teaching and learning.

## Reflections

Although SPEAK is still in progress, some findings have already emerged with broader relevance to conversation simulations using generative AI in a university setting:

- Psychological safety (the ability to practise privately, repeat scenarios, and make mistakes without fear of judgement) is central to students' willingness to engage with challenging dialogue-based tasks.
- Simulation co-design with students is important, highlighting the value of structured progression and careful attention to feedback tone.
- Constraining AI behaviour through careful prompt and system design will be crucial in maintaining trust, relevance, and educational value.



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**Acknowledgements:** Dr Ana Schalk (advice on project proposal), Prof. Vincent Wade and Swetang Krishna (advice and support on simulation development). The undergraduate and postgraduate Pharmacy students who have contributed to the project: Pedro Bans Burtchaell, Maeve Bellew, Orlaith Betts, Mary Elizabeth Connolly, Sarah Fitzgerald, Jessie Huang, Sarah Kelly, Surim Kim, Allison Kryzhanovska, Ciara McCabe, Grace McGorisk, Hannah Mulrooney, Orlaith O'Sullivan, Gloria Wofford, Zihang Yu (literature review, case topic selection, development of case materials, conversation analysis). Funded by TCD Learning Innovation Research Fund 2025.