

Developing VR & AI simulation in SLT education



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What is simulation?

- Teaching methodology – not a technology
- Replicates real life
- Focus is on the learner
- Chance to pause and discuss
- Safe space to learn
- Set structure: pre-brief/scenario/ debrief

Why Simulation?



Safe environment for clinical practice (Ormerod & Mitchell, 2024)



Supports decision-making and communication skills (Stead et al., 2020)



Can partially replace clinical placement experience (Hill et al., 2021)

Simulation in SLT

Established use of a range of methods including actors & videos

The 'Gap'

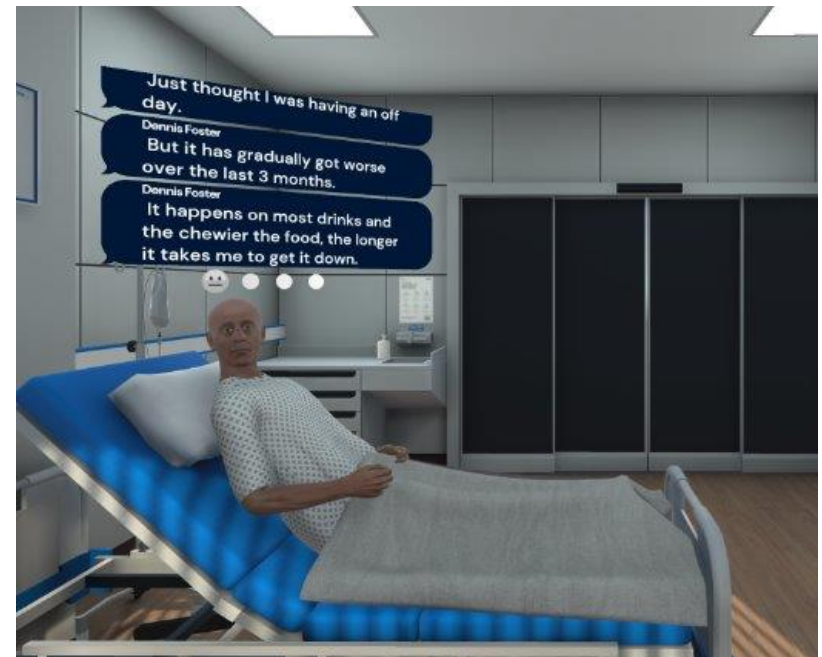
- Increased dysphagia demand and workforce needs
- Limited clinical placement exposure
- Royal College of SLTs requires undergraduate dysphagia competencies from 2026

Use of VR

- Develop authentic simulation scenarios to help students access patients & situations otherwise unavailable
- Ensure repeatable & equitable experiences

VR Simulation

- Dennis, 72-year-old man
- Recent admission to hospital with a chest infection
- (When asked) describes a gradual onset of difficulties swallowing & particular symptoms
- Students 'meet' Dennis to gather relevant case information to form a diagnostic hypothesis & plan next steps in care
- Reflects real-world uncertainty in dysphagia assessment & management



Pilot Evaluation of VR simulation (2025)

- Second-year SLT students
- Target sample: 20
- Prior theoretical teaching in dysphagia

Pre-simulation surveys: Competency confidence ratings & Technology Acceptance Model (Davis, 1989)



Pre-brief & VR simulation (10 mins orientation to equipment & 10-15 mins immersion)



Debrief & focus groups



Post-simulation surveys: Competency confidence ratings & Technology Acceptance Model (Davis, 1989)

Findings – Participants

- 20 consented
- 18 completed VR simulation
- 17 completed debrief & focus groups
- 15 completed pre- and post surveys

Pre- & Post Survey Outcomes



Confidence in relation to dysphagia competencies increased significantly following the VR sim session ($p = .002$)



All participants gained in confidence in at least one of the targeted clinical competencies



73% of participants agreed VR was useful for their learning



80% of participants agreed VR technology was easy to use

Focus Groups: Key Themes

Usability of VR	<i>"I found it surprisingly easy to get used to it"</i> <i>"Sometimes it was a bit unfocused"</i>
Curriculum and pedagogy	<i>"I think it would be really helpful to do before placement"</i> <i>"Being by yourself is so reassuring.. I actually know a lot more than I thought I did"</i>
Clinical knowledge and reasoning	<i>"I thought that it might be oromotor weakness causing oropharyngeal dysphagia."</i>
Realism and immersion	<i>"Ok, it wasn't real, like the setting didn't have the noises and smells but it was like you were there."</i> <i>"He was quite monotone and robotic."</i>

Outcomes



Valuable & engaging



Supports confidence & reasoning



Complements clinical experience



Embedded into SLT curriculum

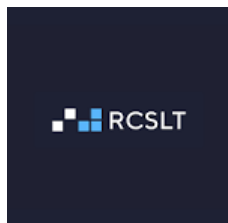
Summary



Tech in simulation learning is useful to help student access previously inaccessible experiential learning scenarios



The simulation scenario is only half the story – the feedback/debrief/application of learning is highly valued by students



Working with RCSLT to expand use of simulation in SLT education

With thanks...



Dr Jenny Freed, Emma Ormerod, Prof Liz Ward & Stephanie Greenwood-Davies



Flexible
Learning



Sentira^{XR}

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