

AI Avatars for Dementia Immersive Training: Balancing Innovation and Risk

Dr Anastasia Karpunina

School of Sociological Studies, Politics and International Relations
University of Sheffield, UK

WHY THIS RESEARCH IS IMPORTANT

Dementia care places high emotional, cognitive and communicative demands on practitioners. Traditional training often struggles to capture the sensory, behavioural and relational complexity of real-world encounters. Recent advances in conversational AI avatars offer a unique opportunity to bridge this gap, providing practitioners with safe, repeatable and authentic experiences. This early-stage project investigates how AI-driven avatars embedded in immersive training can prepare social care practitioners for dementia-related practice. **It aims to:**

- (1) co-design realistic scenarios with practitioners, educators, carers and people with lived experience;
- (2) test the feasibility of AI avatars to simulate key challenges such as communication difficulties, behavioural changes and safeguarding dilemmas;
- (3) evaluate the impact on practitioners' confidence, empathy and skill development.

A distinctive focus is on risks, biases and potential errors generated by AI, and on strategies to prevent or mitigate them. We argue that research, regulation and educator training are essential before AI avatars in immersive learning environments can genuinely transform dementia training by enabling experiential learning, enhancing empathy and supporting equitable access to high-quality training

EXISTING SOLUTIONS

- Avatars have been used in social care training for over a decade to simulate realistic service-user interactions
- Evidence from healthcare and related disciplines shows that avatar-based simulations effectively build communication, de-escalation, and interviewing skills
- Advances in AI have transformed avatar capabilities
- Unlike pre-scripted models, AI-driven avatars can now adapt to users in real time, responding dynamically and in multiple languages
- These developments enable immersive and reflective learning in sensitive practice areas
- AI avatars can realistically portray service users, their families, practitioners, managers, offering emotionally and cognitively rich experiences.

However, research also notes **limitations and risks:**

- Variable realism and fidelity
- Bias in generative AI systems
- Safeguarding and ethical concerns
- Potential reinforcement of stigma
- Dependence on skilled facilitation

Overall, avatar-based training offers safe, repeatable practice, but its effectiveness relies on careful design, validation, and supervision



Different platforms, same mechanics

METHODS

- October 2024 – April 2025 Survey, Google Forms, 48 social workers (91.7% F, 6.3% M, 2.1% NB)
- Average age: 40.6 years, ranging from 22 to 64
- Highly experienced: an average of 8.31 years as qualified social workers
- October 2024 – April 2025 Survey, Google Forms, 28 social work educators (75% F, 25% M)
- Average age: 49.8 years, ranging from 29 to 80
- Highly experienced: an average of 11 years of teaching
- April 2025 Focus group, in-person, 7 social workers (6 F, 1 M)
- April - May 2025 Interviews, online, 10 social workers (all F)
- All - based in England
- Ethics approval: University of Sheffield, Ref: o6388o (September 2024)
Sheffield City Council (January 2025)

RESULTS

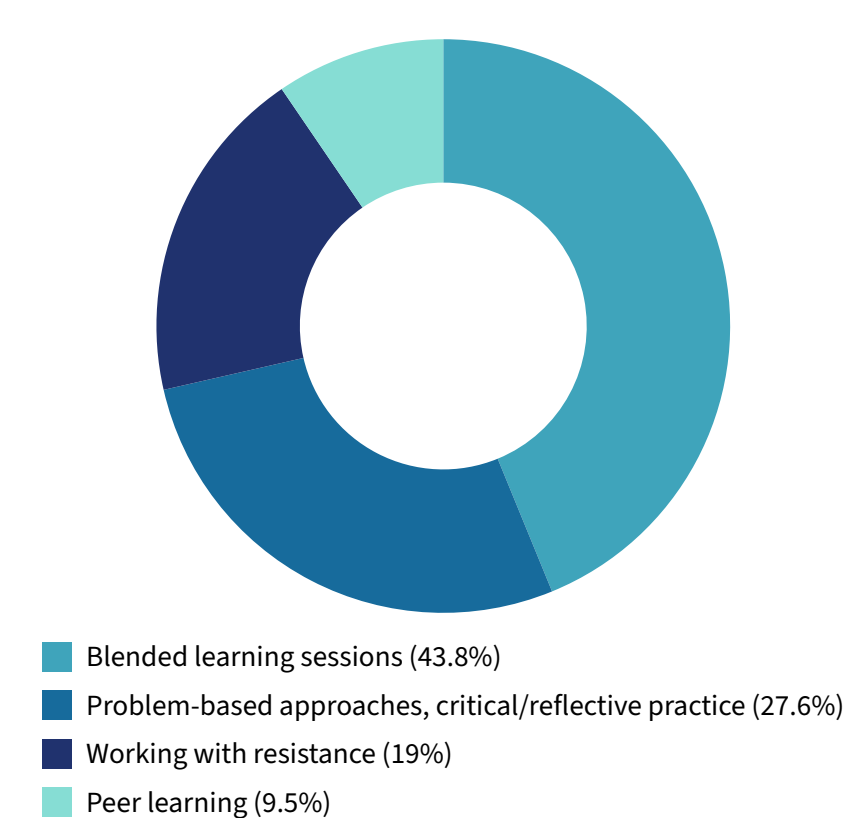
ALL PRACTITIONERS REPORTED ENCOUNTERING SITUATIONS WHERE THEY:

- Lacked clear guidance due to insufficient instructions and training
- Felt lost in emotionally demanding scenarios
- Experienced breakdowns in inter- or intra-organizational communication
- Were emotionally depressed, stressed, overwhelmed and wanted to quit their jobs
- Faced direct verbal aggression and explicit threats

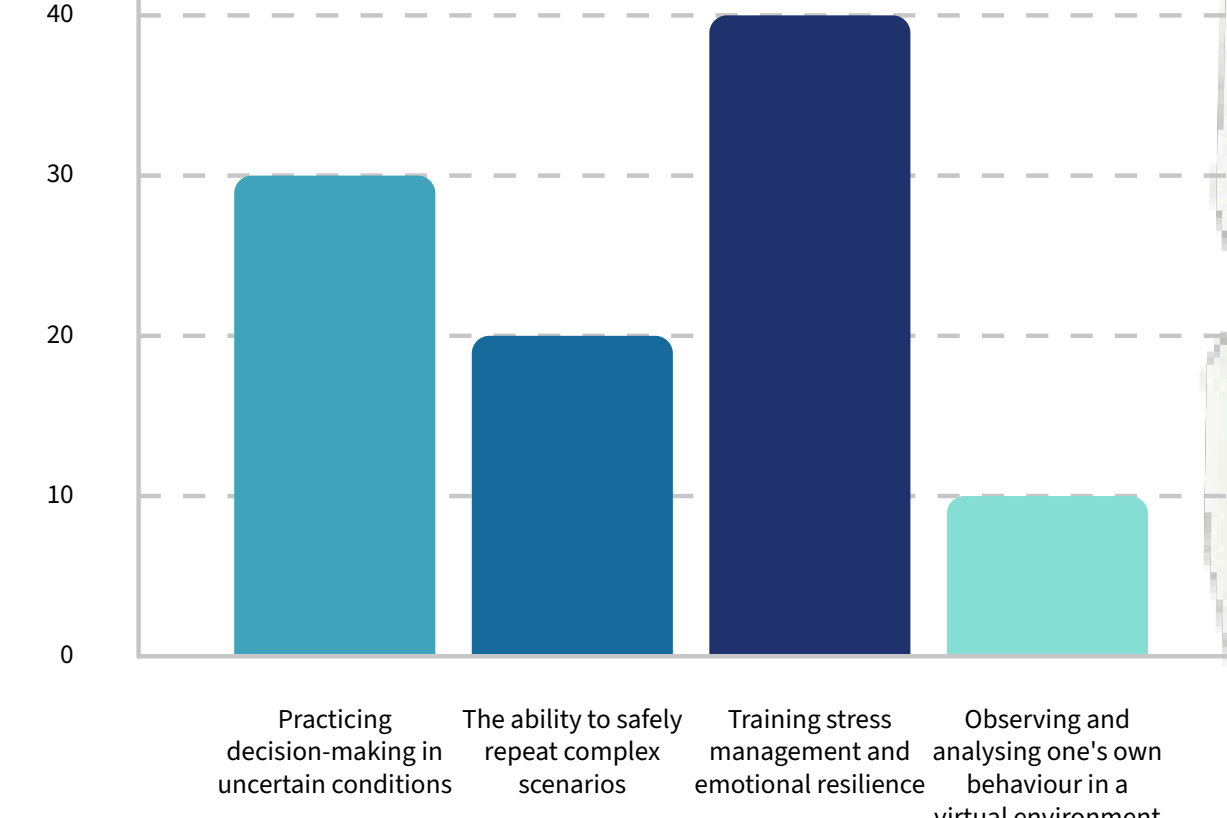
WHAT AVATARS COULD BE USED FOR?



TRAINING METHODS



EFFECTIVE FEATURES

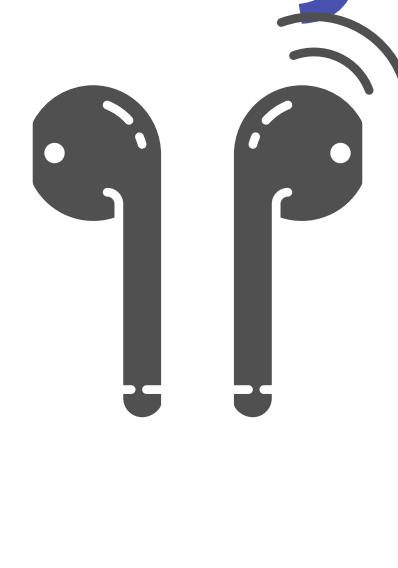
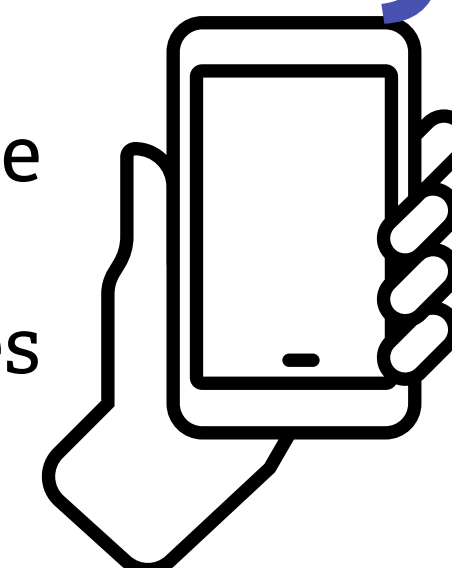


Training with avatars seems to:

- provide meaningful learning
- occur in a safe and comfortable environment
- be perceived as less threatening
- help learners to feel free during the training
- offer an opportunity to train in practical skills
- help in the acquisition of empathetic understanding

Would you like to try?

Get your smartphone and headphones ready!



No headphones? No worries! Just turn the sound down and step away for a moment so you don't bother anyone

This scenario places you as a social care practitioner who makes routine visits to a service user you have been working with for over a year



Use this scale to show how happy or unhappy you are with your experience (from 1 to 5)

CONCLUSION

- Avatars show **strong potential for training** practitioners to work effectively with people living with dementia. The main focus is on developing communication and response skills in complex and sensitive situations
- AI avatars can represent diverse people. Importantly, they can also portray individuals usually inaccessible for training, such as **abusers or perpetrators**, and reproduce speech patterns and multiple languages
- These trainings align well with the Dementia Training Standards Framework and the Care Certificate, and can be used by both local organisations and major providers such as Alzheimer's Society, SCIE, and other accredited training institutions. **Core learning areas include:**
 - Understanding how dementia affects communication and perception
 - Recognising the lived experience and emotional world of the person with dementia
 - Applying person-centred approaches
- Training with avatars allows practitioners to build confidence and competence safely, without any risk to service users or themselves. **Learners can practise:**
 - Using clear, simple, short sentences and avoiding jargon. Speaking slowly, calmly, and reassuringly
 - Asking closed (yes/no) questions or offering simple choices to reduce cognitive load
 - Allowing enough time for responses and resisting the urge to interrupt
- Avatars also support the rehearsal of de-escalation techniques, helping practitioners manage anxiety or aggression with empathy and understanding
- The future of avatar-based learning lies in replacing traditional role-play and live-actor sessions, offering cost-effective, scalable, and safe dementia training that enhances workforce competence
- Suitable for both **online e-learning modules** and **in-person workshops**
- **Ethical considerations:** The use of generative AI raises questions about authenticity, emotional understanding, and ethical appropriateness. Larger studies are required to explore dialogue quality, learning outcomes, and ethical safeguards

REFERENCES

- Adelman, M., Rosenberg K., & Hobart M. (2016). Simulations and Social Empathy: Domestic Violence Education in the New Millennium. *Violence Against Women* 22: 1451–52.
- Asakura K., Occhiuto, K., Todd, S., et al. (2020) A Call to Action on AI and Social Work Education: Lessons Learned from A Simulation Project Using Natural Language Processing. *Journal of Teaching in Social Work*, 40(5), 501–518. doi:10.1080/08841233.2020.1813234.
- Asakura K. & Bogo M. (2021). Editorial: The Use of Simulation in Advancing Clinical Social Work Education and Practice. *Clinical Social Work Journal* 49: 111–116.
- Asakura K., Gheorghe R., Borgen S. et al. (2021). Using Simulation as an Investigative Methodology in Researching Competencies of Clinical Social Work Practice: A Scoping Review. *Clinical Social Work Journal* 49: 231–43.
- Baker E. & Jenney A. (2023). Virtual Simulations to Train Social Workers for Competency-Based Learning: A Scoping Review. *Journal of Social Work Education* 59: 8–31.
- Bay U., Maghidman M., Waugh J. et al. (2021). Guidelines for Using Simulation for Online Teaching and Learning of Clinical Social Work Practice in the Time of COVID. *Clinical Social Work Journal* 49: 128–35.
- Chan C. & Li F. (2023). Developing a Natural Language-Based AI-Chatbot for Social Work Training: An Illustrative Case Study. *China Journal of Social Work* 16: 121–36.
- Fink M.C., Robinson S.A. & Ertl B. (2024) 'AI-based Avatars are Changing the Way We Learn and Teach: Benefits and Challenges'. *Frontiers in Education*, 9. Doi: 10.3389/feeduc.2024.1416307.
- Haginoya S. (2025). Scalable Training for Child Sexual Abuse Interviews in Japan: Using AI-driven avatars to test multiple behavioral modeling interventions. *Child Protection and Practice*, 5. Doi: 10.1016/j.chipro.2025.100188.
- Matto H., Ihara E., Cielowski B. et al. (2023). Virtual Reality Case Simulation to Build Skill Competencies in Working with Substance-Engaged Clients. *Social Work Education*, 1–13.
- Putney J., Levine A., Collin C. et al. (2019). Teaching Note—Implementation of Online Client Simulation to Train and Assess Screening and Brief Intervention Skills. *Journal of Social Work Education* 55: 194–201.
- Smith M.J., Bornheimer, L.A., Li J. et al. (2021) Computerized Clinical Training Simulations with Virtual Clients Abusing Alcohol: Initial Feasibility, Acceptability, and Effectiveness. *Clinical Social Work Journal*, 49: 184–96.
- Vidman A., & Tham P. (2024) Dialogue with Avatars in Simulation-Based Social Work Education: A Scoping Review. *Social Sciences*, 13(11), 628. Doi: 10.3390/socsci13110628.
- Washburn M., Bordnick P., & Rizzo, A. (2016) A Pilot Feasibility Study of Virtual Patient Simulation to Enhance Social Work Students' Brief Mental Health Assessment Skills. *Social Work in Health Care*, 55: 675–93.

