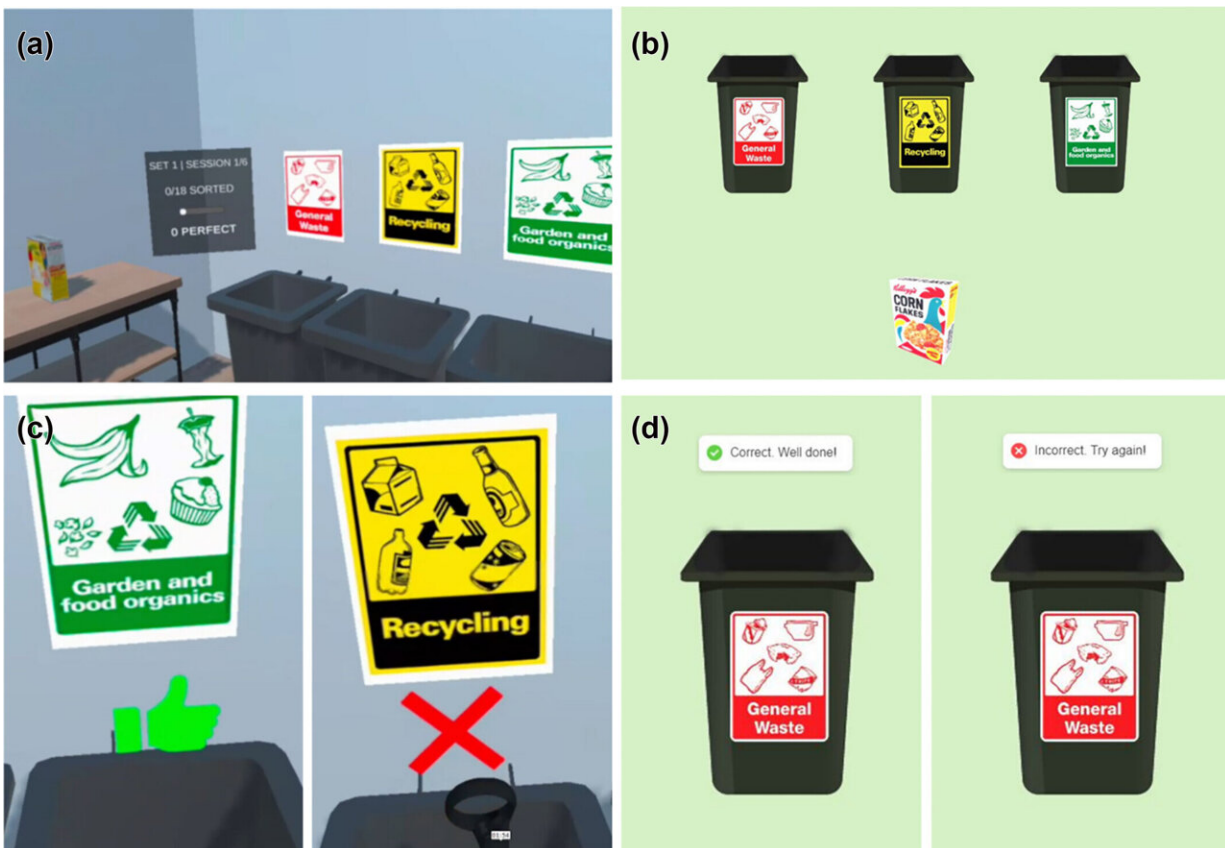


VR headsets could be life changing for people with intellectual disability

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Virtual training and feedback in both virtual environments. Note: A screenshot of the virtual training task is shown from within the (A) immersive virtual reality (IVR) head-mounted display and (B) non-immersive tablet. Example screenshots of the visual feedback presented after each disposal is also shown from within the (C) IVR head-mounted display and (D) non-immersive tablet. This feedback appeared after each disposal and indicated to the participant whether the disposal was correct or incorrect. Credit: *Journal of Intellectual Disability Research*

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Immersive virtual reality could open up a whole new world for people with intellectual disability, enabling them to learn practical life skills much faster without relying on caregivers, according to a new study.

Australian researchers compared the effectiveness of immersive VR headsets and non-immersive virtual environments to teach 36 adults with an [intellectual disability](#) how to separate general waste from recycling, garden, and food organics.

The study, undertaken by University of South Australia and UNSW Sydney researchers, involved 12 virtual [training](#) sessions. The VR group using the immersive head-mounted displays scored significantly better in real life than those who used a tablet device for training.

The findings have been [published](#) in the *Journal of Intellectual Disability Research*.

UniSA Associate Professor Tobias Loetscher says people with intellectual disability need additional time to grasp and visualize concepts, and VR headsets enabled participants to experience realistic worlds and learn from hands-on experience.

"Research shows that 'learning by doing', otherwise known as [experiential learning](#), seems more effective for this group compared to passive methods of learning," Assoc Prof Loetscher says.

"In our study, the VR group not only demonstrated real-world improvements in correctly sorting waste immediately after the VR training; they were able to sustain this improvement up to a week

afterwards, in comparison to the non-immersive group."

UNSW Research Fellow Dr. Stefan Michalski says [immersive virtual reality](#) allows individuals to experience activities in a safe, controlled, and repeatable environment.

"Opportunities for people with an intellectual disability to participate in hands-on learning are often minimal due to concerns around risk of injury, time constraints and lack of staff training," Dr. Michalski says.

"However, immersive VR simulates real-world experiences, giving the sensation of being physically present in an environment without real-world risks."

Most people with intellectual disability experience significant challenges in performing basic [life skills](#) such as cooking, showering, and cleaning without caregiver assistance.

"Difficulties in performing these life skills prevent them from living independently and enjoying a better quality of life, so it's important we find effective methods for developing life skills in this population," according to first author, UniSA honors student Andrew Franze.

Cybersickness has been flagged as a potential drawback of using 3D headsets for training, but only one person in the VR group reported feeling dizzy, and their symptoms were short lived.

Most participants found the VR technology enjoyable, despite some hesitancy when using head-mounted displays for the first time.

The researchers used a waste management task in this study but say that immersive VR training could be used to teach other basic skills such as cooking and kitchen safety, personal hygiene, public transport

navigation, and social skills.

"There is accumulating evidence that VR is beneficial, but we need to close the gap from research to implementation so that more people can benefit from this technology," Dr. Michalski says.

"Our current work aims to address the unmet health needs of people with intellectual disability by using VR to prepare individuals for health care interactions, reducing the fear and anxiety associated with going to the doctor."

More information: A. Franze et al, Immersive virtual reality is more effective than non-immersive devices for developing real-world skills in people with intellectual disability, *Journal of Intellectual Disability Research* (2024). [DOI: 10.1111/jir.13177](https://doi.org/10.1111/jir.13177)

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