

One-page summary: The Waste Game design, findings and recommendations

Background

Despite improved waste management infrastructure, waste is still poorly segregated due to a lack of motivation and knowledge among students and staff. More cost-effective and systematic education methods are needed to complement current efforts to raise awareness about waste prevention and recycling.

Game design and structure

As part of the EPA-IUA Campus Living Labs Sustainability Project, an online educational tool called The Waste Game was developed. The tool aims to transmit waste prevention and recycling knowledge. The game is designed as a quiz and structured around the waste hierarchy framework, focusing on waste prevention followed by recycling. It includes gamification techniques to support learning and engagement. The game was designed in collaboration with participating universities and tailored to their local context.

Trial design and implementation

The effectiveness of the game was evaluated through a randomised controlled trial (RCT). Staff and students were randomly assigned to either a simplified version of the game, an enhanced version with additional gamification elements, or a control group. The game was trialled throughout the autumn trimester of 2022 across four participating universities.

Findings

Our analysis yields several key findings that apply to all participating universities:

- The waste game is effective in improving knowledge and key predictors of waste prevention and recycling behaviours, both in the short and the long-term.
- Compared to the full version, the simplified version is more effective and engaging.
- Most students and staff found the game useful and rated the topics addressed in the game highly.
- Most participants are female students in post-graduate studies with strong pro-environmental identities.
- Principles tubes, disposable coffee cups and packets of crisps are the most challenging waste items to sort. Future educational campaigns should focus on composite packaging and soft plastics.

Together, the findings from the trial suggest that the waste game is effective and may be best presented in a simplified version going forward. Future dissemination efforts should focus on better targeting those who are underrepresented (e.g., males, 2nd to 4th year undergraduates, and those who do not have a pro-environmental identity).