

Gamification of education

Overcoming conflicting sustainability goals in a playful way

EDUCATION CONCEPTS

LESS routine,
breaking new ground

06

This paper examines the use of a simulation game to implement Target Sustainability Design (TSD), a method promoting collaboration within multidisciplinary teams in construction projects. TSD addresses the conflict between minimizing costs and implementing social and ecological measures, integrating stakeholders in creating cost-efficient and sustainable buildings. The simulation game serves as a tool to teach TSD by replicating construction project processes, engaging students in two rounds of designing and building towers. The TSD process involves three steps: set targets, design to targets and build to targets. Students play the roles of different stakeholders, while time constraints simulate real-world conditions. Data from professional participants and students alike showed the game effectively taught TSD principles, improved collaboration and supported the achievement of sustainable goals in construction projects. However, limitations include a small sample size and potential bias from students' pre-existing sustainability knowledge. Despite this, the paper highlights the importance of clear targets and multidisciplinary collaboration in achieving sustainability goals in real-life projects.

Margarete Olender

*University of Applied Sciences,
Northwestern Switzerland
Institute of Sustainability and
Energy in Construction
Muttens, Switzerland*

