



Interdisciplinary participatory development of a sustainability game; by students - for students

Karin Rebel (1), Astrid Mangnus (1), Margien Bootsma (1), Niels Keetels (2), Liesbeth van de Grint (3), and Joost Vervoort (1)

(1) Copernicus Institute of Sustainable Development, Faculty of Geosciences, Utrecht University, Utrecht, the Netherlands, (2) Expertise Centre for Research and Innovation, HKU University of the Arts Utrecht, Utrecht, the Netherlands, (3) Educational Consultancy & Professional Development, Faculty of Social and Behavioural Sciences, Utrecht University

Sustainability is one of the grand challenges we are currently facing, and studying and solving these challenges call for an interdisciplinary and systematic approach. Utrecht University (UU) aims to educate future leaders, who across all disciplines will have to face these sustainability challenges. One approach to this is to develop an applied UU sustainability game that would let students actively engage with interactive models of systems relating to sustainability themes. Serious or applied gaming is the use of gaming technology to teach participants about certain topics or train specific skills and competencies. Games designed to engage with sustainability concerns can lead to increased understanding of systems and of the roles of societal stakeholders.

To create such an integrated game, we wanted to build on the practices and knowledge of staff and students of all UU faculties, both in terms of content and in terms of game/interaction design, programming, and other game development skills. Therefore, we set up an interdisciplinary participatory development process in collaboration with HKU University of the Arts Utrecht, Games and Interaction program. Utrecht University BSc students from different disciplines teamed up with students from the HKU Games and Interaction program to develop prototypes of sustainability games. They did this in a course consisting of a game jam (a week-long rapid game prototyping process), followed by just under 2 months of further iteration of the design, testing and development by the student teams. In the teams, the UU students took ownership of the content, while the HKU students contributed their expertise in design, music, and programming. This way, the development of the sustainability game became in itself an engaging, democratic and participatory process. The game development and learning process was recorded in surveys and focus groups.

The game jam and subsequent applied game course resulted in 18 game prototypes, most of which successfully integrated sustainability content and game mechanics. The questionnaires and the focus groups showed that the learning curves of the students during the game jam and the applied game course were consistently quite high. Especially the game jam stimulated and challenged students on various levels. However, the line between growing pains in interdisciplinary education and unproductive chaos or frustration is thin. We learned that careful design and consideration of all groups involved is crucial in processes like this.