Technische Universität München

Designchallenge: Addressing the Climate Crisis through Gaming Simulation

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The Project

🎯 **Goal**
To develop an interactive simulation game on the climate crisis that engages and empowers young people to explore sustainable actions and decision-making.

🧩 **Format**
An interdisciplinary challenge for students from all TUM Schools, supported by experts in educational psychology, sustainability-focused game design, and democratic innovation.

🎮 **Outcome**
A playable and scalable prototype ready for release – grounded in educational research, co-designed with teachers, and tested in real classrooms.

🌍 **Impact**
Promotes sustainability competencies and democratic thinking – with meaningful real-world impact.

The Participants

👥 **Total participants:** 29

👩 **Female:** 10 👦 **Male:** 19

📚 **Top 5 Fields of Study**
Wirtschaftspädagogik – 6
Wirtschaftsinformatik – 6
Informatik: Games Engineering – 4
Informatik – 3
Politikwissenschaft – 3

📊 **Academic Progress**
Average semester: 4.45
Standard deviation: 2.32

The Products

🎮 **EnRoads to Future**
In this interactive simulation, students take on societal roles—such as activists or politicians—and negotiate concrete climate actions. Their choices are tested live using the En-ROADS model, emphasizing systems thinking, collaborative negotiation, and climate impact awareness.

🌍 **GeoHex**
A digital strategy game where students lead fictional nations and navigate the tension between climate goals and economic interests. They experience the ripple effects of policy decisions and must cooperate internationally to succeed in a simulated global system.

👦⚖️ **Planet Council**
Students participate as diverse citizens in an international council, debating sustainability policies in a democratic setting. Decisions are made through structured dialogue and digital voting, with consequences revealed in scenario-based future projections.

EU **ZUKO – EU Climate Conference**
In this classroom role-play, students represent conflicting interest groups at a European climate summit. Using structured discussion and the En-ROADS simulator, they explore political negotiation, misinformation, and the practical challenges of reaching climate targets.