



Fostering Climate (In)Justice Awareness through A Multiplayer Mixed Reality Game

MIAMI

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Climate Justice

Understanding climate injustice—the unequal distribution of adverse climate impacts that disproportionately affects the more vulnerable—is crucial for facilitating climate agreements among different sectors.



MR for Climate Justice

In addition to the complexity of historical and territorial inequalities in climate impacts, facilitating understanding of climate justice among the public remains a challenge due to the lack of perceived environmental connectivity[1].

This project aims to design an MR app for climate justice communication. It uses spatial animation for multi-user simulations with strategies regarding economic and environmental conflicts.

Related Work

Research has highlighted the effectiveness of immersive technologies including AR and VR for enhancing engagement with social issues; for example, VR to elicit empathy [2] and AR to support eco-friendly behavior [3].

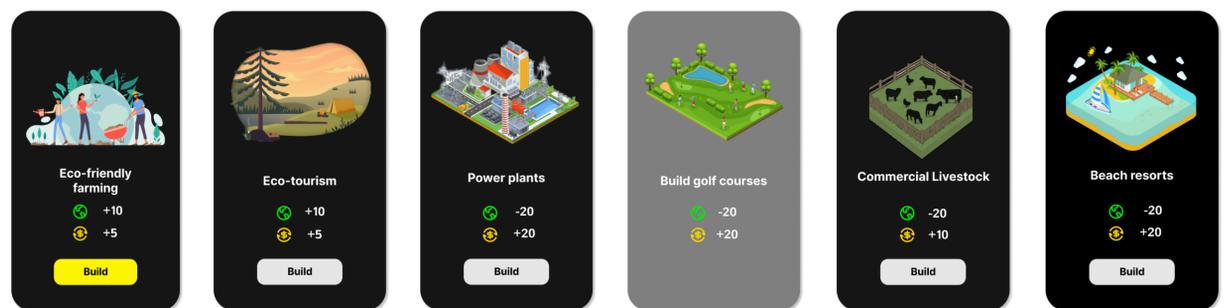
References

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- [3] Wang, K., Tekler, Z.D., ... and Blessing, L., 2021. Evaluating the effectiveness of an augmented reality game promoting environmental action. *Sustainability*, 13(24), p.13912.

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Multi-Person MR for Climate Justice

Three participants interact with a shared virtual environment while physically being in the same space. The virtual environment consists of three adjacent territories representing areas with different economic resources and climate vulnerabilities. Players have four area-specific actions they can take to develop their region. Two options significantly boost the economy but cause harmful environmental impacts, while the other two provide limited economic gain but are environmentally friendly. If a player causes excessive harm to their area, an area-specific natural disaster occurs.



Research Questions

Regarding the Design and Communication:

- **RQ1.** How do players feel about the (in)justice in the psychological ownership of the given MR territories, and how/if they address the issue?
- **RQ2.** How do players react to the conflicts of economic and environmental factors in their self territory?
- **RQ3.** How do players perceive environmental injustice (e.g., the person who produces less pollution pays more for it), and how/if they address it?
- **RQ4.** How does this shared MR game affect their attitude toward environmental justice?