# Transforming Climate Policy Dialogue: The Role of Game-Based Interventions in Engagement with Climate Change

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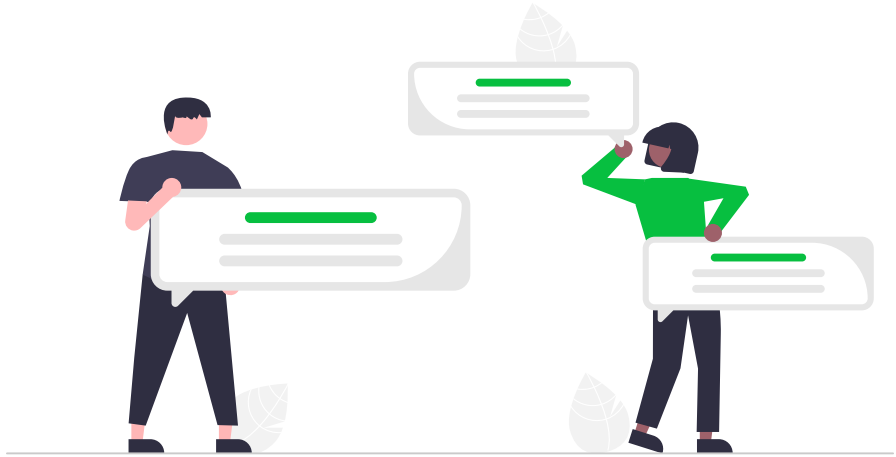
# Engagement with Climate Change

- A person's individual, psychological connection with climate change – **psychological engagement**
- A process of engaging the public in climate policy and decision-making – **citizen engagement**

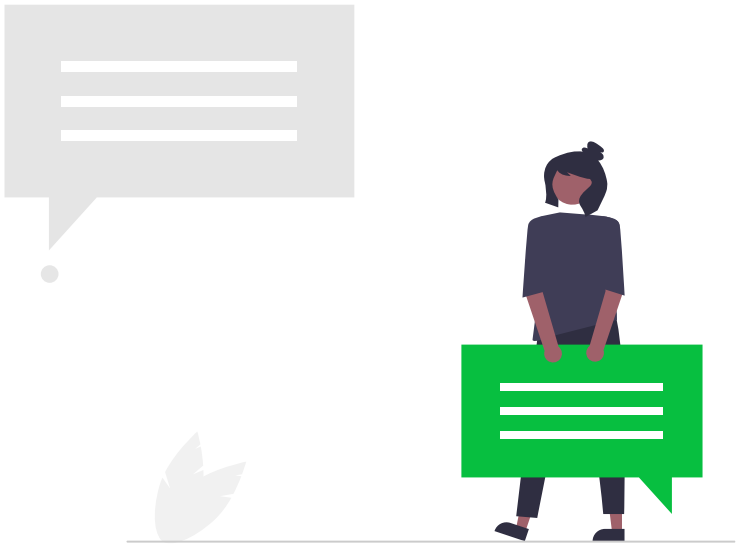
(Devine-Wright et al., 2022; Kumpu, 2022; Lorenzoni et al., 2007)

# Engagement with Climate Change

- Engaging in public engagement processes can can promote psychological engagement with climate change
  - Collective self-efficacy, climate awareness, collective action intentions
- (Policy) discussions between participants



(Boulianne, 2019; Elstub et al., 2021; Halvorsen, 2003; Huitema et al., 2010; Küting, 2020; Nabatchi, 2010; Strandberg & Grönlund, 2012; Talpin & Wojcik, 2010; Westerhoff et al., 2018)



# Discussion as Intervention

- “Quality criteria” of effective discussions:
  - Information-based
  - Solution-focused
  - Diverse perspectives
  - Equal participation
- Without: no or negative effects

(Chen, 2021; Fishkin, 2021; Hobson & Niemeyer, 2013; Ianniello et al., 2019; Monroe et al., 2019; Rowe et al., 2008; Schroeter et al., 2016; Swim et al., 2018; Terwel et al., 2010)

# How Do the Games Come In? The Role of Role-Playing

- Role-playing as structured discussions
  - Participants in the role of policymakers tasked with solving policy issues
  - Can promote individual engagement with climate change
  - Gap: Discussion and Role-playing

(Edwards et al., 2019; Hensel et al., 2023; Ouariachi & Elving, 2020; Rooney-Varga et al., 2018, 2020; Rumore et al., 2016; Salvini et al., 2016)

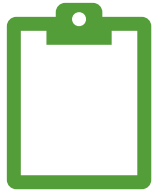
# Study Objective and Hypotheses

- Develop and implement a role-playing intervention for effective discussions on climate policies
- After the intervention, participants will report:
  - higher collective efficacy
  - collective action intentions
  - climate change beliefs
- Participants' perceptions of discussion quality will mediate these increases

# Methods

**Participants:** 191 students from 10 school classes from urban and rural regions in Austria

**Intervention:** 1.5-hour face-to-face sessions during regular classes



**Data Collection:** Pre- and post-intervention questionnaires

**Analysis:** Structural Equation Modelling (SEM) to assess direct and indirect effects. Including school classes as dummy variables to account for multilevel structure

# Intervention Design

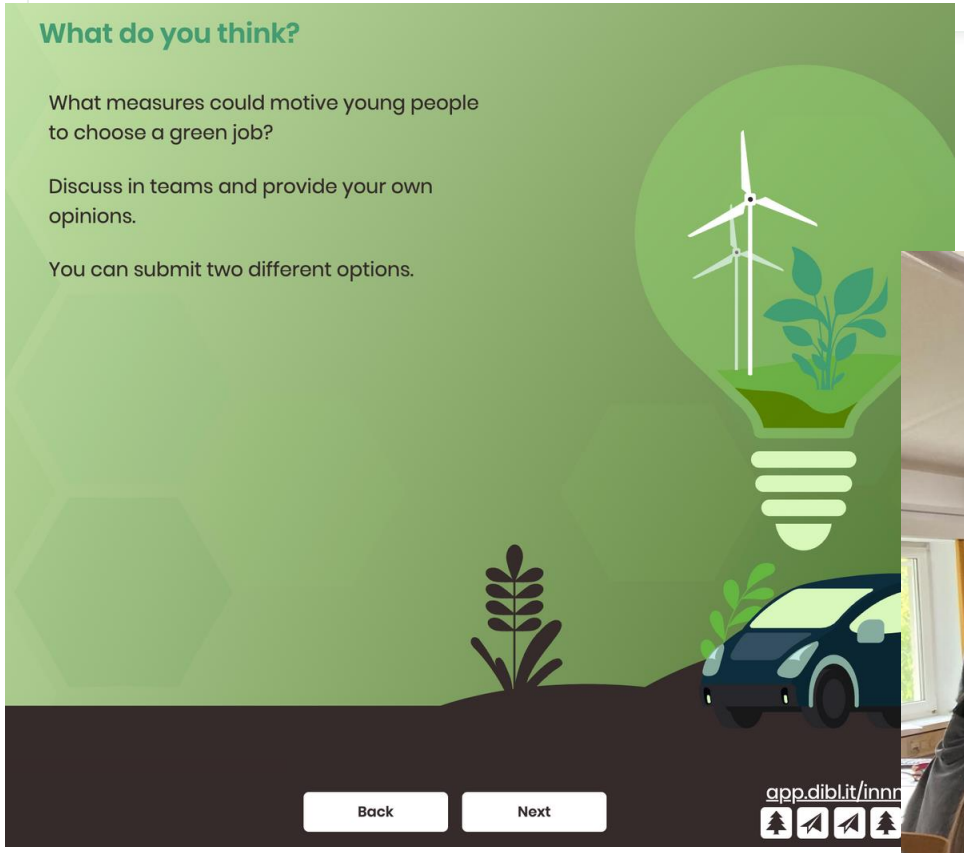

- Students as Poliymakers

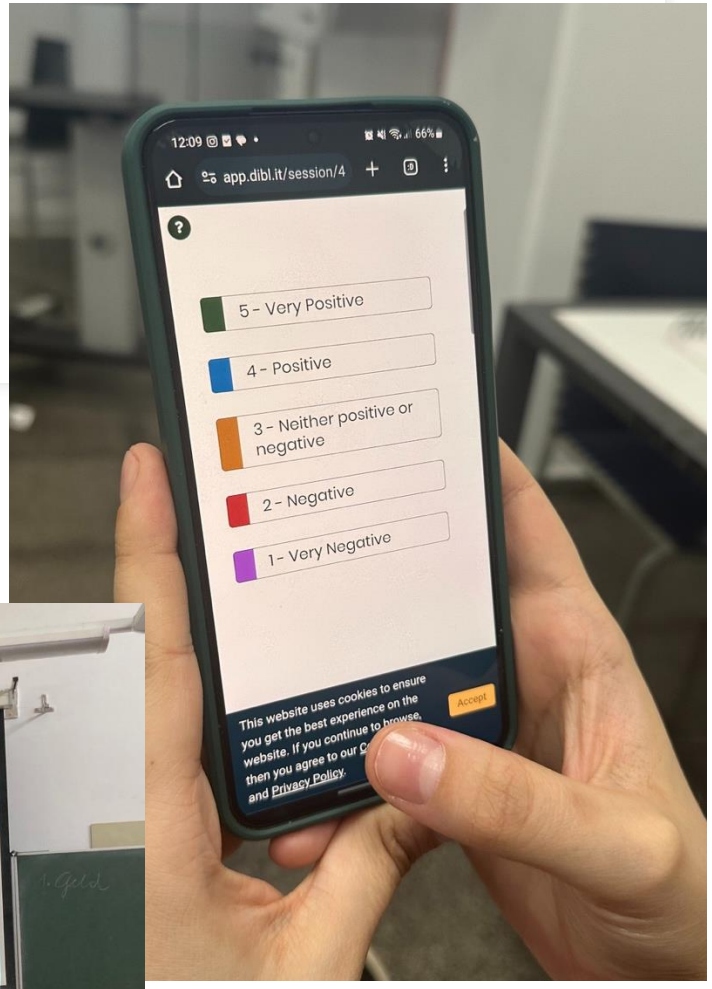
- Promoting Green Jobs
- 3 Rounds of Sub-Issues

- Discussions for Developing Ideas
- Individual Voting

- Interactive Survey Platform

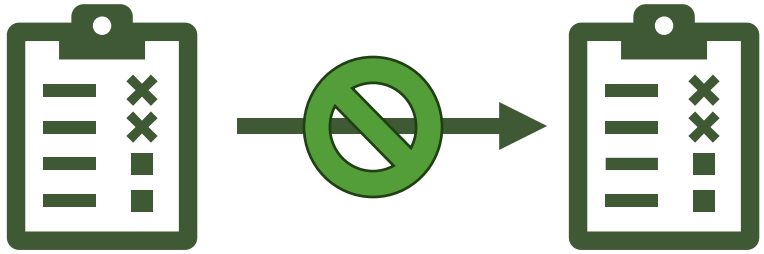
# Intervention Design



# Preliminary Results: Pre- to Post-Differences

**No significant differences between pre- and post-measures of collective efficacy beliefs, collective action intentions, and climate change beliefs**



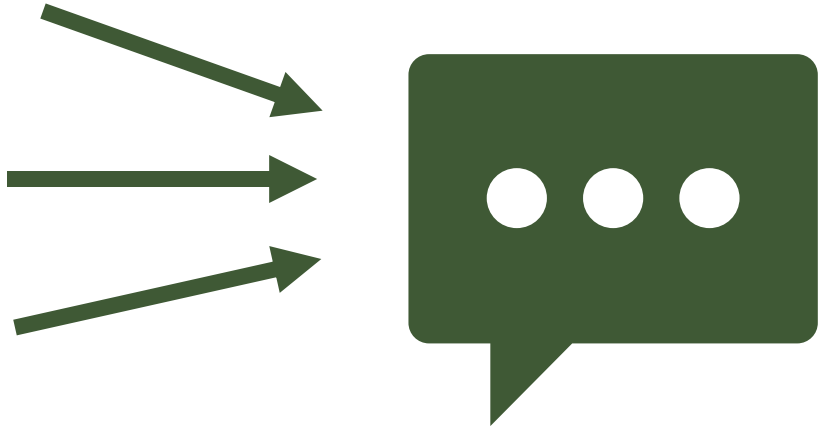
collective efficacy beliefs (β = -.11, p = .303, 95% CI [-.47, .15]);
collective action intentions (β = -.22, p = .164, 95% CI [-.7, .12]);
climate change beliefs (β = -.19, p = .068, 95% CI [-.56, .022])

# Preliminary Results: The Role of Perceived Discussion Quality

**Perceived discussion quality positively predicts increases in belief of the reality of climate change ($\beta = .45$, $p < .001$, 95% CI [.20, .76])**

# Preliminary Results: The Role of Perceived Discussion Quality

**Perceived discussion quality is higher if initial levels of collective action intentions and belief that climate change is human-caused are higher**



collective efficacy beliefs -> discussion quality (β = .15, p = . 095, 95% CI [-.47, .15]);
collective action intentions -> discussion quality (β = .15, p = .007, 95% CI [.05, .34]);
climate change beliefs -> discussion quality (β = .20, p = .011, 95% CI [.04, .30])

# Exploring Variation Across School Classes

- Differences in initial levels of climate change beliefs, collective action, collective efficacy
- School classes in urban areas tended to show increases in collective efficacy, collective action intentions, and climate change beliefs after the intervention
- The school class with the youngest students and focus on vocational education also perceived lower discussion quality and decreases in climate change beliefs

# Next Analysis Steps: Discussion Content and Policy Preferences

- Qualitative and descriptive analysis of:
  - Students' votes, ideas, strategies
  - Group dynamics
  - Emerging topics when discussing climate policy

- Contextualise main results and variations between school classes

# Discussion

Influence of our role-playing intervention on engagement with climate change was limited

Variations in school classes based on area and school type

Limited sample

Limited study design

# Outlook

1

Exploring participants' policy preferences, ideas, or concerns

2

Future applications in educational settings?

Positive feedback from students and teachers

3

Future applications in research - new policy issues and new demographics?

# Thank you for your attention!

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