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Towards the complete gamification of an "Environmental Impact Assessment" MSc teaching course

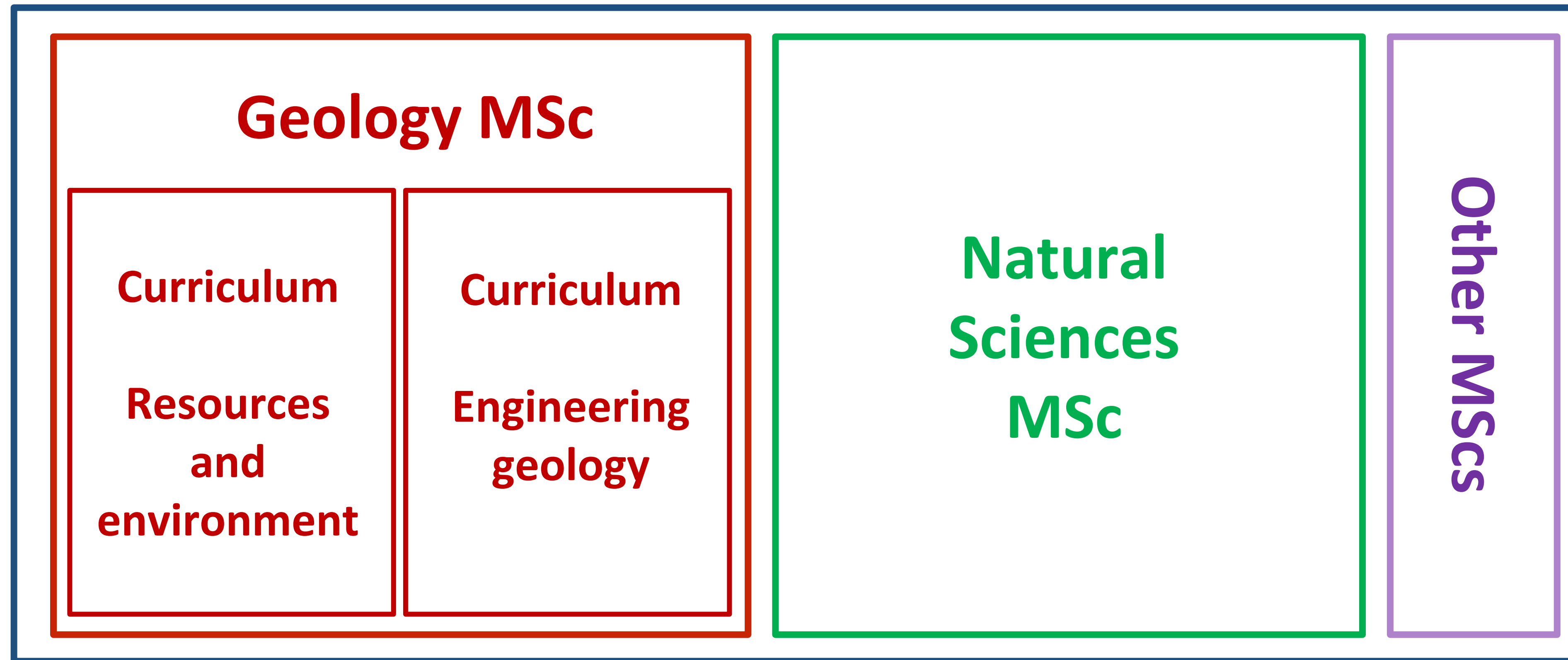


Segoni Samuele

samuele.segoni@unifi.it

E.I.A. teaching course

Class with students from different
Master's Degrees (2° cycle degrees)



Environmental Impact Assessment

What is Environmental Impact Assessment (EIA)?

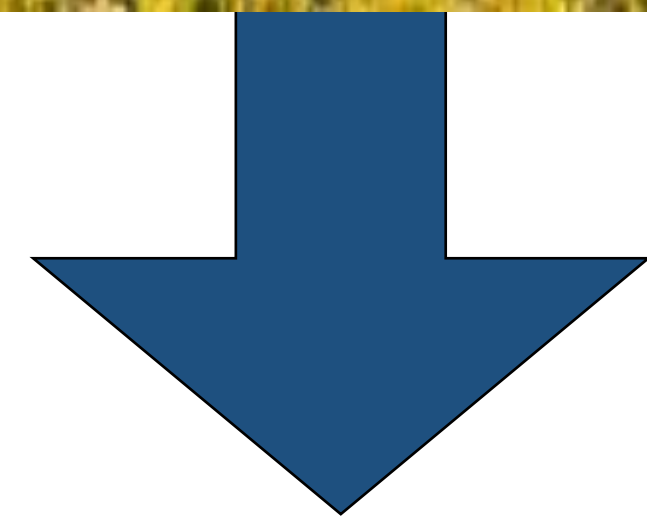
- Technical/administrative procedure for implementations with possible negative environmental impacts
- Compulsory (2011/92/EU and 2001/42/EC)
- Key decisional step for sustainable development

E.I.A. teaching course

Environment



Interferences / pressures



Impacts



Mitigation measures

Why game-based teaching?

- It started with a role-playing session during the final lesson
- Additional elements added year by year
- Application of games from “Games for Goscience” EGU session
- Great feedback from the students

Topics and games

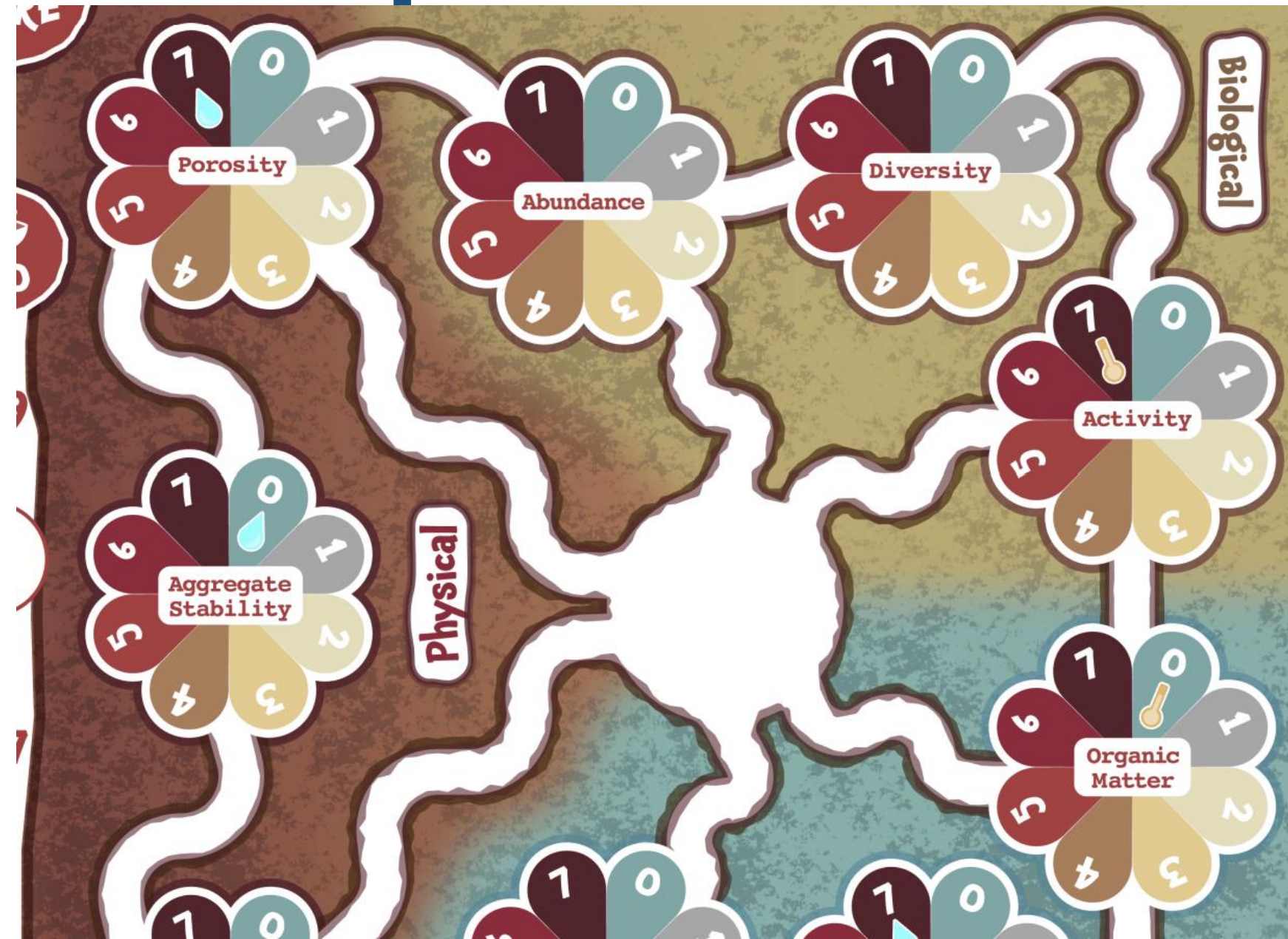
COURSE TOPIC	Gamification	Game-based learning
Introduction		
Regulation framework	X	X
Air		
Climate		X
Water		
Soil		X
Flora, fauna, ecosystems	X	

COURSE TOPIC	Gamification	Game-based learning
Landscape		
Urban environment		
Human interferences (noise, radiations, pollution...)	X	
Indicators	X	
Impact analysis		
Socio-political aspects		X
Fieldtrip		

Students can win bonus points to increase their final grade

Environmental component = SOIL

- Soil properties



- Typical impacts



EGU23-17593



BRITISH SOCIETY OF SOIL SCIENCE



- Typical mitigation measures

Event DECK

Salinisation Remove one

Build-up of salts in soil, resulting from poor irrigation and drainage

Event DECK

Severe Wildfire Remove one

Ash clogs soil pores, organic matter burns causing nutrient loss and soil life is harmed

Soil Power DECK

Integrated Grazing Add one

Add grazing animals to the crop rotation

<https://soils.org.uk/dirtymatters/>

Environmental component = CLIMATE

Climate change is part of the module

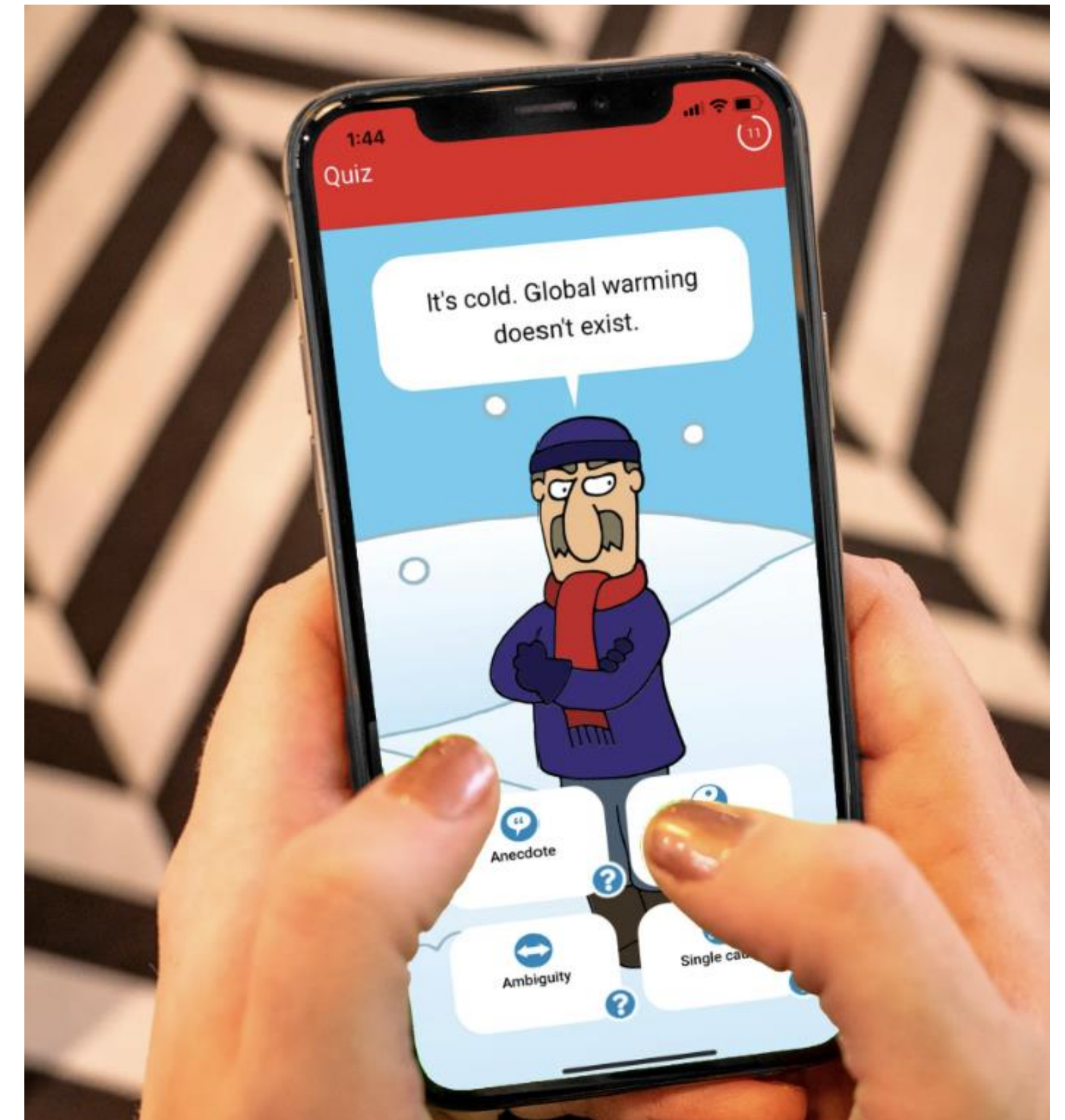
Educated students
Vs
misinformation and denial techniques



Know your enemy and be resilient to misinformation!

- Lesson on Thursday
- Homework: play the game in the weekend
- Next lesson on Tuesday: who has the highest score wins bonus points

EGU22-1251



Cranky Uncle game: building resilience against misinformation



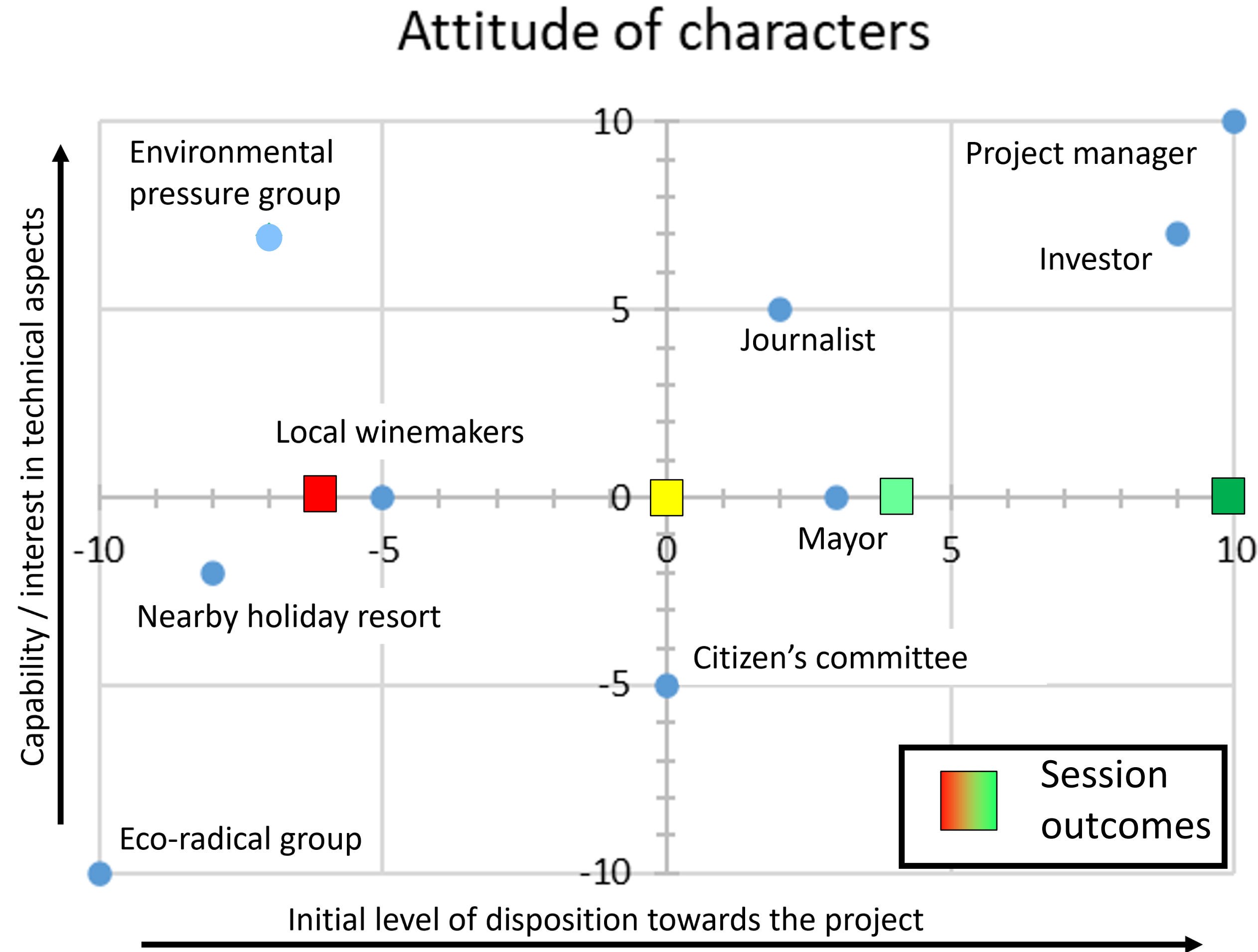
<https://crankyuncle.com/game/>

Social and political aspects = Role Playing Game

EIA procedure for a geothermal plant Funny exaggeration of a typical public debate

9 characters:

- different expertises and knowledge
- different backgrounds
- contrasting objectives
- potential mutual interests
- different codes of conduct



Environmental Research Communications

A role-playing game to complement teaching activities in an 'environmental impact assessment' teaching course

Samuele Segoni

<https://doi.org/10.1088/2515-7620/ac6f47>

Conclusions: best students' feedbacks

From a BSc student:

*"Prof, next year I will select another MSc curriculum, but can I select your course as an optional one? I'm a **Dungeon & Dragons** enthusiast and I would like to play your role-playing game!"*

From one of the best (but "too serious") students:
"What... wait... wtf... Were we really supposed to play the Cranky Uncle app to get extra points for the exam? I didn't do that... I thought it was a joke..."

From a mother-worker-student:

- *"My child used to tell me that I'm crazy at studying so hard at 40 and that he will never attend University"*
- *I've told him about the game-based activities of this course*
- *Now he says that he will study at the University too!"*

Thank you for your attention

Questions?

Suggestions?

Are you aware of games I may use?

GET IN TOUCH!

samuele.segoni@unifi.it