

CAN YOU HELP SOLVE THE CLIMATE CRISIS?

1. INTRODUCTION

Topic(s) of the EER: Entrepreneurship skills for a sustainable world

Target age groups or profiles: Higher education educators; 8 participants.

Summary of concrete examples where the EER can be implemented, or how to adapt it to different groups: Students or teachers from different areas of knowledge.

Duration: 45 minutes.

2. OVERVIEW

Learning objectives: Environmental awareness.

Decreasing the environmental footprint, sustainable decisions for a "green economy.

How business impacts on the environment and weak environmental management impacts on business.

Entrepreneurship skills developed: teamwork; financial analysis; problem solving; critical analysis.

Narrative of the EER

The escape room is set in the year 2050. Entrepreneurs have created a factory of magic potions - love, intelligence, beauty, etc. The factory had great profits and everything seemed to go well...however these wonders come at a cost - this industry has become the most polluting industry in the world.

One morning the entrepreneurs are in the factory and all the pollution levels have reached the limits, caused by uncontrolled production levels, consumption and use of natural resources.

To escape the room, they had to solve a total of three puzzles to find the optimal levels of each component, neutralize the threat and get the factory working properly again. Can you help them in this mission? But be quick! Pollution levels are through the roof and you only have 30 minutes before it's impossible to breathe in this room!

Sequence of the challenges

- 1) Set the narrative around an environmental problem, regarding the rising levels of CO₂ which is a sounding problem nowadays. We also designed and wrote some news, that were part of some puzzles to create awareness around environmental problems (e.g. one of the news contained real statistics about the countries that polluted and the main reasons for it to happen).
- 2) To have the participants raise their financial literacy, one of the puzzles could be solve by finding the answer to a specific financial formula. Knowing that some participants would not know this formula and how to calculate it, we set clues and tips for them to find the formula and the right way to calculate the formula.

3. PRE-GAME BRIEFINGS

Structure: Open puzzles



4. DESCRIPTION OF THE EER

Materials/logistics:

- Camera (used to film the experience);
- Computer (to contact the gamemaster and access clues);
- Portable speaker (to communicate the narrative and to provide background music);
- Locker, tables, whiteboard and other props;
- Spice jar set (simulating laboratory glassware);
- Digital table clock (for participants to control the time);
- Disposable Gowns;
- Safe (to guard the "key" to Escape the Room);
- Various warning signs;
- Map & control panel (customized);

Description of each challenge:

3 main puzzles for find the optimal levels: H2O, CO2, € (stock)

€ (stock): Figure 1.

- Whiteboard with information: product, initial stock, buying, final stock, cost of goods sold (COGS), sales and profit;
- The final number to find is profit. On the board there are various information and post-it with symbols;
- Each symbol indicates a number. They should look at the dice that contain the numbers and look at the arrow that the symbol indicates to find the correct number (figure 1);
- There is also a paper with text about sustainability, and hidden in the text is the formula to find the COGS. If participants place the cut paper on top of the text they quickly find the formula;
- To find the number in this puzzle, they should calculate the COGS, subtract the value of sales and they will find the profit from stocks (€).

Puzzle H2O: Figure 2

- Report on the company's water consumption, month by month;
- In the report there is highlighted the ideal water consumption;
- There is also a post-it on the whiteboard that says: Don't forget to regulate the ideal water consumption;
- And news about water wastage around the world and water pollution from factories;
- Having discovered this number, you should just put it on the control panel.

Puzzle CO2: Figure 2

- News about the increase of CO2 in the world. And the highest concentration of CO2 in human history. And information about the initiatives against climate change in the world to reduce emissions of gases that cause the greenhouse effect;
- In the news there was a list of the countries that most emit carbon dioxide;
- Inside the lockers a tip: Connect the 2nd, 3rd and 5th country and find the final number of CO2;
- With this information, the players should connect on the world map the 3 countries (in this case map the countries were China, Russia and Germany);
- There is a line and pins marking several countries on the world map;
- The connection of the 3 countries, form the number 7.



Final: The participants must put the 3 numbers found on the control panel, and according to the order open the safe and regulate the pollution levels of the environment. Inside the safe is the key to escape from the room.

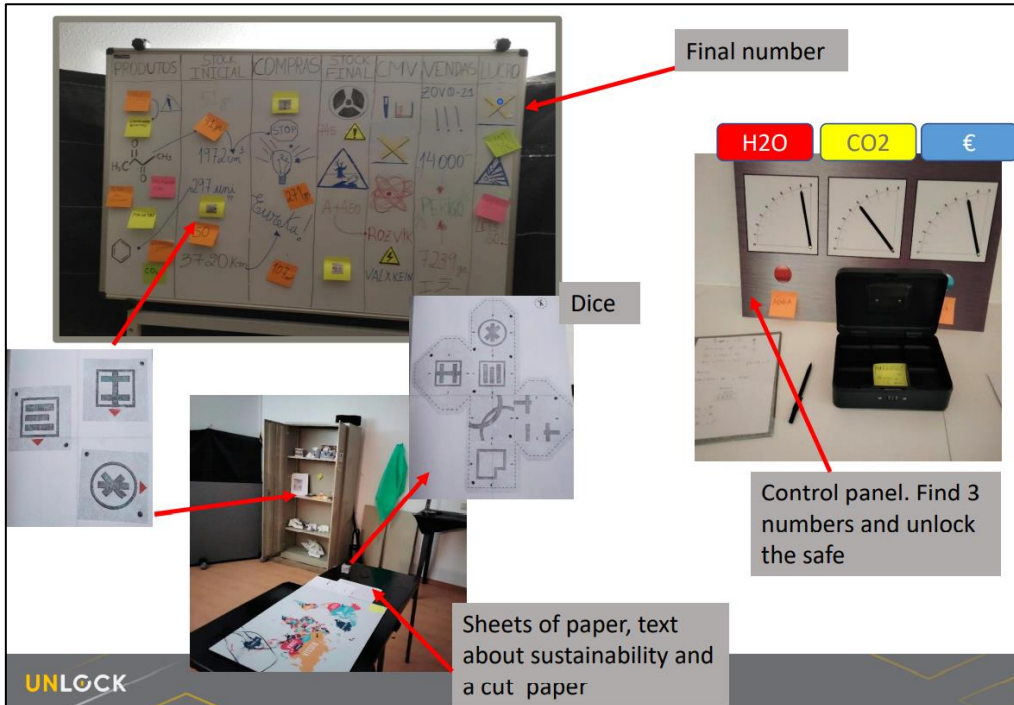


Figure 1. Puzzle Stock (€)

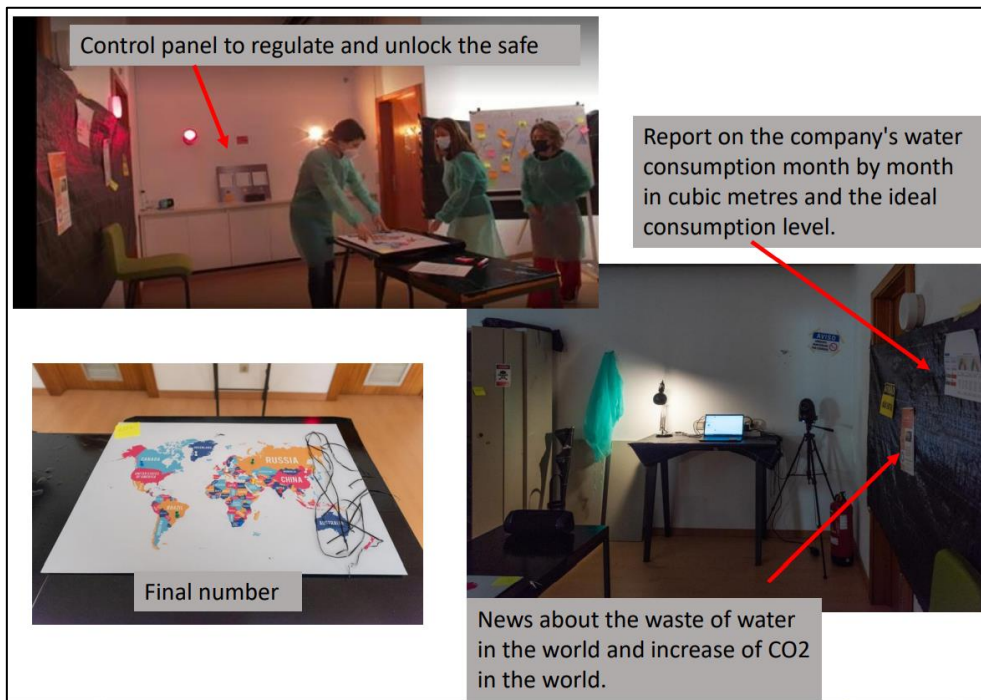


Figure 2. Puzzle H2O and CO2

5. FINAL REFLECTIONS

We applied a general questionnaire about the experience and the development of soft skills. See Figure 3. There was also a short reflection with all participants on the learning objectives of the escape room. In this case sustainable entrepreneurship.

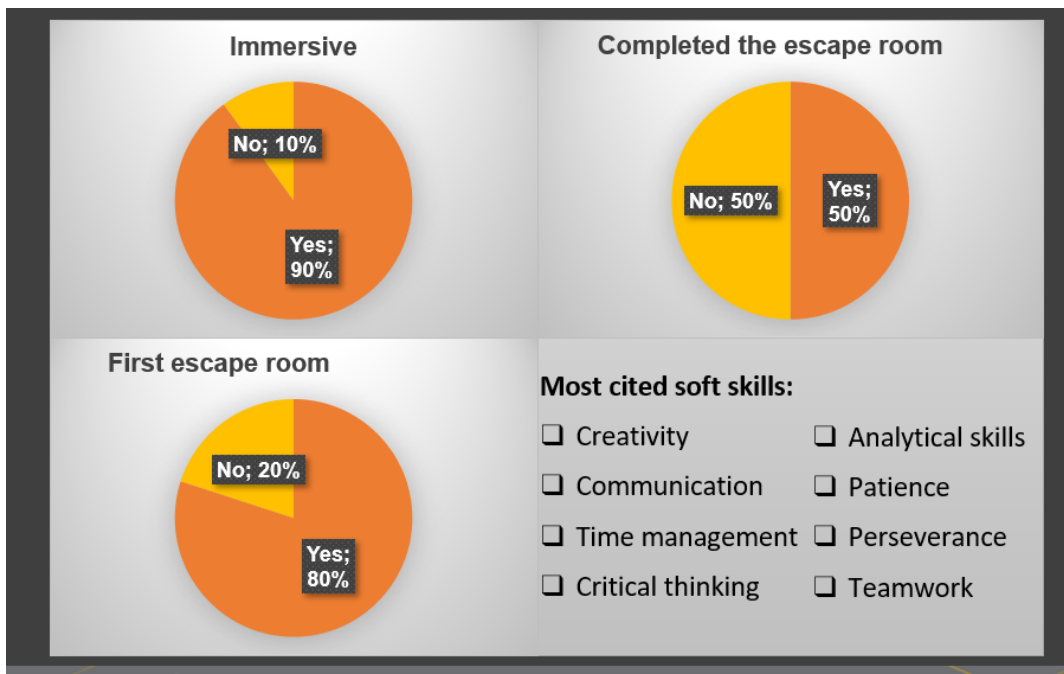


Figure 3. Results from the questionnaire

6. OUTCOMES / IMPACT

The escape room was applied in a pedagogical innovation workshop at the university. The experience was highlighted in the university's pedagogical journal.

Professor Marta was invited to talk about the topic in the university podcast, in which she explains the methodology of the escape room in education.

After the activity Marta was invited to give the online course for teachers at the university's pedagogical innovation days. we applied a digital escape room for 56 participants.

7. LESSONS LEARNED

The main challenges were related to participant engagement. They were afraid of being locked in a room, and not being able to solve the puzzles. We told everyone that the room would not really be locked and they could leave at any time. We also put a computer in the room, to help participants with the clues.

The success, was when we noticed the engagement and collaboration of the participants after the game starts. Everyone was excited to try to solve the challenges. The tips were important in completing the challenge. They reported that it is an interesting methodology for developing soft skills, particularly communication, teamwork, stress tolerance, time management and attention to detail.

8. CONCLUSION AND FUTURE OUTLOOK

This was a small activity at Aveiro University to disseminate the EER methodology among teachers. We hope that now with access to the MOOC, more teachers can get to know the methodology and apply it in education.



