

Activity 3.1.3 - Co-Design Fictions

Estimated duration	60-90 minutes
Requirements	Modules 1 and 2. If done in-presence, moderately large open space where students can make plays and enact.
Hardware and Software tools used	Remote Software - Video-conferencing software. Hardware - Desktop/laptop computer
Type of assessment	- Oral presentation in front of class. - Quality of the ideas and prototypes developed. - Open-ended questions by the teacher about the feasibility, appropriateness and impact of their proposed design. - Questions of peers and discussion after presentation.

The aim of the activity is to provoke students and raise questions about future scenarios in AI. It can also be used to facilitate discussions about the potential forms, functionality, and applications of AI technology by using fictional prompts or what-if questions. Students should be able to envision, discuss, write and design possible future AI technologies.

Procedure (steps)

Anticipatory Set

1. First, the teacher should establish the coordinates of reality, that is, present the current state of AI implementation in society, as well as larger social and cultural contexts surrounding it. Moreover, students should be presented with the concepts and technologies of AI for which they are going to create their story (eg. facial recognition - in discussing this example teachers can refer to the activity of Module 2 with Scratch Face Sensing).

Direct Instruction

2. The teacher presents a fictional story to elicit the exploration of ideas and designs. The story could begin with a personal experience, a news headline or an existing fiction story.
3. The story can have a "what-if" moment, or a counterfactual that elicits the creation of alternative storylines by the students.

Example	What-if moment
Using Facial Recognition at school	What if the face profiling goes wrong? What happens when people share similar face features? (e.g. twins) And if some faces are better recognised than others?
Using apps that create fictional images and videos (deepfake). This content (seem to) show a person participating in activities (or being in a place) that never actually happened	Imagine that you see a video showing you walking in a city abroad that you have never visited - What will be your reaction? You realize that the video is fake and created with an AI system using a video that you posted online. How do you feel about other people manipulating your original video?
Imagine a chatbot that can diagnose health issue based on the information provided but the patient.	What happens if The AI makes an error and provides a wrong diagnosis? What if a patient does not mention all the information about his or her health status?
consider a video or a social media platform such as YouTube or Instagram or TikTok that shows you personalized content	You see content that is selected for you by an AI algorithm. What happens if you can see only the content that the AI suggests? What if the contents are created specifically for taking advantage of such algorithms? What if the algorithm is biased and shows things that actually do not interest you?

- Students are then prompted to design a piece of technology that answers to the context and needs of people in the fictional story created by the teacher.
- The teacher must ask the children explicitly to not think about technological, manufacturing and skills impediments.

Guided Practice

- The teacher divides the class in small groups to codesign
- The students must then create a prototype for their designs, using and shaping simple materials like paper, cardboard, fabric, masking tape etc.

Check for Understanding

- The teacher can go around the groups to check the quality of work and guarantee the discussion remains relevant. Teachers can solve doubts and give insights when prompted.

Independent Practice

9. When their design is ready, students should create a story around the prototype, describing its functioning, who uses it, for what it's used, while telling an engaging story exploring the social and ethical dilemmas their technology aims to solve.

Closing

10. Students present their prototypes to the class and have their solutions evaluated and discussed by their peers.

Troubleshooting

Possible issue	Possible solution
Lack of time for the full activity.	Make the activity a homework assignment. Split the work in different lessons.
Students get stuck on the current state of technology, or know-how when thinking about their designs.	Asking the children explicitly to not think about technological, manufacturing and skills impediments.
Students generate solutions that are seemingly magical, fantastical or irrelevant to the issues or social context discussed.	Guiding their group discussions with probing questions if students start getting lost in fantasy.
Lack of confidence of students in their design skills.	Giving reassurance that they are able to devise a design with their current abilities.

Resources for teachers

Description of the method applied to the teaching of new or emerging technologies:

https://irep.ntu.ac.uk/id/eprint/35113/1/12674_Hardy.pdf

Applying design fiction in primary schools:

<https://www.tandfonline.com/doi/pdf/10.1080/14606925.2019.1594972>

More in-depth literature:

- Cheon, E., Sher, S. T. H., Sabanović, Š., & Su, N. M. (2019, June). I Beg to Differ: Soft Conflicts in Collaborative Design Using Design Fictions. In Proceedings of the 2019 on Designing Interactive Systems Conference (pp. 201-214).
- Hardy, A. (2018). Using design fiction to teach new and emerging technologies in England. *Technology and Engineering Teacher*, 78(4), 16-20.
- Maxwell, D., Pillatt, T., Edwards, L., & Newman, R. (2019). Applying design fiction in primary schools to explore environmental challenges. *The Design Journal*, 22(sup1), 1481-1497