Fostering Transformative Agency of Children in the Age of AI

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Overview

– **Our projects**

– **Critical, ethical, empowering design**

– **Transformative agency of children**

– **Fostering transformative agency of children in the age of AI**

Our projects

- **Make-a-Difference (MAD) (2019-2023)**
  - Exploring critical design with children
  - Exploring children's emerging designer and maker identities
  - Tackling a significant societal problem of bullying with children
- **Children's Transformative Agency and Emerging Technologies for Social Good (TAKEOVER) (2024-2028)**
  - Exploring the potential of emerging technologies (AI, VR, social robots) to address significant societal problems (climate change, gender equality, bullying, discrimination, harassment) with children
  - Exploring children's emerging transformative agency

TAKEOVER
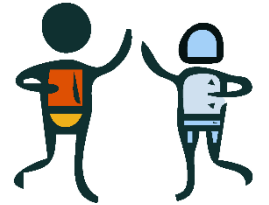
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Critical, ethical, empowering design

➤ *Provide critique of the status quo: Critically scrutinize the oppressing conditions of the status quo — creating and/or maintaining injustice, inequality, oppression, domination*

➤ *Accomplish transformative redefinition of the status quo: Overcome injustice and alienation, promote emancipation and liberation of the oppressed*

- **Critical design**
  - Scandinavian participatory design
  - Critical and speculative design traditions in design research

- **Ethical design**
  - Questions around good and bad, right and wrong, values and consequences of design

- **Empowering design**
  - For and by children
  - Individual vs. collective
  - Mainstream vs. critical
  - Relational vs. motivational

Transformative agency

− **Cultural Historical Activity Theory as a basis**
  - One's capacity to act, one's initiative and commitment to transform the world (e.g., Kajamaa & Kumpulainen 2019, Sannino et al. 2016)
  - Manifests, e.g., through resisting, criticizing, explicating change, envisioning change, committing to action, and taking action (Haapasaari et al. 2016)
  - A collective process
  - Entails expansive learning

Fostering transformative agency of children

- **Fostering expansive learning**
  - Learning something novel, together
  - Beyond schoolwork
  - Regarding the topic, themselves, the tools used for solving the problem
- **Fostering an active, critcal, reflective mindset**
  - Criticizing
  - Envisioning a change
  - Action taking for it
- **Enabling making a change and having an impact**

Fostering transformative agency of children

- Addressing problems children care about
- Acknowledging complexity of the problems
- Sensitizing with emerging tech as tools for social good
  - Using/prompting/comparing LLMs, algorithmic auditing
  - Creating (baby) LLMs
  - Envisioning and critiquing AI futures
    - Best and worst case scenarios
    - Ad and anti-ad videos
    - Activism campaigning
    - Theatre of the oppressed

A. SENSITIZING PHASE

1. SENSITIZING WITH EMERGING TECHNOLOGIES AND TRANSFORMATIVE AGENCY

- Start Interviews/surveys
- Technology friendship book
- Interview close adults
- Technology explorations
- Cultural probes

2. SENSITIZING WITH THE PROBLEM

- Personas and scenarios
- Padlet discussionS
- Literature searches
- Conflicts of motives analysis

B. CRITICAL DESIGN AND MAKING PHASE

3. IDEATION

- Design fiction
- Miracle method
- Brainstorming
- Scenarios and personas
- Ideation in online pinboard or whiteboard

4. CRITICAL ANALYSIS

- Best- and worst-case scenarios
- Ad and anti-ad videos
- Group discussions on underlying assumptions
- Reflections on values embedded in design

5. DESIGN AND PROTOTYPING

- Low-fi prototypes
- Interactive prototypes
- Coding
- Creating (baby) LLMs

6. THEATRE OF THE OPPRESSED

- Drama rehearsals
- Preparing scenes
- Presenting scenes for the spect-actors

7. ACTIVISM

- Planning and implementing activism campaigns

C. REFLECTIVE PHASE

8. REFLECTION AND EVALUATION

- Final presentations of prototypes
- Peer evaluation of prototypes
- Reflective end-interviews/surveys
- Reflection as a continuous task

Exploring problems children care about

Carry a stone in your pocket for one week as if it was a magic tool. Think about where it could be used in your everyday life - what problems could it solve? What problems would you like it to solve? How?
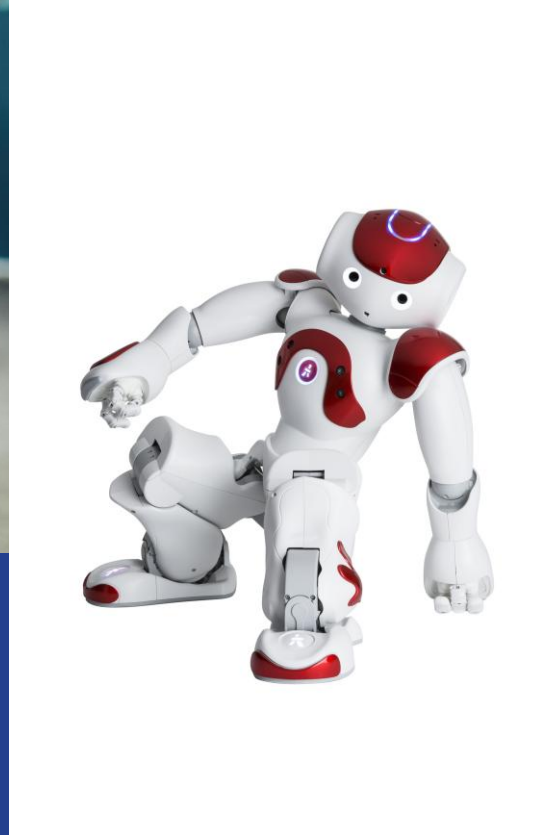
Exploring novel technologies as tools

Little girl in VR headset · Free Stock Photo

Somekone-social-media-emulator » Generation AI

https://commons.wikimedia.org/wiki/File:NAO_Robot_.jpg

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Exploring novel technologies as tools

– **Deconstructing-re-constructing generative AI**

- Prompting LLMs (ChatGPT, Gemini, Claude etc.)

- Exploring bias in LLMs

➢ Small-scale algorithmic auditing

➢ Creating baby LLMs

- Training LLMs using first Alice in Wonderland, and then open datasets (books as text files from Project Gutenberg)

- Exploring the responses generated

Exploring novel technologies as tools

- Think about the problem your group has selected for this project.

- Can you use LLMs in some way to help to address the issue?

- Can they help you solve the problem - or parts of the problem?

- Will they create new problems?

Exploring complexity of the problems:

Conflicts of motives – Instragram addiction as an example

https://www.pickpik.com/baby-boy-child-childhood-computer-concept-3808

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Envisioning AI futures: discussions on a miracle happening overnight

File:Children at school (8720604364).jpg - Wikimedia Commons

Usually when you're waiting for your own round to get into that pool, maybe then everyone might cheer each other. Usually, you only cheer those who you know, or who are in the same sports club

Design outcomes

Electric Shock robot

Anti-bullying Police Car

Music playing comforting robot pig

Punishing & rewarding robot team

Empathy stamp robot

Crabteam	Pupils can create profiles, report bullying to teachers or school counsellors, anonymously if they wish, photos can be attached to the report.
Nameless app	Pupils can add friends, get support through calls, chat, or messaging, and receive daily memes.
Chatbox	Pupils can chat to share experiences or get help from psychiatrists through calls or messaging, the professionals have profiles, pupils can select who to contact.
Bullycounter	Pupils can chat to get support, share experiences or advice to help others, contact adults if they need more support and get targeted content based on age through a "get help"-button.
AntiBullying	Pupils can talk to others anonymously if they wish, or to chatbots if nobody is online, report bullying to adults, and respond to a daily questionnaire that keeps track of how pupils are feeling.
Anti-bullying service	Pupils can receive tips on handling bullying, chat with experts to discuss why they were bullied, use an emergency button to call the principal or the police if it is serious, or if they feel like "doing something dangerous".
SirHelp	Pupils can fill in a survey to evaluate the bullying situation, receive advice or talk to a real person.
Grindr	Pupils get professional support through calls, chat, or meetings, can report bullying to adults, anonymously if they wish, and receive targeted content based on age. The app collects and analyzes data on bullying.

Critiquing AI futures: creating best and worst case scenarios on the consequences of AI systems

Electric Shock robot

Critiquing AI futures: creating ad and anti-ad videos on the AI systems

Children lying on sofa and using gadgets · Free Stock Photo

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Fostering action taking: theatre performances to mobilize the school community

It is worth helping if somebody is being bullied.

f I was a bystander in real life, it would be a bit stupid, if I didn't help the bullied.

Fostering action taking: activism campaigns to mobilize the school community

You have to voice your own opinion.

I didn't stand up for others, I just minded my own business […] I'm going to be stronger and I'm going to stand up for others.