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WELCOME

Techno-Ethics

Why it is important to think about the societal impact of (educational) technology on humans and society

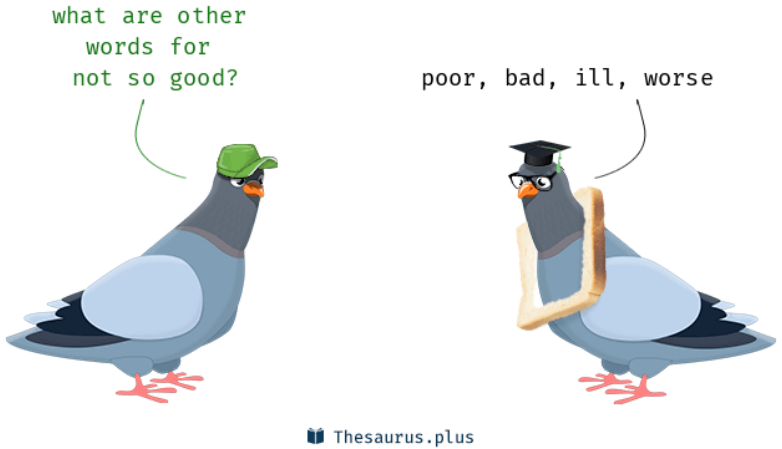
(and how to put those thoughts to action!)

Presentation ISE EdTech Summit Barcelona February 2023
Jo-An Kamp, Fontys University of Applied Sciences, School of IT

Assignment

- I will show you a video prototype from a first year ICT and Media Design student
- Please write down everything you see that can be explained as either *good* or *not so good* (for now and in the future)

(The video is 2.30 minutes long. Prepare for a quick shout out afterwards. Let's go!)



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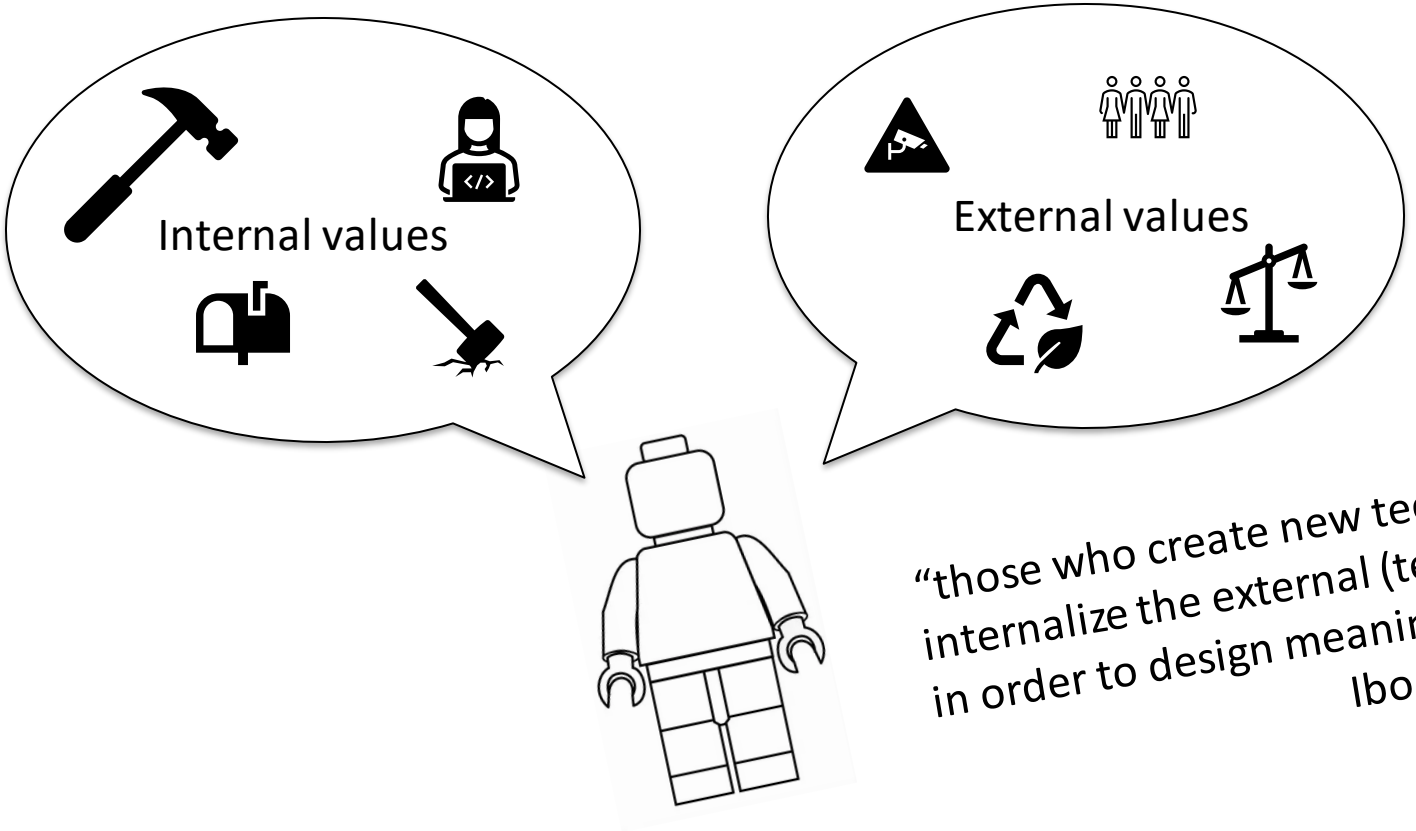
Recap: Shout out

"The more Artificial Intelligence enters our lives, the more essential Ethics & Philosophy become."

(THE AI THOUGHT BOOK)

Engineers have a natural tendency towards internal values



"those who create new technology should internalize the external (terminal) values in order to design meaningful innovation"
Ibo van de Poel, 2015

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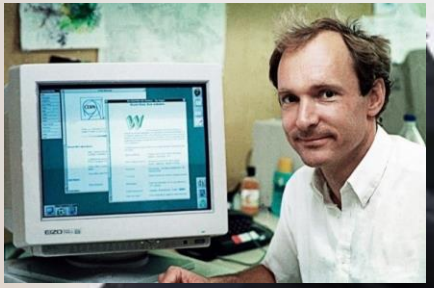
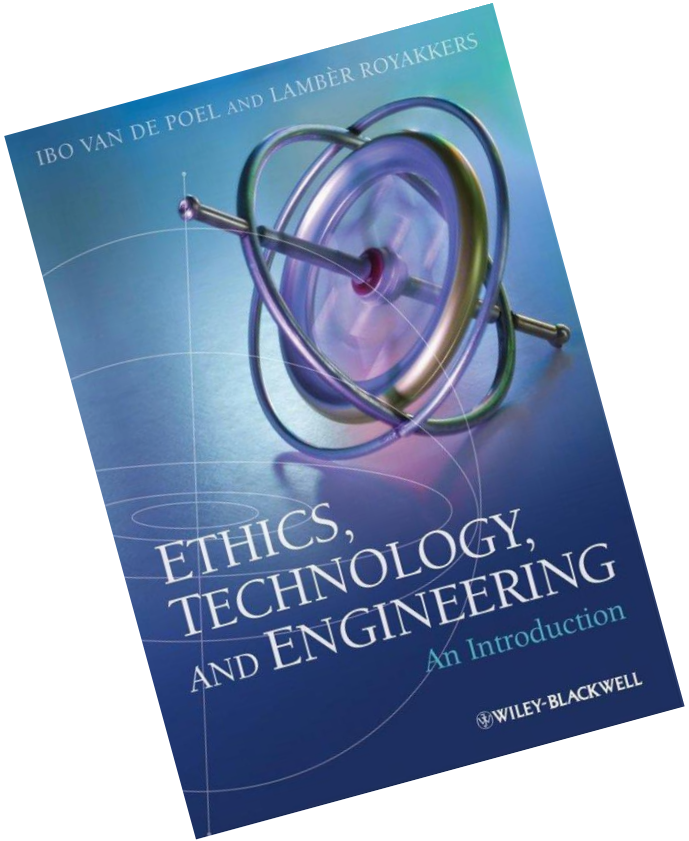
Avoid becoming a ‘tech regret’





Introduction

One of the **main differences between science and engineering is that engineering is not just about better understanding the world but also about changing it.** Many engineers believe that such change improves, or at least should improve, the world. In this sense engineering is an inherently morally motivated activity.

"We become what we behold. We shape our tools and thereafter our tools shape us"

Marshall McLuhan
(but actually John Culkin)

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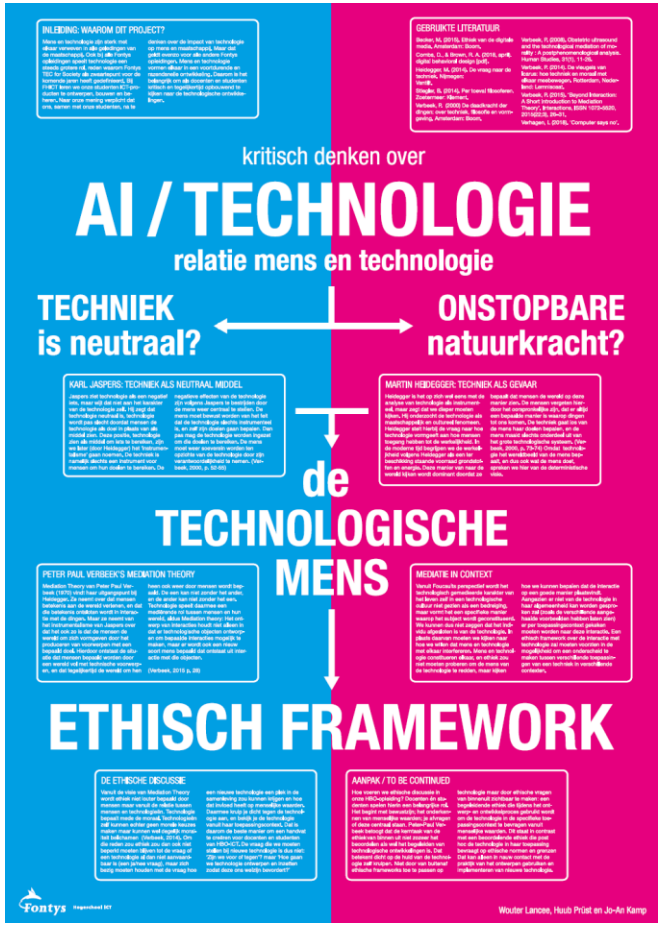

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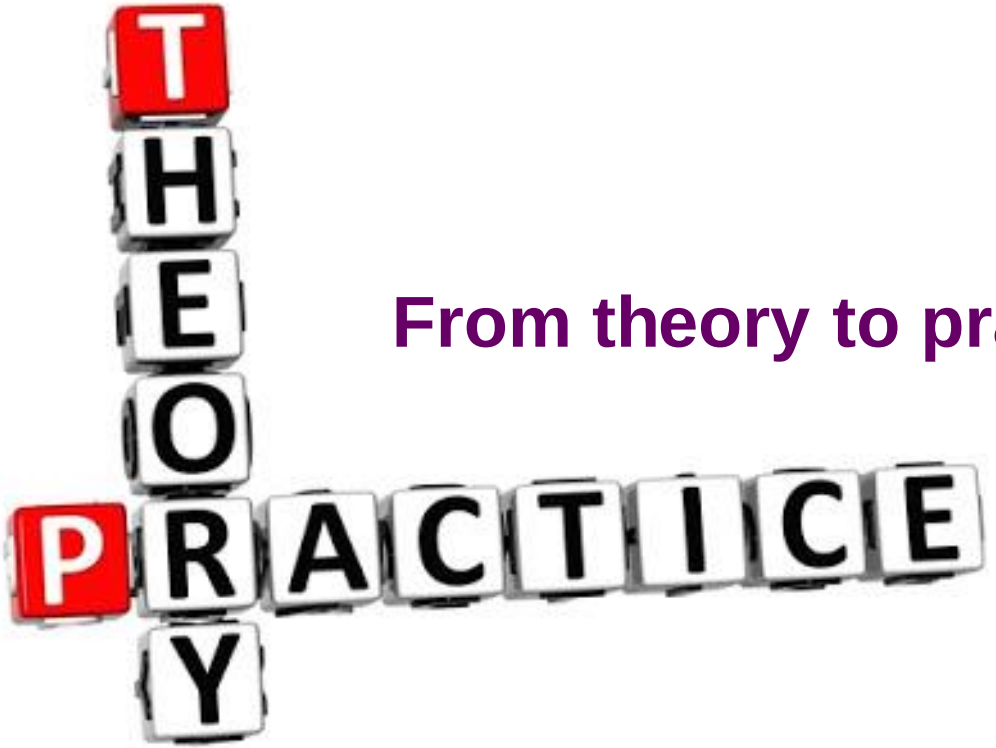

From theory to practice…

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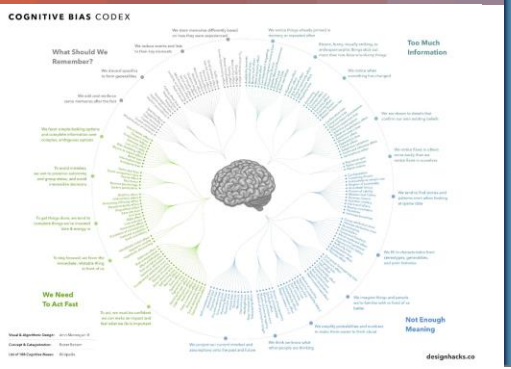
ETHICAL OS



AN ETHICAL TOOLKIT FOR THE DEVELOPMENT OF AI APPLICATIONS

The designed ethical toolkit, in the form of a "full-day" modular workshop, assists in the generation of ideas and supports dialogue for an ethical development of AI applications. Furthermore, its seven modules provide a basis for discussion, trigger solutions, and visually communicate the topic of AI ethics to development teams and clients in a creative and collaborative fashion.

STAGE 1 - ETHICAL ALIGNMENT

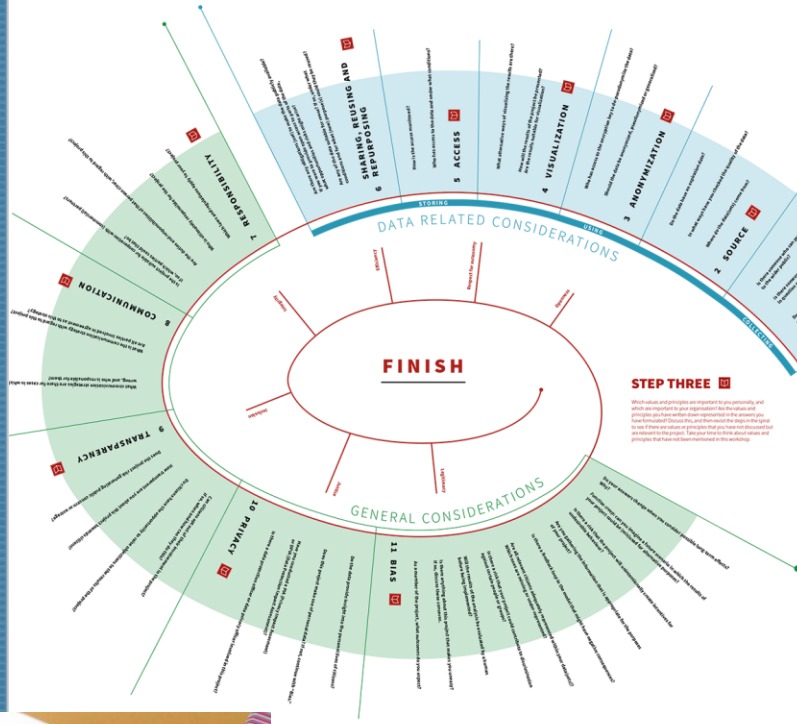
- Ethics & [AI] Mini-workshop
- The Evil in [AI] Game

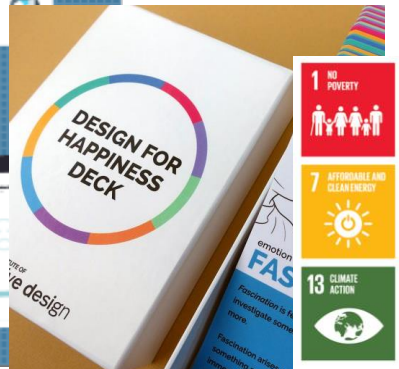
STAGE 2 - PROJECT VISION & VALUES

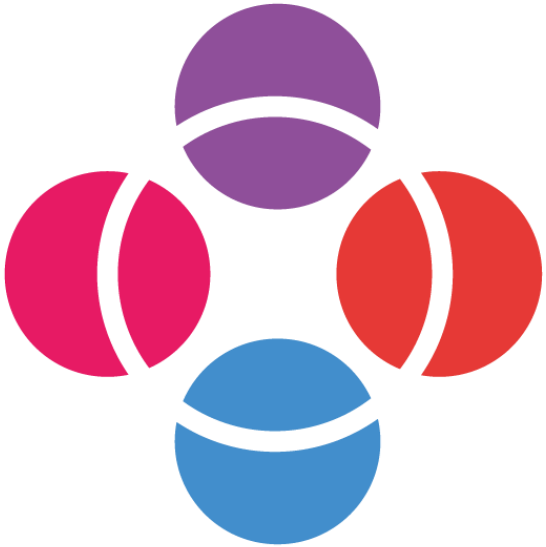
- AI Project General Checklist
- The Responsible Artificial Intelligence Deck
- Ethical Risks Cards
- Ethical Evaluation Axes

STAGE 3 - MORAL CODE OR BEST PRACTICES

- Moral Code of the Project







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Technology Impact Cycle Toolkit

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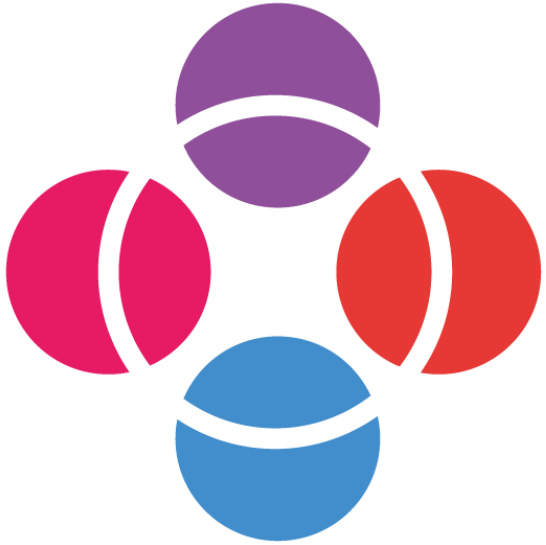

TICT

A FREE TOOLKIT THAT HELPS PEOPLE TO MAKE BETTER DECISIONS ON THE IMPACT OF TECHNOLOGY

WWW.TICT.IO

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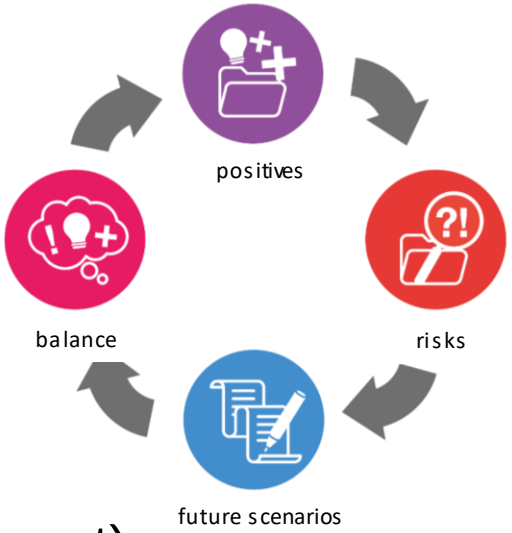
Starting points while developing the tool:



1. Technology = multidisciplinary
2. Ethics as a driving force for innovation
3. Non-judgmental (you can be as good/evil as you want)
4. Part of the (design cycle) process
5. Context is king

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Questions, a lot of questions…

In what way is your technology contributing to a world you want to live in?

How could bad actors use your tech to subvert or attack the truth?

Does your technology register personal data? If yes, what personal data?

How does the technology influence the user(s) ability to make its own decisions?

Did you consider all stakeholders, even the ones the might not be your user or target group, but still might be of interest?

In what way do you consider the fact that data is collected from the users?

Is your technology fair for everyone?

Does your technology have a built-in bias?

Are your algorithms transparent to the people impacted by them?

Is your technology environmentally sustainable?

Did you consider future impact?

Did you make any changes to the design of your technology because of these questions?

What impact is expected from your technology?

Impact on society

Importance: Very important
Quality: Very good

What can bad actors do with your technology?

Hateful and criminal actors

Importance: A lot
Quality: Very good

Are you considering the privacy & personal data of the users of your technology?

Privacy

Importance: Very important
Quality: Can be better

How does the technology affect your human values?

Human values

Importance: Very important
Quality: Good enough

Have you considered all stakeholders?

Stakeholders

Importance: A lot
Quality: Good enough

Is data in your technology properly used?

Data

Importance: A little
Quality: Good enough

Is your technology fair for everyone?

Inclusivity

Importance: A lot
Quality: Good enough

Are you transparent about how your technology works?

Transparency

Importance: A lot
Quality: Good enough

Is your technology environmentally sustainable?

Sustainability

Importance: Not important
Quality: Good enough

Did you consider future impact?

Future

Importance: A little
Quality: Good enough

Fast impression of the impact on a canvas

Quick Scan

Summary of improvements on a canvas

Improvement Scan

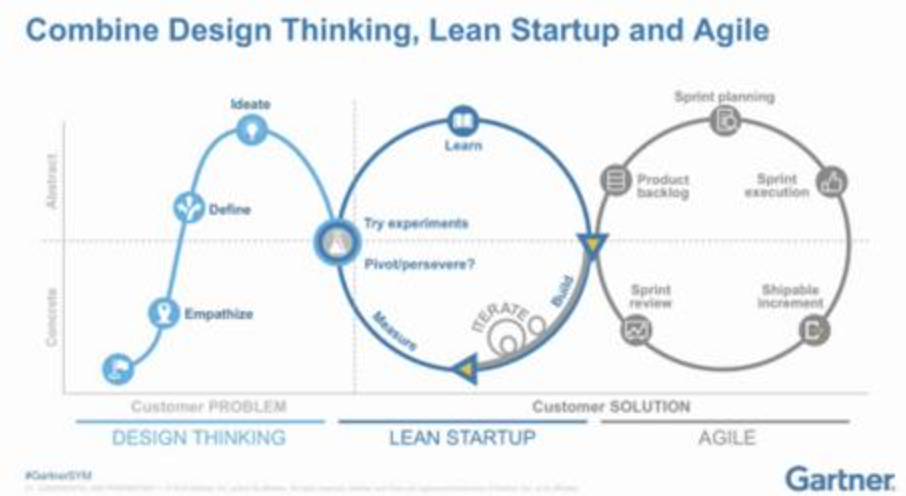
We advise you to read the Quick Start Manual first.

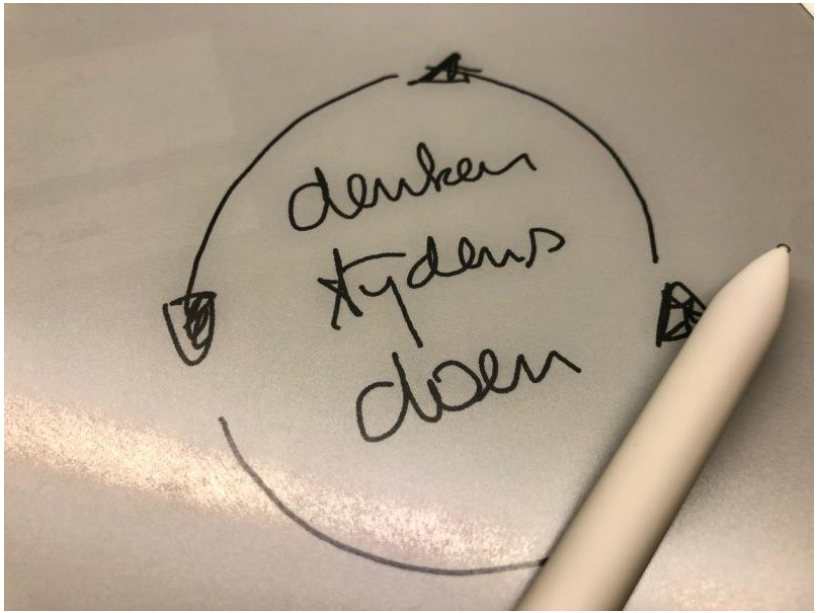
Legend: Not answered | Fully answered | Partial answered | Skipped

Do the best you can until you know better.
Then when you know better, do better.

Maya Angelou

Cycle: in all stages of the process





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Edtech for a Changing World

Creating an experimental EdTech cycle

- Focuses more on Societal level and large questions
- Used for any technology

- Could we narrow the use to just Educational Technologies in Education?

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Public values in EdTech

Humanity

- Meaningful Contact
- Social Cohesion
- Well-Being

Justice

- Equal Opportunity
- Equal Treatment
- Inclusivity

Autonomy

- Freedom Of Choice
- Independence of Education

Questions, a lot of (EdTEch) questions…

How will this new technology affect Social Cohesion?

How will this new technology affect Meaningful Contact?

How does the EdTech impact self-determination of students?

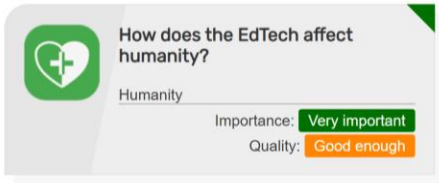
How does the EdTech impact self-determination of teachers?

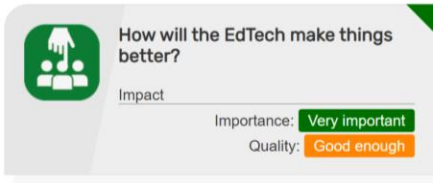
How does this tool impact equal opportunity?

How is your technology going to solve the problem?

What impact is expected from your technology?

Did you make any changes to the design of your technology because of these questions?





Pandora case…

Pandora is a new tool to refresh your curriculum!

Pandora is designed to gamify any learning materials that are imported into it. The technology has two sides, the ‘back-end’, which teachers use for their interface and the ‘front-end’ for students to see.

The back-end allows for teachers to generate games from a variety of topics including math problems, engineering situations or even story problems. Pandora uses AI methods to read text and generate small games such as: Tic-tac-toe, matching puzzles, new stories, or moving animations that can be interacted with, such as physics puzzles. The Pandora application generates not just the game, but also a ‘leader board’, other similar problems, and ‘how-to-play’ instructions. By gamifying any learning material, Pandora enables more engagement and more fun in learning! It saves time by turning boring reading material into an engaging animation in just a click!

-Pandora is a speculative tool, not on the market-

Pandora case…

- Pandora saves teachers time by making things easier and quicker
- Playing games might be more engaging than reading boring articles
- Leader board can boost student's well-being if they win or compete
- More engagement with the learning material might improve learning
- Accessible for everyone!

- Gamification could possibly overrule teacher autonomy
- Increased presence of devices might reduce empathy and trust
- Students might feel they always need to 'win' a game in order to learn
- Students can use tools like ChatGPT for essays and to pass an exam
- Might not be inclusive enough!

QR-codes for ring example and (EdTEch) Pandora case

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METAVERSE

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VR/AR/XR

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DALL-E

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VALL-E

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MidJourney

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Stable Diffusion

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LENSA.AI

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ChatGPT

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LMS

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Hybrid Learning

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Proctoring

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IT IS

NOT

ABOUT

TOOLING

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IT IS
ABOUT
VALUES

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IT IS

ABOUT
WHAT KIND OF

SOCIETY

WE WANT
(TO LIVE IN)

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AS

TECHNOLOGY

AND

SOCIETY

MUTUALLY INFLUENCE
EACH OTHER

"We become what we behold.
We shape our tools and
thereafter our tools shape us"

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WE

NEED

PEOPLE WITH

VISION

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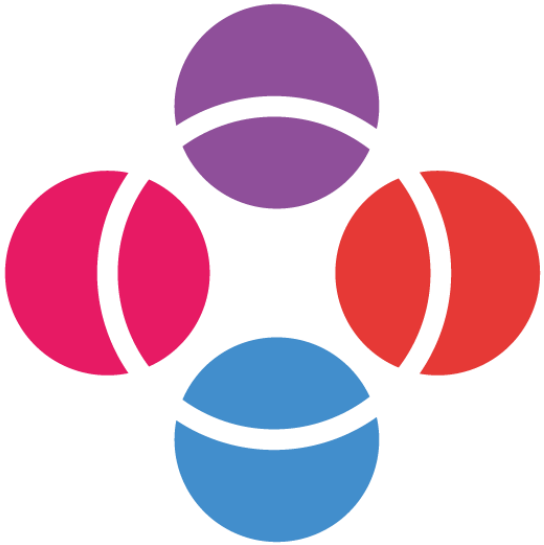
SO WE

NEED

PEOPLE WITH

VISION

on EdTech



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Do the best you can until you know better.
Then when you know better, do better.

Maya Angelou

THANKS FOR LISTENING!

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