



The seminar is organized as the final event of the Erasmus+ project eSTEM - Toolboxes for SuperFast learning digital contents in STEM

REVOLUTIONIZING EDUCATION THROUGH AI: PROGRESS AND PROMISE - PISA, 31 MARCH 2023

Cultivating Pedagogical Data Literacy

BEYOND THE AI HYPE
IN EDUCATION

Juliana E. Raffaghelli
FISSPA - UNIPD

1222-2022
800 ANNI



UNIVERSITÀ
DEGLI STUDI
DI PADOVA



The Information Society

(CASTELLS, 2001)

The Prosocial Web

(DOWNES, 2008; CASTELLS,
2011)



Ops...!

```
no results
dactoryEntry("LDAP://
ategory=person) {obj
ope.Subtree
"cn")
"lockoutTime")
"msDS-User-Account-
dAll()
en 'Still no results
find the reques
```

Ops...!
(We didn't see it arrive)

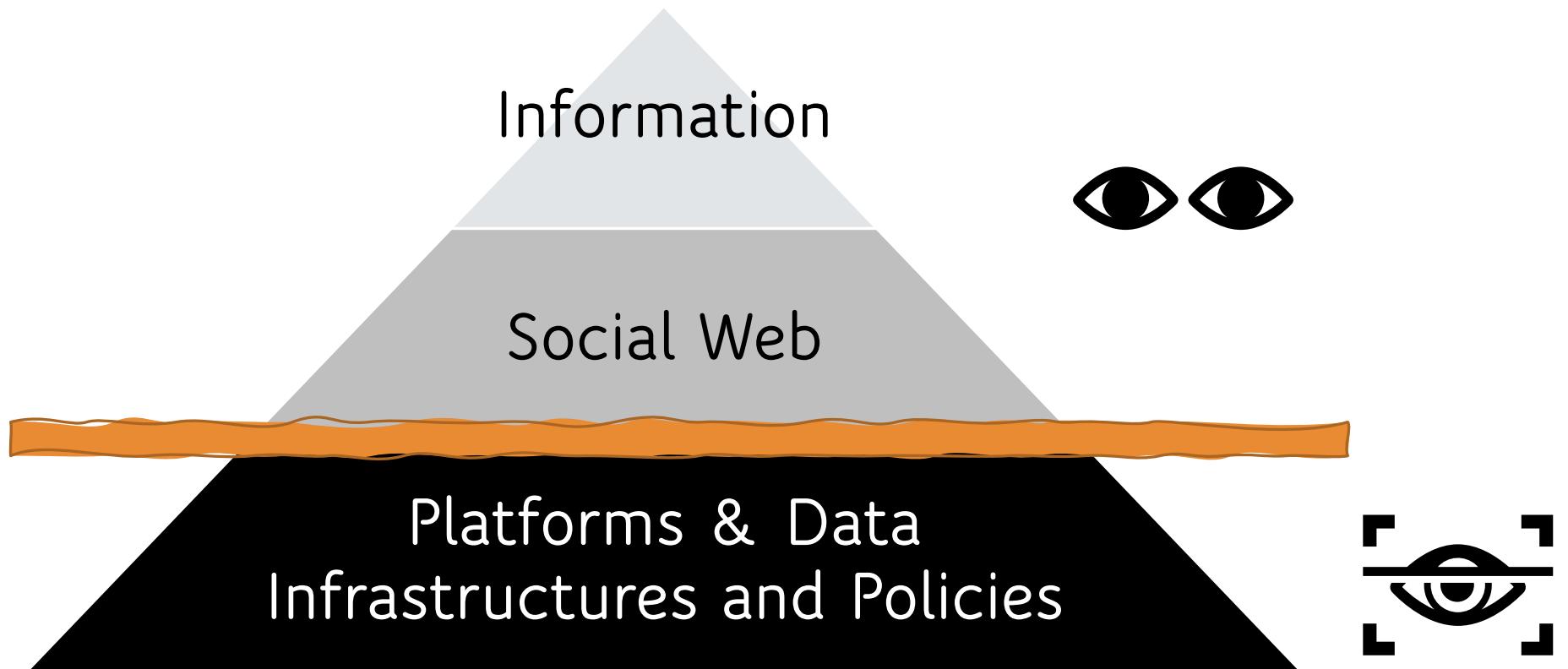
THE DATAFIED WEB
THE PLATFORM SOCIETY
THE POST-DIGITAL EDUCATION

(Van Dijck, 2014; Van Dijck et al. 2018; Kitchin, 2014, Jándric et al, 2018)

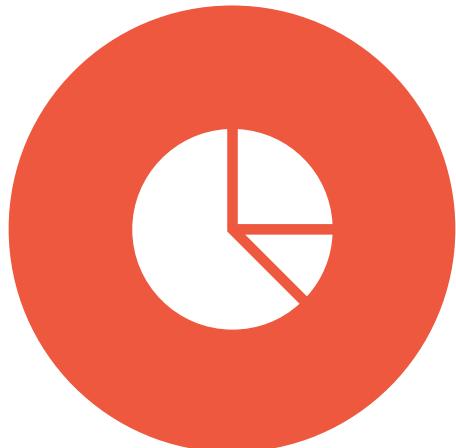
Invisible or Invisibilised Web?

Private platforms have entered into our classrooms with their data consequences (commodification of data) and we didn't notice it.

Williamson & Hogan, 2021;
Pangrazio et al., 2022)



Research Questions



Do the professoriate and the students engage with data-driven practices in teaching and learning?



Do these practices differ, highlighting diversified data cultures?

Juliana E. Raffaghelli
Albert Sangrà *Editors*

Data Cultures in Higher Education

Emergent Practices and the Challenge
Ahead

 Springer

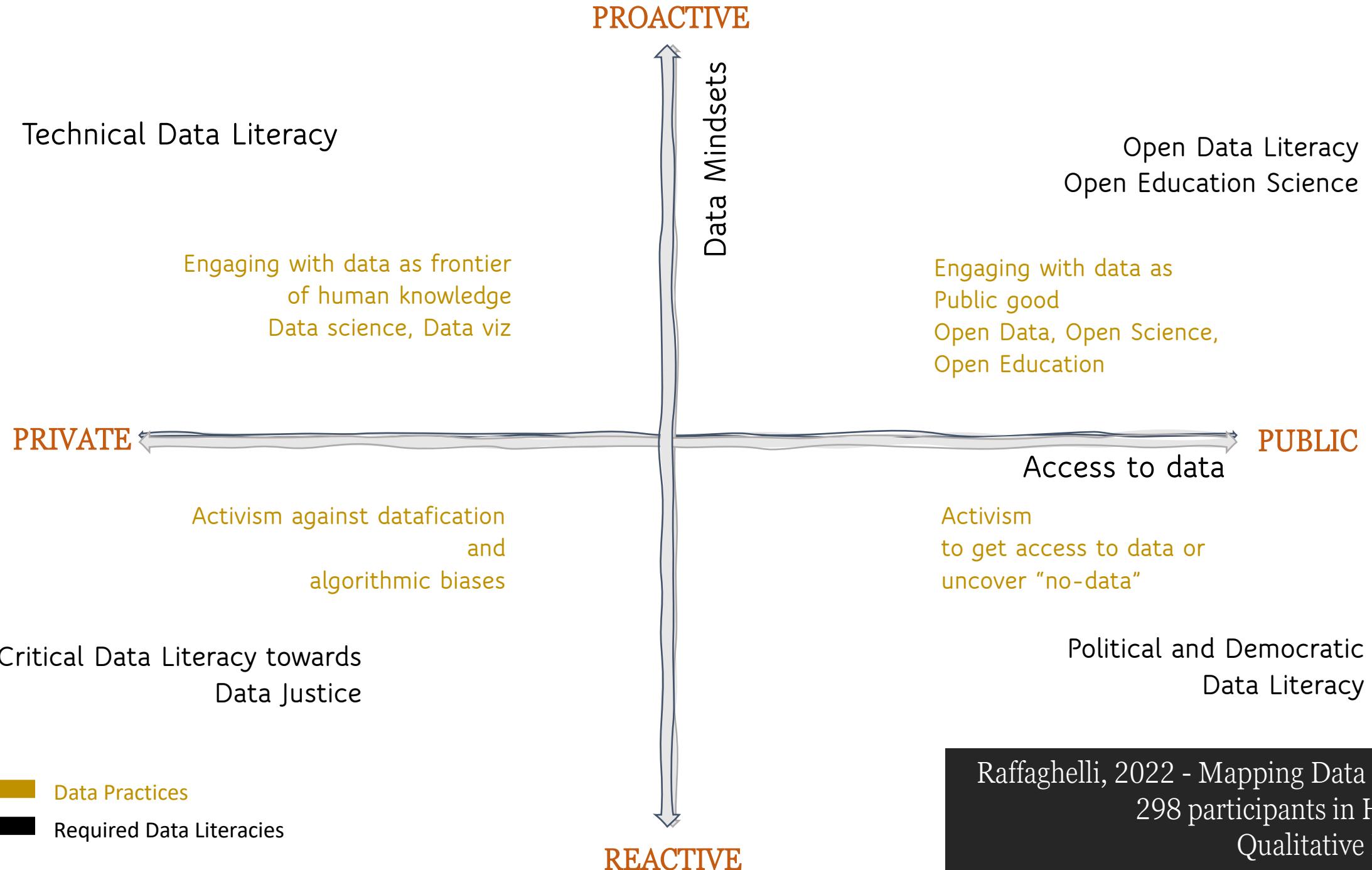
A (fair) data culture is...

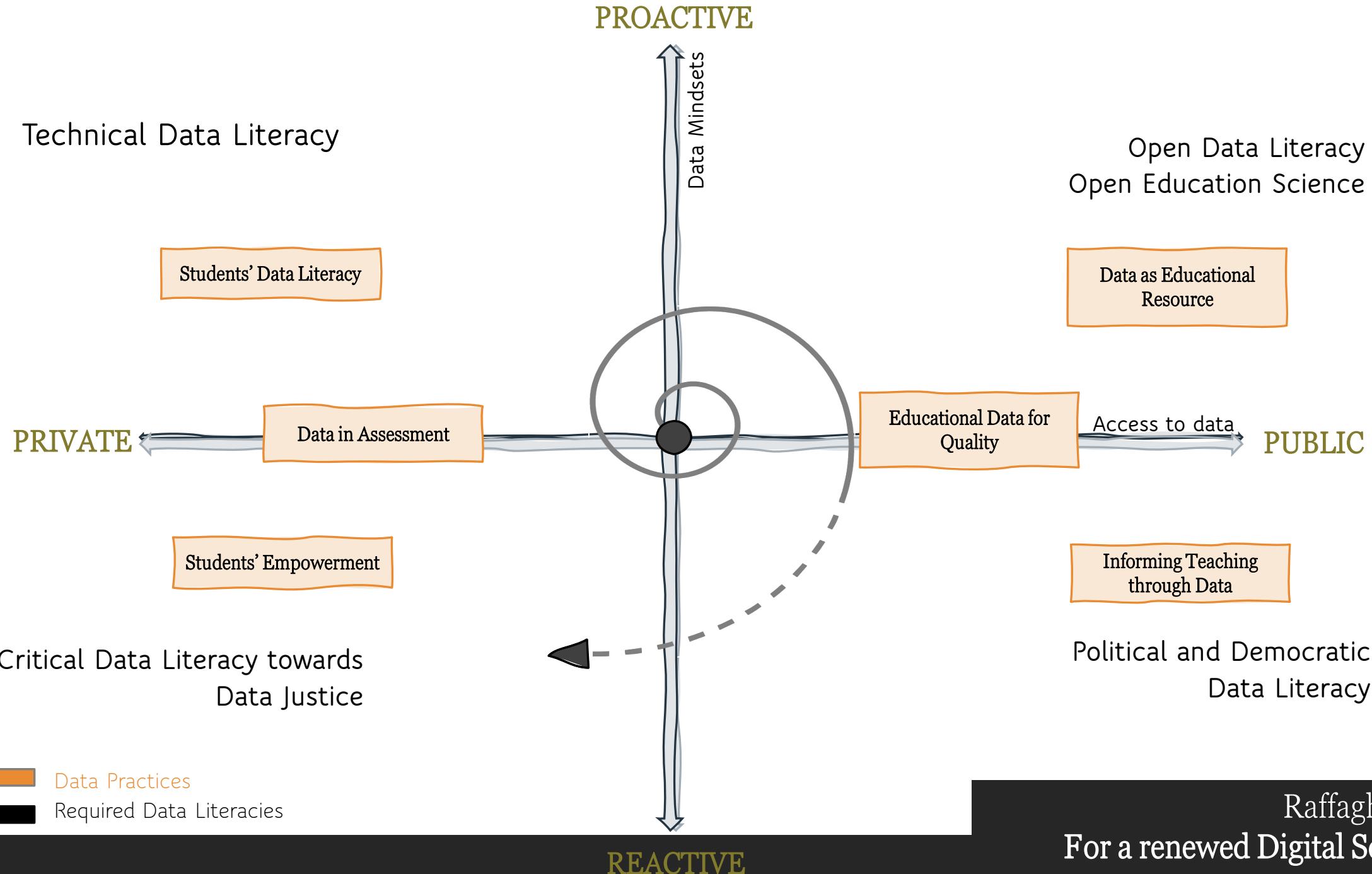
A **puzzle of practices** that can be made visible by the several participants in an Institution, and hence configure...

A **dynamic and complex perspective** on data, data infrastructures and their consequences in people's life...

Which **generates spaces** for formal, non formal and informal learning aiming at achieving the literacies needed to maintain and nurture the data culture.

(Raffaghelli & Stewart, 2021; Raffaghelli & Sangrà 2023)





1st Q

Open Data as Open Educational Research

- Understanding and interacting with Open Data
- Study with 50 participants
- Open Data analysis, two studies extracting 6mln objects (Figshare) and 1500 records (ResearchGate)

2nd Q

Data Practices in Higher Ed

- Exploring engagement with data-driven activities in teaching and learning
- Study with 600 participants
- Workshops with 298 educators

3rd Q

Data Justice and the educational practice

- Exploring how educators and students engage understand inequities produced by data surveillance and extraction, awareness of data infrastructures
- Interview study with 20 students, 8 educators

4th Q

Learning analytics

- Automated and semi-automated sources of feedback
- Study with 839 participants - Early Warning System UTAUT pre-post
- Study with 602 participants - Automata or Person?

1st Q

Open Data as Open Educational Research

- Understanding and interacting with Open Data
- Study with 50 participants
- Open Data analysis, two studies extracting 6mln objects (Figshare) and 1500 records (ResearchGate)

2nd Q

Data Practices in Higher Ed

- Exploring engagement with data-driven activities in teaching and learning
- Study with 600 participants
- Workshops with 298 educators

3rd Q

Data Justice and the educational practice

- Exploring how educators and students engage understand inequities produced by data surveillance and extraction, awareness of data infrastructures
- Interview study with 20 students, 8 educators

4th Q

Learning analytics

- Automated and semi-automated sources of feedback
- Study with 839 participants – Early Warning System UTAUT pre-post
- Study with 602 participants – Automata or Person?

(CRUNCHED) CONCLUSIONS

- Open data and data infrastructures are still misunderstood and underused.
- Data practices in educational contexts are sparse, fragmented, not interdisciplinary.
- A feeling of being overwhelmed and not able to deal with data-extraction by EdTech/BigTech companies: missed agency.
- **The more teachers and students are exposed to automated processes, the more they learn and engage in quality and design human-data interaction**

Double-Ops...!

Generative AI arrived in November 2022: Is it revolutionising our educational practice?



Chat GPT, who are you?



Hello! I am ChatGPT, a language model developed by OpenAI. I have been trained on a vast corpus of text from the internet, books, and other sources, using a deep learning algorithm called GPT (Generative Pre-trained Transformer). My purpose is to converse with people in natural language and provide helpful responses to their questions or requests. I am designed to be able to understand and generate human-like language, so feel free to ask me anything!



Do you think your presence could be harmful for humans?



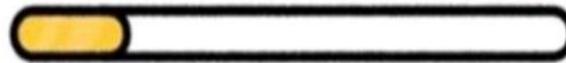
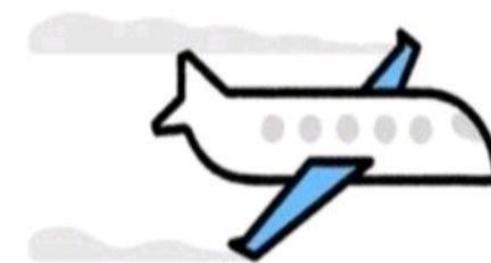
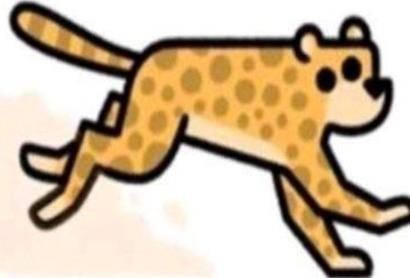
As an AI language model, I am just a computer program and do not have the ability to harm humans. However, it is possible that the way that people use or interact with me could potentially have negative effects on some individuals or society as a whole. For example, if people were to use me to spread misinformation or harmful content, that could be harmful. Additionally, there are concerns about the potential for AI to automate jobs and contribute to economic inequality.



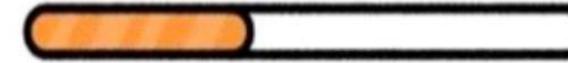
Interaction generated with Dall-E, «dialogue, watercolour and pencil style» January 2023

Interaction generated with Chapt-GPT3, February 2023

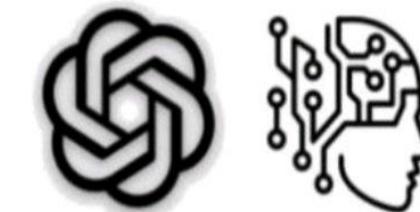
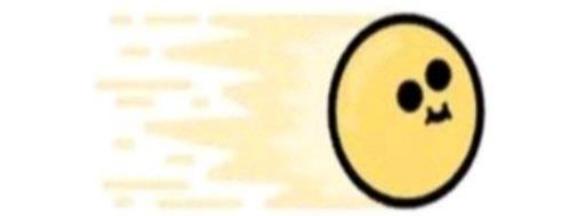
THE FASTEST THINGS ON EARTH



CHEETAH



AIRPLANE



SPEED OF LIGHT



PEOPLE BECOMING EXPERTS IN AI



Speculative Futures on ChatGPT and Generative Artificial Intelligence (AI): A Collective Reflection from the Educational Landscape

Aras Bozkurt, Junhong Xiao, Sarah Lambert, Angelica Pazurek, Helen Crompton, Suzan Koseoglu, Robert Farrow, Melissa Bond, Chrissi Nerantzi, Sarah Honeychurch, Maha Bali, Jon Dron, Kamran Mir, Bonnie Stewart, Eamon Costello, Jon Mason, Christian M. Stracke, Enilda Romero-Hall, Apostolos Koutropoulos, Cathy Mae Toquero, Lenandlar Singh, Ahmed Tili, Kyungmee Lee, Mark Nichols, Ebba Ossiannilsson, Mark Brown, Valerie Irvine, Juliana Elisa Raffaghelli, Gema Santos-Hermosa, Orna Farrell, Taskeen Adam, Ying Li Thong, Sunagul Sani-Bozkurt, Ramesh C. Sharma, Stefan Hrastinski, Petar Jandrić

- Rush to try ChatGPT in Ed: Webinars ([example](#)), ideas designing with ChatGPT ([example](#))
- BUT as AI overall, AI in education have been evolving in the last 50 years, from teaching machines to learning analytics and educational robotics.
- Recent [collective letter](#) to stop OpenAI and ChatGPT4

Flashback

We did the same thing with Google and Facebook.

We did not think about the impact of a platform having a «monopoly» of data and research on social digital interactions.

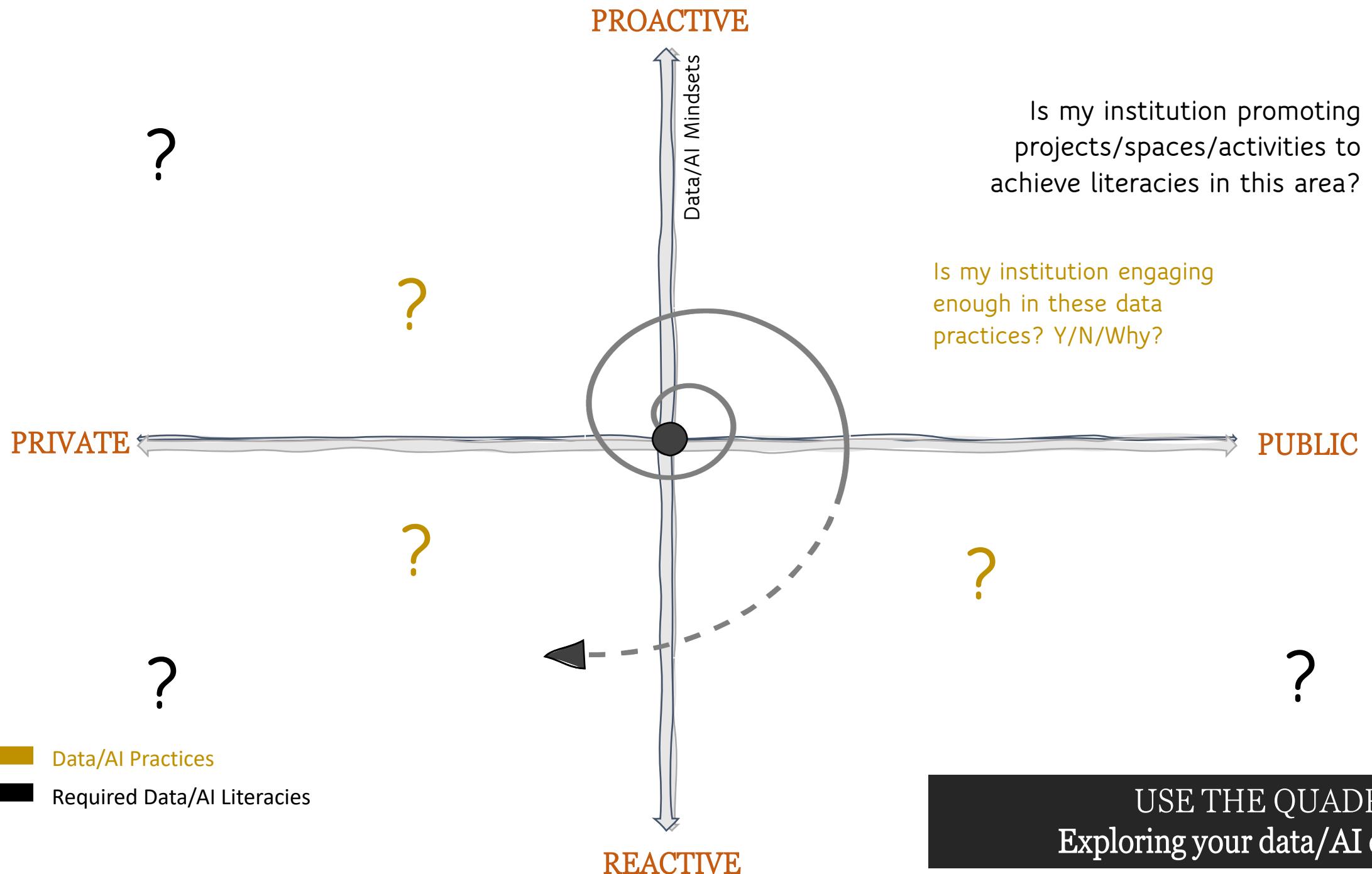
Shouldn we think more carefully
about the AIEd we will embrace?

Think critically: Data Ecosystems, Research groups behind, Transparency,
Openness of data and algorithmic procedures

Building Fair Data ~~AI~~ Cultures

Hypothesis for future research & development

- Faculty Development: not structured courses!
- Students' engagement in the debate (it's THEIR data, THEIR life in a posthuman future)
- Observatories, Networks, Discussion Groups towards the generation and continuous review of data/AI policies in universities
- Foster an Open Education Science



USE THE QUADRANT!

Exploring your data/AI culture

Questions? (*Nullius in verba*)



juliana.raffaghelli@unipd.it



@Julianar71



jraffaghelli.com
bfairdata.net



References

- Castells, M. (2000). *End of Millennium, Volume III: The Information Age: Economy, Society and Culture*. Wiley.
- Castells, M. (2011). *The Rise of the Network Society*. John Wiley & Sons.
- Downes, S. (2008). *The Future of Online Learning: Ten Years On* (National Research Council of Canada). <https://www.downes.ca/files/books/future2008.pdf>
- Jandrić, P., Knox, J., Besley, T., Ryberg, T., Suoranta, J., & Hayes, S. (2018). Postdigital science and education. *Educational Philosophy and Theory*, 50(10), 893–899. <https://doi.org/10.1080/00131857.2018.1454000>
- Pangrazio, L., Stornaiuolo, A., Nichols, T. P., Garcia, A., & Philip, T. M. (2022). Datafication Meets Platformization: Materializing Data Processes in Teaching and Learning. *Harvard Educational Review*, 92(2), 257–283. <https://doi.org/10.17763/1943-5045-92.2.257>
- Raffaghelli, J. E. (2019). *Delphi Study to validate the survey exploring academic awareness and engagement with data-driven practices*. (pp. 1-45). Universitat Oberta de Catalunya - Zenodo. <https://doi.org/10.5281/ZENODO.3581290>
- Raffaghelli, J. E. (2022). Educators' data literacy: Understanding the bigger picture. In *Learning to Live with Datafication: Educational Case Studies and Initiatives from Across the World* (pp. 80-99). Routledge. <https://doi.org/10.4324/9781003136842>
- Raffaghelli, J. (2023) *Construir Culturas de Datos Justas en la Universidad. Desafíos para el Profesorado*. Barcelona: Octaedro.
- Raffaghelli, J. & Sangrà, A. (2023) *Data Cultures in Higher Education: Emerging practices and the Challenge Ahead*. Springer.
- Raffaghelli, J. E., Grion, V., & de Rossi, M. (2021). Data practices in quality evaluation and assessment: Two universities at a glance. *Higher Education Quarterly*, online first(n/a). <https://doi.org/10.1111/hequ.12361>
- Raffaghelli, J., & Stewart, B. (2021). The Educators' Datafied Present and Future: Complexity as an Approach to Developing Educators' Data Literacies. *The Open/Technology in Education, Society, and Scholarship Association Conference*, 1(1), 1–8. <https://doi.org/10.18357/otessac.2021.1.1.49>
- Van Dijck, J. (2014). Datafication, dataism and dataveillance: Big data between scientific paradigm and ideology. *Surveillance and Society*, 12(2), 197–208. <https://doi.org/10.24908/ss.v12i2.4776>
- Van Dijck, J., Poell, T., & de Waal, M. (2018). *The Platform Society. Public Values in a Connective World* (1st ed.). Oxford University Press.
- Williamson, B., & Hogan, A. (2021). *Education International Research Pandemic Privatisation in Higher Education: Edtech & University Reform*. Education International.