Bath Spa University School of Education Research Seminar

22 Oct 2021

Watch the recording

Understanding Data : Praxis and Politics

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#datapraxis

BATH SPA

DATA praxis+ politics

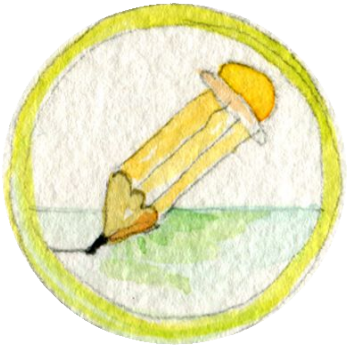
Slides
https://bit.ly/DataPraxis

Recording
https://youtu.be/qiOvzB7sWew

Images: Alexandra Kuhn

Outline

- The DataPraxis project
- What are open educational resources (OER) and open educational practices (OEP)
- Pilot studies
- Future research
- Q & A



The problem

The problem is **datafication** and how without knowledge about it we are more and more disempowered.

- What is the role of educators and HEIs in this?
- How can open and critical pedagogy approaches contribute solutions?

Rationale

Our work is grounded in the idea of **using data critically as a means to develop citizenship and employability skills**, and in the concept of **ethics as a method**.

We believe that in a datafied society these are core skills needed for participatory citizenship. In so doing we foster an **open and critical pedagogical approach** that embeds tools **to understand and challenge our interactions with data-driven systems and with data more generally.**

(Johnson, 2014; Atenas et al. 2015; Baack, 2015; Reggi and Dawes, 2016; Manca et al., 2017; Van Es and Schaffer, 2017; Markham, 2018; Atenas and Havemann, 2019; Atenas et al., 2020; McKiernan and Medina Gómez, 2021; Bhargava et al., 2021).

Background

In **2015,** we published a piece of research in which we argued that,

The educational value of **Open Data** is as a key component in research- and problem based learning, where its deployment **can enhance information and digital literacies and support the development of critical, analytical, and collaborative citizenship skills.**

Therefore, the use of **Open Data as OER** can enable mechanisms for collaboration, discussion and engagement with local communities towards the development of global citizens.

Atenas & Havemann, 2015 - Open Data as Open Educational Resources: Towards transversal skills and global citizenship

Background

In **2019,** we discussed the state of Open Data at Global level in a book,

Open data can be **a key component in the development of the literacies** needed **for a datafied society**.

Open data also **enhances and promotes civic participation**

But it cannot be considered as the panacea for all educational problems. (Atenas, Havemann, 2019 - Data and Education)

Oriented towards educational technology, we wrote that same year, how we are **trapped in political rhetoric and capitalistic discourses** that come from Silicon Valley **offering universal solutions to education**, making indiscriminate quantification look normal and unproblematic. (Kuhn, Whose interest is educational technology serving?)

Background

In **2019,** we discussed the state of Open Data at Global level in a book.

Although **open data** can provide evidence about problems that need to be addressed at the policy level, it can also be **a key component in the development of the literacies** needed **in a datafied society**, as well as in **enhancing and promoting civic participation** and understanding of the media and the sciences. However, it cannot be considered as the panacea for all educational problems. (Atenas, Havemann, 2019 - Data and Education)

Oriented towards educational technology in current times, Kuhn wrote that same year about how we are trapped in political rhetoric and capitalistic discourses that come from Silicon Valley offering universal solutions to education, making quantification seem normal and unproblematic. (Whose interest is educational technology serving?)

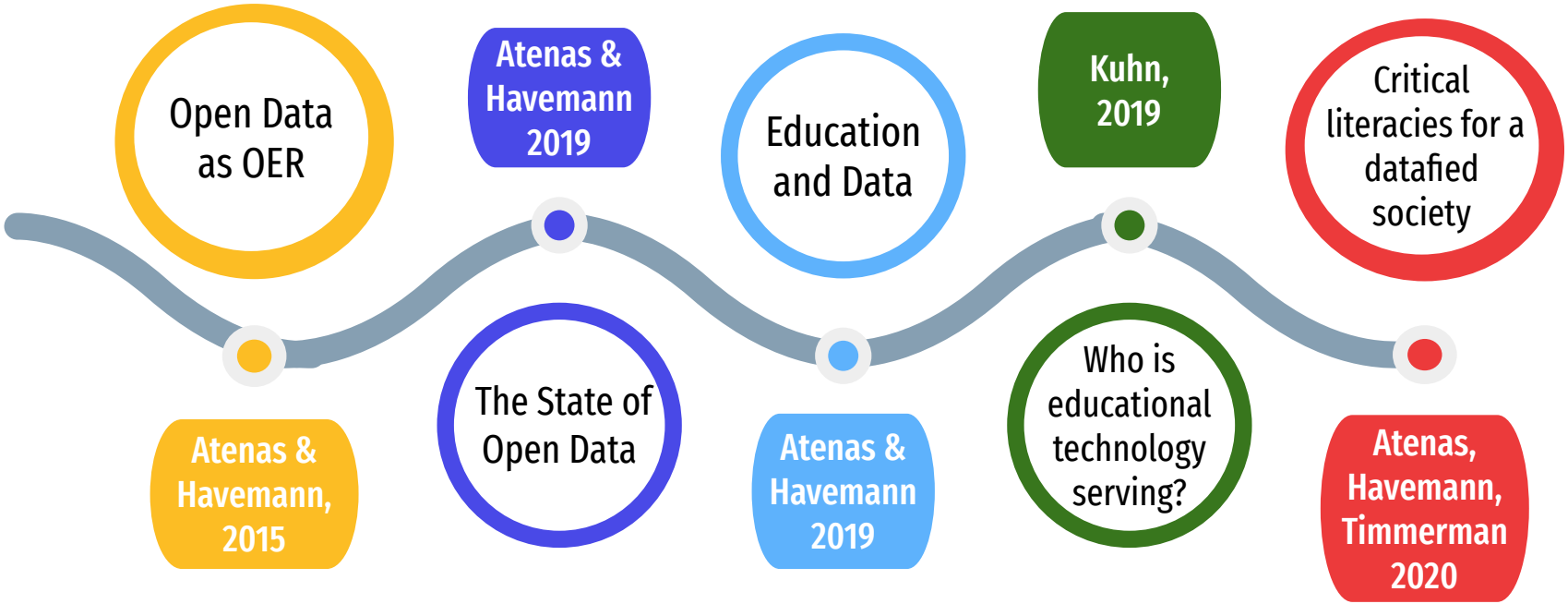
Background

Then in **2020**, we showcased **the importance of critical data literacy**, as we discussed:

The case of students in HE illustrates a wider point: **the acquisition of critical data literacies has a strong relevance for social justice;** without them, opportunities to challenge dominant narratives will be curtailed.

A **data literacy divide** will likely widen the gap between privileged and unprivileged groups. While certain groups will be well positioned to participate economically and socially becoming decision-makers, those who cannot engage with data may remain or become further marginalised, ultimately only playing the role of data points, to be studied 'from above'.

Atenas, Havemann & Timmermann, 2020 - Critical literacies for a datafied society: academic development and curriculum design in higher education


Open Data as OER
Atenas & Havemann, 2015
Atenas & Havemann 2019
The State of Open Data
Education and Data
Atenas & Havemann 2019
Kuhn, 2019
Who is educational technology serving?
Critical literacies for a datafied society
Atenas, Havemann, Timmerman 2020

The problem

> **Data** is never neutral and it is ultimately a **political instrument**. Data and the algorithms used to analyse it, can prompt **stigmatisation, segregation, and discrimination.**

Atenas & Havemann, 2019

Data is not raw but cooked

> The cooking of data does not take place in a vacuum, but within a **context.** Data driven endeavours are …**socio-technical systems**. They are the result of **human values**, **desires**, and **social relations** as they are scientific principles and technologies
>
> (Kitchin, 2020)

Recognising the **social dimension** of **data** and understanding data driven system as being **socio-technical in nature** provides us a **conceptual position** to **challenge 'unproblematic' ideas** such as the **data revolution**, that seems progressive but is more problematic and nuanced than that!

How did we address the problem

An open critical pedagogy

To stay only at the more practical/analytical level of literacy would imply that we are only able, as Freire (1968) argued, to **'read the word'** but we would fall short to **'read the *world*',** that is, to be **active subjects capable to change history instead of being passive objects of history**.

In the world of data and algorithms, it is particularly problematic **to be objects of history** because as Freire upholds, **objects are known and acted upon** whereas **subjects are those who know and act.**

Knowing and acting ethically is one of the aims of our call to a more critical approach to data literacy in HE

What did we do

We devised an **international collaboration** to create and and implement an OER to foster critical data literacy: **DATA praxis+politics**

The OER provides educators with content, resources, and analytical tools, in English and Spanish, to think about real-life situations that connect them with the field's most recent issues and research.

All the content can be translated automatically into other languages.

UNIVERSIDAD DE LA REPÚBLICA URUGUAY

CREA Núcleo Interdisciplinario Recursos Educativos Abiertos

TANGAZA UNIVERSITY COLLEGE
TANGAZA FUMBO LA IMANI

UOC Universitat Oberta de Catalunya

UNIVERSITY OF SURREY

DATA praxis+ politics

A brief overview of OER and OEP and why it is important

Teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an **open license** that **permits no-cost access, use, adaptation and redistribution** by others with no or limited restrictions. (UNESCO)

one can note that OER definitions frequently include lists of examples of the types of things that are considered a resource. Here the main differences hinge upon the question of how inclusive the definition wishes to be; so educator-produced learning materials, such as slidesets, videos or documents are always ‘in’, but granular-level units of content, such as photographs, may not be.

Datasets are rarely listed in definitions, but can certainly be viewed as a type of educational resource, while software and systems, which might reasonably be understood as things of a different kind from resources, are also sometimes present.

(Havemann, 2016, Open Educational Resources)

"Use/reuse/creation of **OER** and collaborative pedagogical practices that employ **social and participatory technologies** for interaction, knowledge creation and **empowerment of learners.**"

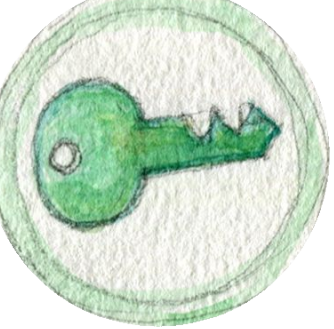
(Cronin, 2017. Openness and Praxis)

DATA praxis+ politics

Open education is not limited to just open educational resources. It also draws upon **open technologies that facilitate collaborative, flexible learning** and the **open sharing of teaching practices** that empower educators to benefit from the best ideas of their colleagues."

~ Cape Town Open Education Declaration, 2007

Providing open educational tools to the HE sector supports a shift to more critical reflection of proprietary software and data, and privacy protection



When access to education is a daily struggle

> “Because of a myriad of **barriers**, such as the **prohibitive cost of learning resources**, or the legal maze of convoluted **copyright rules and exceptions**, many learners are denied their fundamental human right to education.

On many levels, the current health emergency and the disruptions it creates around learning opportunities is a wake-up moment. **Librarians** are calling for a **generous interpretation of fair use, educators and institutions** are generously **sharing OER**, and **commercial publishers** are making some of their **educational materials available for free** *for a limited time.* (Green and Vezina, 2020)

UNESCO
Recommendation on OER

The recommendation will support the **development and sharing** of openly licensed learning and **teaching materials**, benefiting students, teachers and researchers worldwide.

It will support **the creation, use, and adaptation of** inclusive and quality **OER**, and **facilitate international cooperation** in this field.

Its objectives also include the development of **supportive policies** and the creation of **sustainability models for OER**.

UNESCO Recommendation on OER

5 Areas of action

- ➔ Build **capacity** of stakeholders to access, use, adapt, create, share OER
- ➔ Develop supportive **policy**
- ➔ Support/enable **inclusive & equitable quality** OER
- ➔ Nurture creation of **sustainability** models for OER
- ➔ Facilitate **international collaboration**

The four pilot studies

Uruguay: Structure of the course

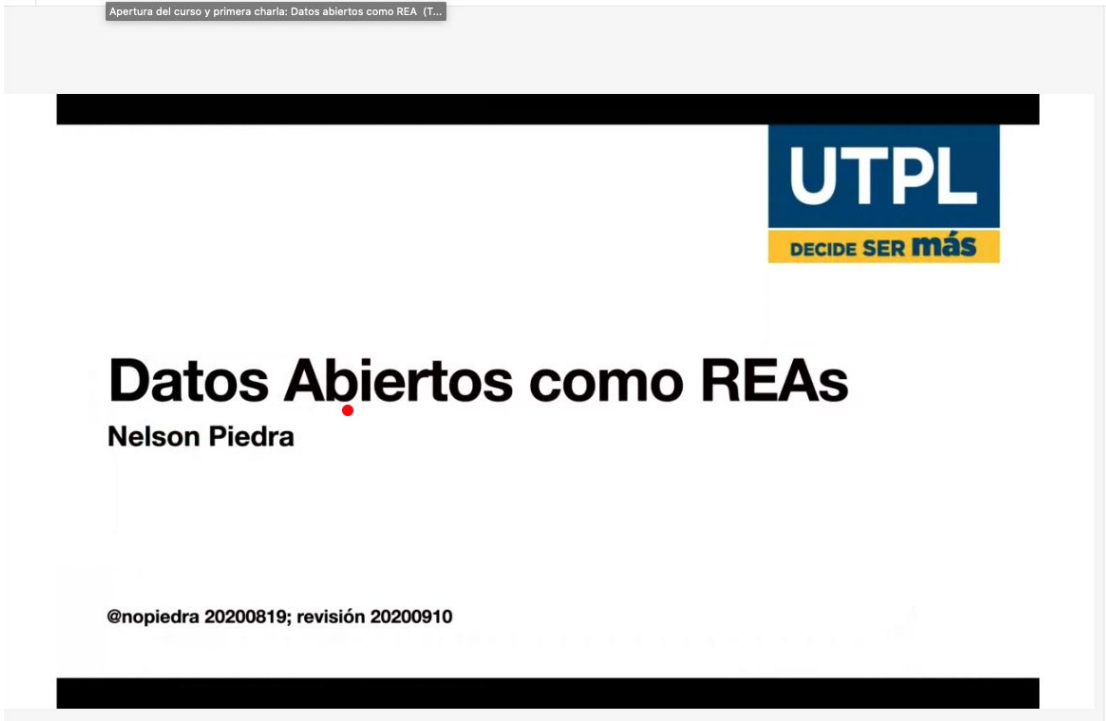
- The course was designed as a formal CPD for educators
- A self-paced levelling course for participants to have a baseline understanding of key concepts as a prerequisite to participate in the core- course
- The levelling course was based on the content produced for an introductory course on the use of OpenData as OER
- The core course ran for a month, two intensive weeks with talks and workshops, 2 weeks to think and work in the final group assignment
- Participants published their assignment on the site so that it can be used by other learners as a mean to co-construct knowledge with future users of the content.

Highlights

- The **interdisciplinary nature of the group** was a highlight for the participants, problems were looked from multiple perspectives
- The **culture of open** in Latin America and in particular Uruguay. The background work that the University of La República and Núcleo REA has done with ILDA and other Open Data actors has set a fertile soil where participants flourished
- The CPD met high quality standards and was **internally accredited** granting credits and a **certificate**
- The resources were **translated and contextualised** to the Latin American context, and some **content was tailored to** meet **the needs** of this specific groups

Talks and workshops with experts in the field

Apertura del curso y primera charla: Datos abiertos como REA (T...



What the participants said

- For me **the world of open data was totally unknown,** so that already speaks for itself of the value that this course had for me. A few things that I knew about, like Creative Commons licenses, were part of very frayed things, so systematizing them also helped a lot.
- The many facets and the almost infinite applications that were shown to us allowed the theme to be presented as a **subject of indisputable importance** and potential, of which today it is not possible not to know.
- The **methodology** applied by the **excellent teachers,** facilitated the understanding of the topics that was reinforced with the **talks by experts** and the videos from speakers from other countries to illustrate the situations presented.
- The talks by experts, the **flexible and dynamic modality of the coordinators' orientations,** in a clear and direct language, favored the understanding of the instructions to carry out group work. This **experience** of working with participants from different countries and cultures was **very enriching**.

Challenges + future plans

- This course was conceived as a summer school, but due to the **pandemic,** it was redesigned as an accredited CPD scheme delivered online.
- **Time** is a big constraint for educators. There was a wealth of material but not enough time for participants to deeply engage with the resources and the discussions, but opportunities to access and take advantage were available.

We plan to **deliver another online version**, as people from outside Uruguay, with caring commitments and difficulties to travel found in this course a unique opportunity to meet with others connecting with peers across the continent.

Kenya: Structure of the course

- Based on two workshops during a month.
  - The first one introduced them to the **content and tools** they could use. We left them **3 weeks to design** and use the resources and **reflect back**
- Mode of delivery: **Coaching approach**
- We took a **collaborative approach to design** the resources taking the context into account
  - Podcast with David Sellasie Opoku allowed us to have a better insight into the African context
  - **Debates** with the lecturer and scholars who have worked in this area of food security and ethics
  - The **design** of workshops **spoke to their social problems**

Highlights

- The collaboration and participation of the lecturers in the design of the material
- Contextualisation of the content
- Booklet for students and teachers
- No culture of data but culture of open, thus they adapted the content quite easily

Highlights

Kenya

38 cases have been reported so far

Legend

Environmental Conflicts in Kenya

Waste-to-Energy Project in Kibera, Kenya

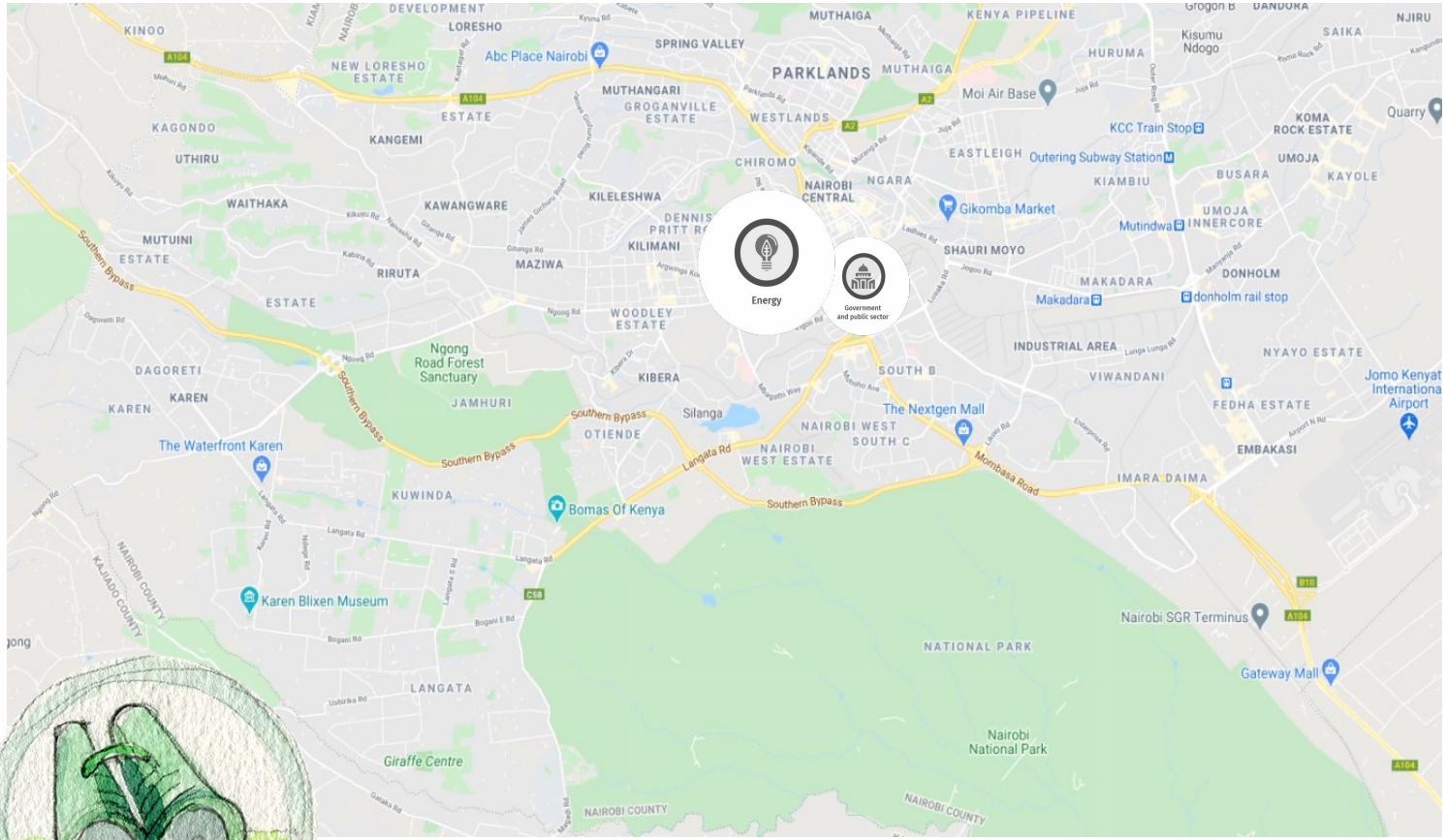
Infamous for its overcrowded and hazardous conditions, Dandora landfill has been selected as the site for constructing a new incinerator, which threatens to further marginalize wastepickers there.

Lead acid batteries recycling factory in Mombasa, Kenya

Lead-acid batteries recycling factory impacted people's and environmental's health in Mombasa, Kenya. For forcing its closure, Phyllis Omido won the Goldman Environmental Prize in 2015.

Waste pickers of Nakuru face harassment, exclusion and toxic conditions, Kenya

In Nakuru, thousands of people pick waste under often precarious conditions - even during the COVID-19 outbreak. Although they informally recover and recycle large amounts of waste, they remain socially excluded and institutionally discriminated against.



Indicate:

- The quality of the data
- The availability of data
- The representation of local populations in producing data
- How much the data is accessed or used (clicks, downloads, embeddings, social media sharing)

DATA EXPEDITION

What are some of the participants saying

A class of 25 students were taken through the class on “the making of a great business plan”. The **materials came in handy** especially on the two critical topics in their business plans, that is Industry Analysis and Market Research. **Students are now confident in writing their final business plans** based on the analysis gained from Open Data sources and complementary materials they used from DataPraxis

The University celebrated Open Week giving these courses on open data for climate change

Challenges + future plans

- Look for funding for a project that lasts more than a year to explore the pedagogical power of decolonising the curriculum.
- Find new cooperations between college/university students and smallholder farmers to explore how open data can enhance their livelihoods.

Learning new things and ways of teaching takes time and effort, lecturers need to have time and resources allocated for this so that they can make it work.

Critical data literacy is key to understand new dimensions of data and the implications these dimensions have in farmers and people's life, more generally. This has been just the beginning!

England: Structure of the course

- This pilot was structured as **co-teaching**
- **Designed for students** as part of their module Digital Economy Project.
- **Together we decided** how to embedded the materials in the module so they could explore the ethical aspect of open data in their projects
- **Three sessions of co-teaching** where delivered in an 8 week intensive module at the postgraduate level
- Students had to do an **ethical analysis about the use of open data** as part of their business plan proposal

Highlights

- **Co-teaching** is a very effective way to work with teachers.
  - There is not that much time commitment for the educators which is a critical element for the success.
  - It has a direct impact on students.
- Embedding the content in their assessment made it motivating for students
- Having an expert in the field
- Not only the OER but also the ethical approach to data is of value for students

What the lecturer and participants said

Lecturer:

The experience was powerful for students as they were **unaware of the social dimension of open data** as well as **the ethical implication of its use**.
The resources developed were of excellent quality offering new materials that I can use in my courses. It also opens up a new dimension for the assessment of students.

Student:

I haven't thought about these ethical aspects of data before, it has been eye opening for my team. We are not sure how we can integrate the ethical dimension in our health app but it is worthwhile giving it a try.

It will be valuable to bring these ideas back home.

University Oberta de Catalunya

- This course was structured as **non-formal learning**, inspired in an **experimental approach** to professional learning. The idea was to **present the content** through workshops **to elicit questions**, **reflect** and **come with** a **pedagogical design** draft.
- It run for a month.
- One workshop for each theme: **learning analytics, data justice and open data for social innovation**.
- Three weeks to work on their pedagogical design and a last session to present them and reflect upon the learning

Highlights

- Working with educators in **pedagogical designs** on this new topic was **generative**
- We interviewed the **invited speakers** and preparing for their talks provided them with **new perspectives to think about OER** but also the **relevance of the critical dimension of data** in current times
- The possibility to bringing the OER to other HE institutions in Latin America
- Participants felt the content was eye opening; many new thing were discovered, they said.

Challenges + future plans

- Participation is difficult when it is not an accredited PD
- More time was required to think more in depth about pedagogical designs
- The design of a longer and formal program about critical data literacies at postgraduate level
- Liasing with other universities that want to use this resource

What are some of the participants saying

- My training in math and statistics has led me to focus on the technical aspects of data, the models, and the analysis. The workshops have **endowed me with a critical perspective**. **I wish to work with open data** (both from government and research). I'm doing my PhD around open data usage, and I clearly understand now that **I cannot only focus on the quality or technical aspects of data** but also the **why these have been built** and the way they speak for the participants. This is crucial to get a fruitful citizen participation.
- I have never seen an educational material with such a high **level of aesthetic**, it has made it for me incredibly **appealing and it motivates me** to explore further.
- Having the materials **open is an advantage** as we don't need to be experts in the field, but studying this material will allows us to use them in our teaching

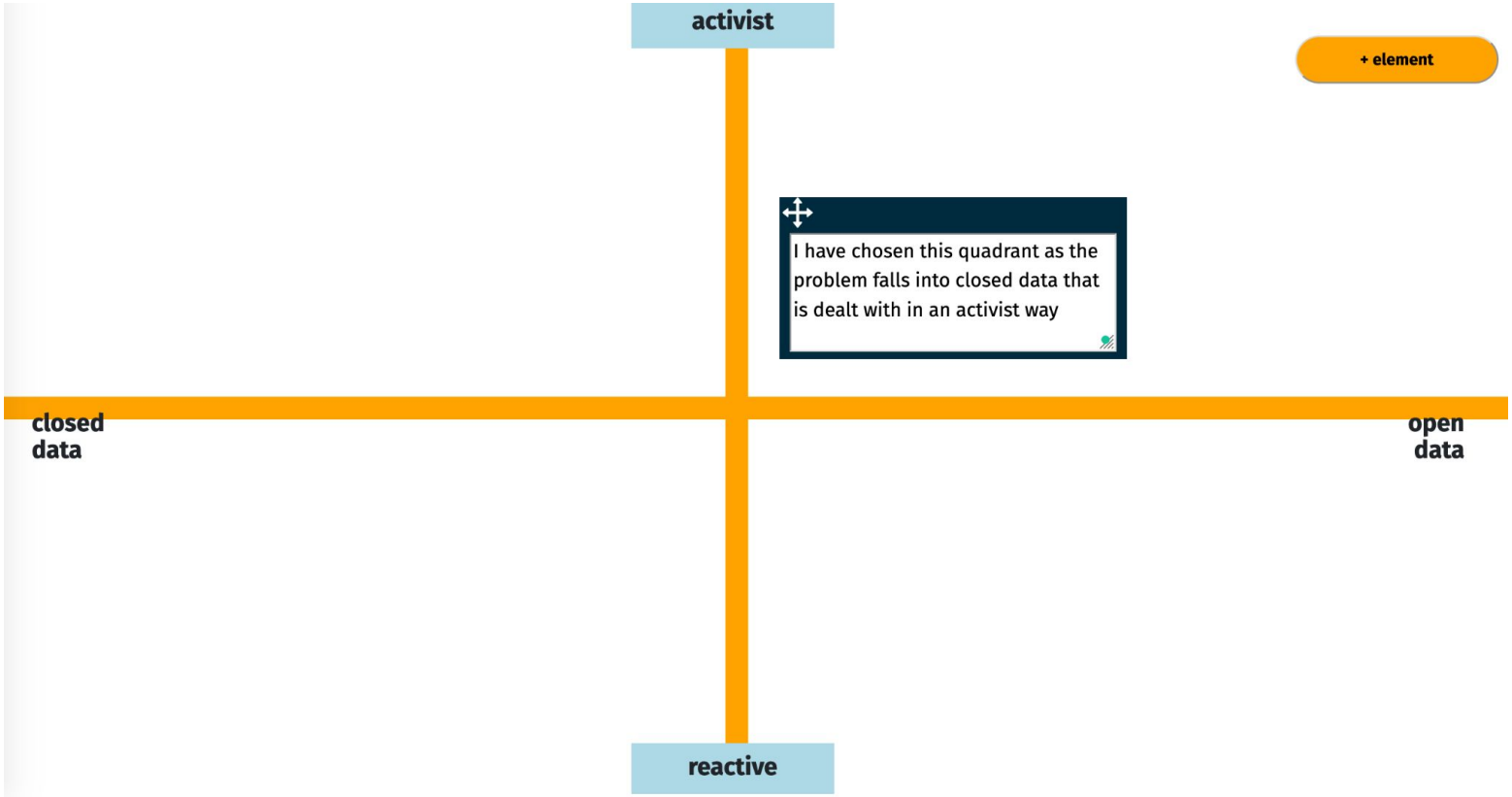
Why does this project matter

- Creating OERs is not as effective as working closely with the partners to develop the programme of study and the resources
- Giving the tools to teachers to train their students is important. Academic development matters!
- Interdisciplinarity afforded by international collaborations provides a richness to the content but also to the learning experience
- It was more than the OER as such. The content of the course is timely and transformative for educators. They left with high level of awareness regarding the socio-technical nature of datafication phenomenon

Outcomes

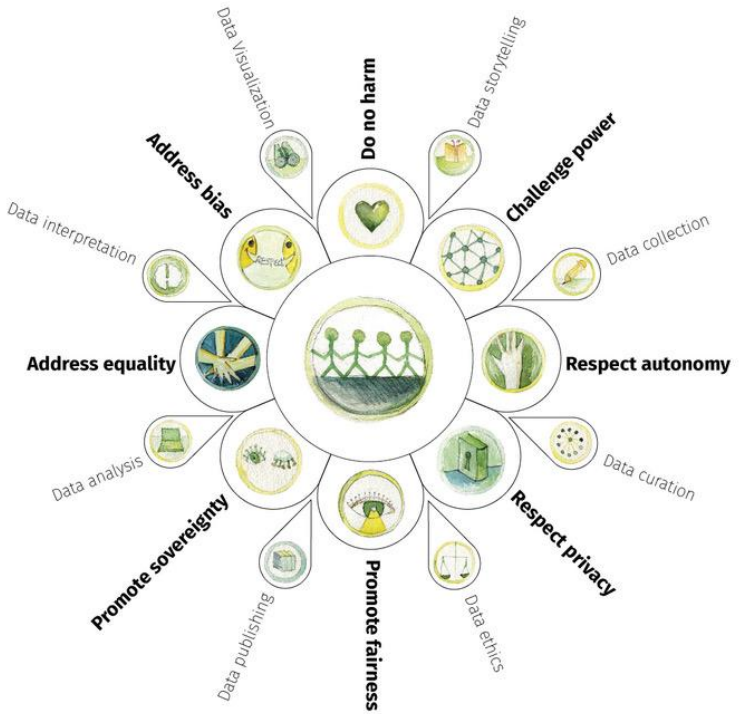
- The site as a learning space
- The tools
- The workshops
- The learning design materials
- The podcasts and talks
- The data ethical framework

Thinking tool



Ethics as method

datapraxis.net



Values: Ethics of care · Data feminism · Critical pedagogy

Our guiding principles

Data Ethics Canvas

2021-05

Data Sources

Name/describe your project's key data sources, whether you're collecting data yourself or accessing via third parties.

Is any personal data involved, or data that is otherwise sensitive?

Rights around data sources

Where did you get the data from? Is it produced by an organisation or collected directly from individuals?

Was the data collected for this project or for another purpose? Do you have permission to use this data, or another basis on which you're allowed to use it? What ongoing rights will the data source have?

Limitations in data sources

Are there limitations that could influence your project's outcomes?

Consider:

> bias in data collection, inclusion/exclusion, analysis, algorithms

> gaps or omissions in data

> provenance and data quality

> other issues affecting decisions, such as team composition

Ethical and legislative context

What existing ethical codes apply to your sector or project? What legislation, policies, or other regulation shape how you use data? What requirements do they introduce?

Consider: the rule of law; human rights; data protection; IP and database rights; anti-discrimination laws; and data sharing, policies, regulation and ethics codes/frameworks specific to sectors (eg health, employment, taxation).

Ongoing implementation

Are you routinely building in thoughts, ideas and considerations of people affected by your project? How?

What information or training might be needed to help people understand data issues?

Are systems, processes and resources available for responding to data issues that arise in the long-term?

Your reasons for using data

What is your primary purpose for collecting and using data in this project?

What are your main use cases? What is your business model?

Are you making things better for society? How and for whom?

Are you replacing another product or service as a result of this project?

Positive effects on people

Which individuals, groups, demographics or organisations will be positively affected by this project? How?

How are you measuring and communicating positive impact? How could you increase it?

Negative effects on people

Who could be negatively affected by this project?

Could the way that data is collected, used or shared cause harm or expose individuals to risk of being re-identified?

Could it be used to target,profile or prejudice people, or unfairly restrict access (eg exclusive arrangements)?

How are limitations and risks communicated to people?

Minimising negative impact

What steps can you take to minimise harm?

How could you reduce any limitations in your data sources? How are you keeping personal and other sensitive information secure?

How are you measuring, reporting and acting on potential negative impacts of your project?

What benefits will these actions bring to your project?

Reviews and iterations

How will ongoing data ethics issues be measured, monitored, discussed and actioned?

How often will your responses to this canvas be reviewed or updated? When?

Engaging with people

How can people engage with you about the project?

How can people correct information, appeal or request changes to the product/service? To what extent?

Are appeal mechanisms reasonable and well understood?

Communicating your purpose

Do people understand your purpose – especially people whom the data is about or who are impacted by its use?

How have you been communicating your purpose? Has this communication been clear?

How are you ensuring more vulnerable individuals or groups understand?

Openness and transparency

How open can you be about this project? Could you publish your methodology, metadata, datasets, code or impact measurements?

Can you ask peers for feedback on the project? How will you communicate it internally?

Will you publish your actions and answers to this canvas openly?

Sharing data with others

Are you going to be sharing data with other organisations? If so, who?

Are you planning to publish any of the data? Under what conditions?

Your actions

What action will you take before moving forward with this project?

Will you openly publish your actions and answers to this canvas?

DATA FEMINISM

EXAMINE POWER

Data feminism begins by analyzing how power operates in the world.

CHALLENGE POWER

Data feminism commits to challenging unequal power structures and working toward justice.

ELEVATE EMOTION AND EMBODIMENT

Data feminism teaches us to value multiple forms of knowledge, including the knowledge that comes from people as living, feeling bodies in the world.

RETHINK BINARIES AND HIERARCHIES

Data feminism requires us to challenge the gender binary, along with other systems of counting and classification that perpetuate oppression.

EMBRACE PLURALISM

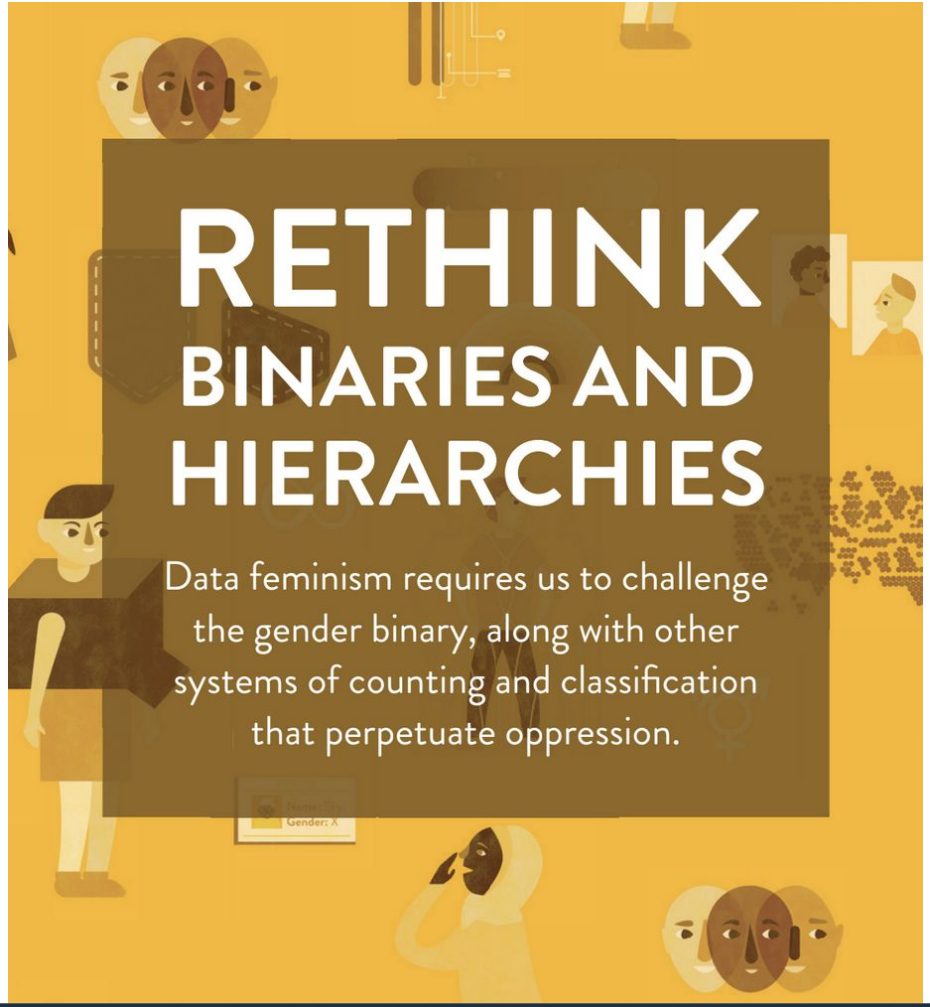
Data feminism insists that the most complete knowledge comes from synthesizing multiple perspectives, with priority given to local, Indigenous, and experiential ways of knowing.

CONSIDER CONTEXT

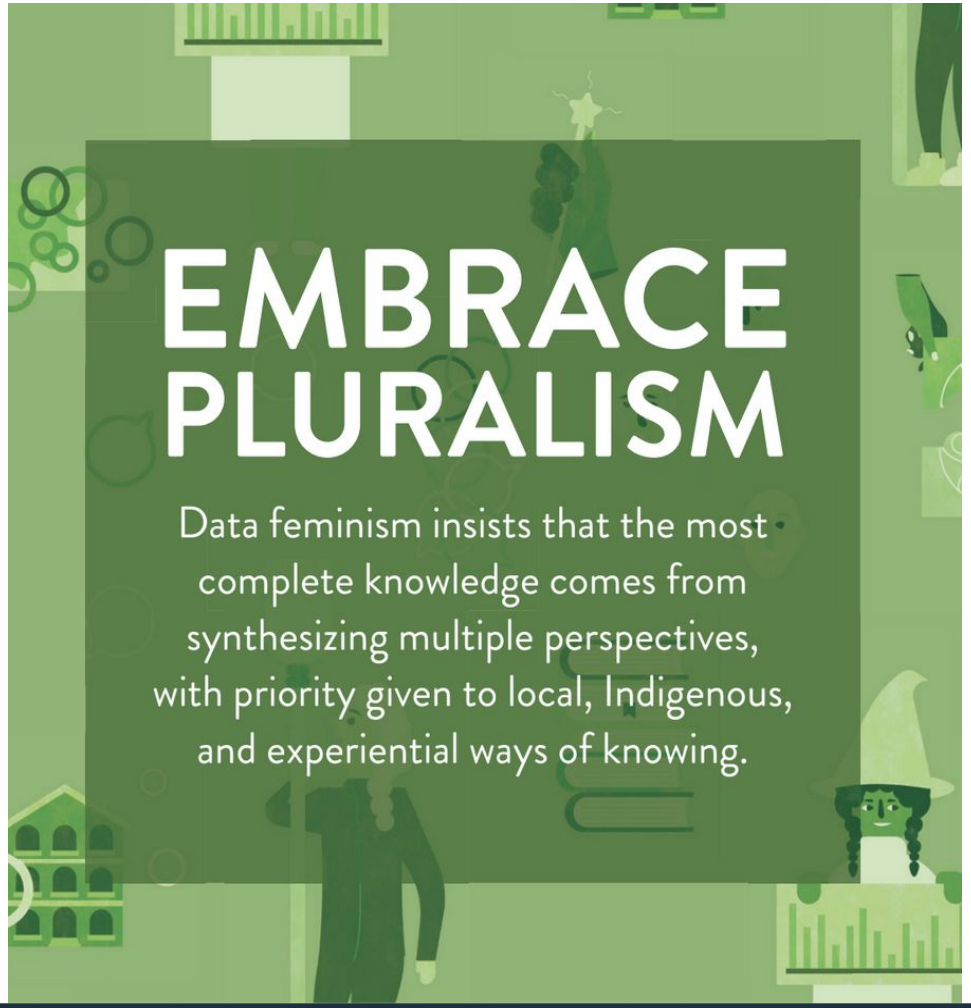
Data feminism asserts that data are not neutral or objective. They are the products of unequal social relations, and this context is essential for conducting accurate, ethical analysis.

MAKE LABOR VISIBLE

The work of data science, like all work in the world, is the work of many hands. Data feminism makes this labor visible so that it can be recognized and valued.



- Who are we counting?
- How are we counting them?
- What are we using to count them, their fingerprints?
- What categories have we created for gender?
- ...



- Who are we inviting at the table when designing our project?
- Which voices are heard and which aren't?
- Are we consulting indigenous communities about what can and what can't be counted?
- ...

Challenges of the international cooperation

- The main constraint was for some participants -educators- to be available and take the time for the course.
- The OER Recommendation advices to establishing regional and international **funding mechanisms** for promoting and strengthening OER and **identifying those mechanisms**, **including partnerships**, that can support international, regional and national efforts.
    - **Understanding these mechanisms** -funding and partnership- is already an intellectual endeavour, thus, it **should be part of any international funded collaboration**. This will lead to a stronger understanding of what are the conditions needed so that a generative long term collaboration can be established

Collaboration

We are open to support anyone who is willing to use these materials as they sit fit with their needs.

The idea with OERs is that they are reused, remixed and shared with others, it is in that process that the resources are refined and improved

Further research

- Explore Decolonising more in depth - the importance of context- Uruguay and kenya are good examples
- Interdisciplinarity enhances the learning experience. How can it be systematically integrated in such courses?
- Develop further our data ethics framework → Ethics as Method

I tell my students, 'When you get these jobs that you have been so brilliantly trained for, just remember that your real job is that **if you are free**, **you need to free somebody else**. **If you have some power, then your job is to empower somebody else**. This is not just a grab-bag candy game [Toni Morrison]