Understanding Data: Praxis and Politics [webinar]

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Understanding Data: Praxis and Politics

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#datapraxis
Slides

Recording
https://youtu.be/qiOvzB7sWew

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Outline

★ The DataPraxis project
★ What are open educational resources (OER) and open educational practices (OEP)
★ Pilot studies
★ Future research
★ Q & A
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?
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).
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
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?*)
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?)
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](https://doi.org/10.1007/s12024-019-09682-7)
“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!
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.
We devised an international collaboration to create 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.
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)
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.
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)
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
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.
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
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**
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
Kenya

Highlights

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)
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
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.
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.
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
• 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
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 allow 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
I have chosen this quadrant as the problem falls into closed data that is dealt with in an activist way.
Ethics as method

Our guiding principles

Values: Ethics of care · Data feminism · Critical pedagogy

Almasi, J., Timmermann, C., Havemann, L., & Kuhn, C. (2023) · Graphics Kuhn, A.
Data Ethics Canvas

Ongoing implementation
- Are you building in thought, ideas, and consultations of people affected by your project?
- What information or training might be needed to help those external to data use?
- Are tools, processes, and resources available for ongoing code review that support the process?

Ethical and legislative context
- What existing ethical codes apply to your sector or project? What guidance, policies, or other related initiatives support your work?
- Consider the role of any human rights, ethical codes of practice, and/or applicable laws and data sharing policies, particularly around data sharing, privacy, sectors (e.g., health, employment, location).

Minimising negative impact
- How will you identify and mitigate negative impacts on your project?
- How does your code prevent harm to others?
- How will you ensure any limitations in your data used?
- How will you prepare personal and other variables in the dataset?

Reviews and iterations
- How will ongoing data ethics reviews be measured, monitored, documented, and assessed? When will data ethics reviews be triggered?
- How often will your response to the code be measured, monitored, documented, and assessed?

Your actions
- What action will you take before making forward progress?
- Will you publicly update your actions and answers to the canvas?

Sharing data with others
- Are you going to be sharing data with other project participants? If so, who?
- Are you planning to publish any of the data? Under what circumstances?

Openness and transparency
- Do you plan to publish your methodology, training, datasets, code, and other resources?
- Can you use peer feedback on this project? How will you be communicating your purpose?
- How are you ensuring that data is accessible, discoverable, and understandable for end users?

Communicating your purpose
- How can people engage with you about the project?
- How will you make sure changes to the production stage?

Engaging with people
- How can people meaningfully engage with this project?
- How are you communicating your purpose?
- How are you ensuring that data is accessible, discoverable, and understandable for end users?

Negative effects on people
- Who could be negatively affected by this project?
- How could the data be collected, used, or shared cause harm or impact individuals or groups?
- Could it be used to target, profile, or influence people, or otherwise restrict access (e.g., workplace)?
- How are limitations and risks communicated to people?

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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 BINARY 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?
...

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.

- 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]