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Extended narrative

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Title of the session

- Educating for Social Participation: Open Data as Open Educational Resources

Intended Outcomes

- To consider strategies and showcase good practices for embedding open data as teaching and learning resources towards the development of global citizenship and transversal skills.

Description of topics and/or activities

- Open Data
- Open Educational Resources
- Open Educational Practices
- Transversal Skills
- Global Citizenship

Educating for Social Participation: Open Data as Open Educational Resources

We begin from the viewpoint that the process of production of knowledge in Higher Education must be understood as one of active construction, rather than of transmission and passive consumption. Students construct knowledge by critically analysing information from various sources and formats, including data. In our society, according to the OECD (2009) “All citizens should have equal opportunities and multiple channels to access information, be consulted and participate. Every reasonable effort should be made to engage with as wide a variety of people as possible” (p. 17). Being capable of analysing and interpreting raw data is increasingly important and can be seen as key to the development of transversal skills, which are defined by UNESCO (2015) as “critical and innovative thinking, inter-personal skills; intra-personal skills, and global citizenship” (p. 4).

For Kallman (1993), “our citizens, who encounter statistics at every turn in their daily lives often are unequipped with the statistical literacy required to evaluate the information” (p. 5), therefore open data can support the development of statistical skills, data analysis skills, data curation skills, data information management skills, data mining skills and data visualisation skills.

If one of our goals as educators is to develop these transversal skills in students, towards enabling them to function as citizens, to actively participate in the discourse and debates of society, then we propose that Open Data can play a key role. Open Data is produced and used at various levels in

research, governance, policy making and civil society. At scientific level, its openness supports honest and ethical research practices; at government level, promotes transparent governance; at policy-making level, facilitates the information needed to develop policy; and within wider civil society, supports journalists, activists and citizens to report, debate and argue for improvements in living conditions and for changes to law.

According to the influential Open Definition, Open Data has become understood as “data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike”. The definition further includes the following key concepts:

- **Availability and Access:** the data must be available as a whole and at no more than a reasonable reproduction cost.
- **Re-use and Redistribution:** the data must be provided under terms that permit re-use and redistribution including the intermixing with other datasets.
- **Universal Participation:** everyone must be able to use, re-use and redistribute - there should be no discrimination against fields of endeavour or against persons or groups.

In educational and academic contexts, Open Data can be understood and used as an Open Educational Resource (OER) to help support the engagement of students and researchers in analysing and collaborating towards finding solutions for contemporary real-world problems, chiefly by embedding Open Data and Open Science principles in research-based scenario-led activities. In this way, students can experience working with the same raw materials scientists and policy-makers use.

We consider that in order to ensure a sustainable model of Open Data provision for teaching and learning in universities is necessary that governance bodies in academic institutions support their scholars and researchers sharing their data and provide virtual spaces where students can access datasets being produced within their own universities, and to collaborate with the researchers that have produced this data, assisting them in developing an advanced practical understanding of research methodologies.

It is also important, when considering the use Open Data as OER, to involve librarians in the process of developing information literacies, as students need to be supported in select, assess and evaluate datasets that might be local or global, and to experiment with data that might be related to their own local communities, their local councils, their cities, their regions, their countries or relating to multinational or global level. Via this route students can understand, for example, how epidemics work, how the market fluctuates or how international policy is made, and also, because learning to select information in various formats to looking different types of scientific and political phenomena, develops those skills needed to contrast and compare the information with the media.

Drawn from the recommendations on good practices of the use of Open Data as OER from a series of case studies we can suggest educators embracing Open Data in the classroom must consider the following elements:

- **Focus:** define the research problem and its relation to the environment students.
- **Practicality:** match technical applications and practices to expected solutions.
- **Expectations:** set realistic expectations for data analysis.

- Directions: support in finding data portals which contain appropriate information.
- Training: provide training materials for the software students will need to analyse the data.
- Location: use global, local and scientific data which is as granular as possible.
- Modelling: develop model solutions to guide students on the challenges and activities.
- Collaboration: support students to work collaboratively and at multidisciplinary level.
- Communication: support students in communicating their findings to local or wider communities.

While there is already a degree of consensus in the academic and political levels on the value of Open Data for researchers, it is necessary to establish educational models and good practice in the use of Open Data as OER, and therefore enable students to become critical and engaged citizens.

References

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