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Title

Impact of OER use on teaching and learning: data from OER Research Hub (2013-2014)

Description

This is a pre-print version of Farrow, R., Pitt, R., de los Arcos, B., Perryman, L.-A., Weller, M. and McAndrew, P. (2015), Impact of OER use on teaching and learning: Data from OER Research Hub (2013–2014). *British Journal of Educational Technology*, 46: 972–976. [doi: 10.1111/bjet.12310](https://doi.org/10.1111/bjet.12310). More context is provided in de los Arcos et al (2014).

Authors

This data is an openly shared asset of the OER Research Hub (OERRH, 2014), an open research project based at The Open University (UK). The project uses a mixed methods and open collaboration approach to researching the impact of open educational resources (OER) on learning and teaching.

The researchers on the project were Beatriz de los Arcos, Robert Farrow and Rebecca Pitt; Leigh-Anne Perryman also contributed to the survey methodology and data collection. The principal investigators for the project were Patrick McAndrew and Martin Weller.

Abstract

The true power of comparative research around the impact and use of open educational resources is only just being realised, largely through the work done by the Hewlett-funded OER Research Hub, based at The Open University (UK). Since late 2012 the project has used a combination of surveys, interviews and focus groups to gather data about the use of OER by educators, formal learners and informal learners across the globe. This data focuses on the overall picture emerging from the survey research of the project, which presently comprises more than 6,390 responses, 50.3% of whom are informal learners, 24.7% of whom are formal learners, 21.6% of whom are educators and 3.4% of whom are librarians.– Results from more than twenty individual questionnaires have been compiled, including surveys of K12 and Flipped Learning teachers; college educators from the CCCOER consortium; users of iTunesU, OpenLearn, OpenStax, Saylor, Siyavula and the YouTube channel of The Open University.

The dataset

This data comprises responses to surveys carried out by OER Research Hub in multiple countries and use contexts with respect to the impact of open educational resources (OER). In addition to demographic questions –age, gender, country of residence, highest educational qualification, disability, first spoken language, type of employment, etc. 6,390 educators, formal and informal learners, and librarians answered questions designed to elicit information

regarding: types of OER used; purposes of using OER; use of OER repositories; challenges of using OER; teachers' views on the impact of OER use on their own practices and on students' learning; students' views on the impact of OER use on their own learning; and factors influencing selection of OER.

The sample can be analysed in several ways:

By role: informal learners (50.3%, n= 3212); formal learners (24.7%, n= 1578); educators (21.6%, n=1382); and librarians (3.4%, n=218).

By gender: Table 1 shows a reasonably even spread of responses across gender, with more male respondents in an educator role (55.6%, n=625) and in formal learning (54.4%, n=845), but a slightly higher percentage of female respondents in informal learning (50.1%, n=1579).

	EDUCATORS n=1125		FORMAL LEARNERS n=1554		INFORMAL LEARNERS n=3151		ALL RESPONDENTS N=6046	
	Count	%	Count	%	Count	%	Count	%
Male	625	55.6	845	54.4	1524	48.4	3032	50.1
Female	496	44.1	697	44.9	1579	50.1	2947	48.7
Transgender	4	.4	12	.8	48	1.5	67	1.1

Table1. Respondents by gender

By country of residence: All responses considered (N=6335), there are 180 different countries whose citizens report using OER, the highest percentages in the United States (35.3%, n=2236), United Kingdom (19.4%, n=1229), India (3.6%, n=226), Canada (3.3%, n=211), South Africa (2.5%, n=160), Australia (2.3%, n=143) and China (2%, n=125).

By academic qualification: Respondents were in general highly qualified, with a majority indicating that they hold a postgraduate (33.3%, n=2035) or undergraduate degree (28.5%, n=1738), and a very small percentage declaring that they have no formal qualification (4.4%, n=266). These figures are repeated in the educators' group, but reversed for formal and informal learners, as in both groups there are more respondents with an undergraduate degree than with a postgraduate degree.

Location and DOI

The full data set (CSV format) may be downloaded from Figshare at http://figshare.com/articles/OERRH_Survey_Data_2013_2014/1317313. In addition, a custom tool for exploring the survey data geographically is available at <http://oormap.org>. This tool uses Google Fusion Tables to store the data dynamically, and a version of the dataset can also be downloaded from <https://www.google.com/fusiontables/DataSource?docid=1szq2hshkKPmyXfo9tyYXLND4iS5vpTKOEKNX82uY>.

Creation

The survey data was gathered in a wide range of countries between 2013 and 2015. The results were compiled by the OER Research Hub project at The Institute of Educational Technology, The Open University, Milton Keynes, UK.

Date

This version of the data was created on 26th February 2015.

Format

This data is made available in .XLS and .CSV formats, as well as through Google Fusion Tables.

Restrictions to use (if any)

Researchers are encouraged to re-use this data. This data set has been licensed under the Creative Commons Attribution 4.0 International licence (CC BY 4.0). This means that others are free to copy and redistribute the material in any medium or format as well as remix, transform, and build upon the material (even commercially) as long as appropriate credit is offered to the authors (Creative Commons, 2014).

Introduction

The Open Educational Resources Research Hub (OERRH) provides a focus for research on OER, and is designed describe the impact of OER on learning and teaching practices whilst identifying the particular influence of openness. The project operates an open collaboration model and works with a range of projects, initiatives and organisations across four education sectors (K12, college, higher education and informal). An open research project, the OERRH builds and extends a network of research with shared methods and shared results.

OERRH investigates eleven hypotheses about open education:

- Use of OER leads to improvement in student performance and satisfaction;
- The open aspect of OER creates different usage and adoption patterns than other online resources;
- Open education models lead to more equitable access to education, serving a broader base of learners than traditional education;
- Use of OER is an effective method for improving retention for at-risk students;
- Use of OER leads to critical reflection by educators, with evidence of improvement in their practice;
- OER adoption at an institutional level leads to financial benefits for students and/or institutions;

- Informal learners use a variety of indicators when selecting OER;
- Informal learners adopt a variety of techniques to compensate for the lack of formal support, which can be supported in open courses;
- Open education acts as a bridge to formal education, and is complementary, not competitive, with it;
- Participation in OER pilots and programs leads to policy change at institutional level;
- Informal means of assessment are motivators to learning with OER.

These claims about OER impact provide the inspiration and grounding for the project methodology. OERRH uses mixed methods research and this survey data is just one element of the project research base. In some cases the survey question addresses the hypothesis directly; in other cases a proxy is used.

A summary report (de los Arcos *et al.*, 2014) based on the data from this set may be downloaded from the project website at

<https://oerresearchhub.files.wordpress.com/2014/11/oerrh-evidence-report-2014.pdf>. Statistical findings include:

- 37.6% of educators and 55.7% of formal learners say that using OER improves student satisfaction
- 27.5% of educators and 31.9% of formal learners agree that OER use results in better test scores
- 79.4% of OER users adapt resources to fit their needs
- 79.5% of educators use OER to get new ideas and inspiration
- 88.4% of learners say that the opportunity to study at no cost influenced their decision to use OER
- 74.9% of informal (non-registered) learners use OER
- Only 5% of educators say they don't share information about OE
- Only 12.4% of educators create resources and publish them on a Creative Commons license
- 40.9% of all formal learners in our sample consider that OER have a positive impact in helping them complete their course of study
- 79.6% of formal students think they save money by using OER
- 31.5% of informal learners say that their interest in using OER is a chance to try university-level content before signing up for a paid-for course
- 31.3% say their use of OER influenced their decision to register for their current course
- 83.2% of informal learners say they are more likely to take another free course or study a free open educational resource, and 24.2% say that they would go on to take a paid for course as a result of using OER

Some key conclusions drawn by the project include:

- Implementation of OER can improve student performance, but often indirectly through increased confidence, satisfaction and enthusiasm for the subject
- Re-use of OER happens at a large scale, facilitated by open licensing

- Using OER encourages reflective practice by educators
- Many students used OER informally before registering for formal studies, and continue to use OER to supplement their work
- Awareness of OER and Creative Commons is growing, but OER repositories remain relatively unused and unknown compared with other sources of OER like YouTube, Kahn Academy or TED lectures

Research method

This data was collected through more than twenty separate surveys of different sizes and samples, but with common core questions that were applied across the different surveys consistently. This reflects the collaborative nature of the research where the research team worked with different organizations, initiatives and projects to create research instruments that were both comparative whilst also incorporating and reflecting specific collaborations own research needs, contexts and questions. The areas covered by this data set include profiles of learners and teachers; OER related behaviours; motivations for using and selecting OER; challenges faced when using OER; and the impact of OER on pedagogical practice.

The range of OER covered by the survey data is very broad, including textbooks, course elements, multimedia, lectures, lesson plans, assessments, data sets, and learning tools. Detailed information is provided about how these have been used in teaching and learning, and the impact that this has on attitudes towards professional practice. Patterns for OER use can also be cross-referenced with indicators of improved learning, such as increased interest in a subject, improved confidence and self-reliance, satisfaction with the learning experience, and likelihood of further study.

Ethical considerations

A lot of attention was paid to ethics within the project, which aspired to be open in all respects of practice, including open dissemination. A summary of these considerations may be found in the project 'Ethics Manual' (Farrow, 2013). Participants in the surveys gave informed consent to the use of the data in research into the impact of open educational resources (OER) but did not necessarily consent to being publicly identified. Names and other personal information have been redacted from this data set but efforts should be taken to preserve anonymity should this data be augmented at a later date.

Limitations

Because of the collaborative and agile nature of the research programme followed, the same methodology was not applied consistently across all surveys. For instance, the question order was sometimes changed at the request of collaboration partners; the wording of some questions was superficially changed; some questions were reworked or removed. To avoid potential order effects or context effects the data was processed and refined after collection.

Where quantitative data around educational impact was hard to attain the research team often used attitudinal data as a proxy. Other researchers using this data should be aware that much of the resulting data is tailored to specific contexts of inquiry in the OER Research Hub project and should be careful about extrapolation to general populations.

Acknowledgements

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