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OPEN EDUCATIONAL RESOURCES (OER)

A REALITY CHECK

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In 2007, educators from around the world gathered in Cape Town, South Africa, to challenge the educational world to adopt and use Open Educational Resources (OER) to increase access to and success in education and to lower the cost of access. What progress had been made and what challenges remain?

THE GOOD NEWS

In mid-September 2017, IBM announced its Watson AI engine is available to teachers to help create lesson plans which are rich in open educational resources that support learning. When teachers search a concept, such as fractions or place value, they get a targeted lesson, relevant learning resources, recommended activities and a teaching strategy. From there, they can adjust variables such as ability level while keeping search terms the same, which may assist teachers whose students have different math proficiencies.

IBM Watson partners with Blackboard, which is an interesting development and is suggestive of more to come. For example, LMS systems could automate content generation and assessment generation, once the instructor determines the intended outcomes. Such systems could also share what others have done when faced with the task of designing courses or learning with similar intended outcomes.

The real hook, however, is Watson's continuously evolving Artificial Intelligence (AI) capacity. Over-time, the search tool should improve and refine itself based on data from users, potentially providing more relevant results. Within the rich, quality assured OER content bank Watson has access to, there are print materials, videos, animations, games, simulations and other resources as well as a "smart" video player. The video player can take advantage of Watson technology and can pinpoint the specific parts of any given video relevant to the search query and cue up just that part.

Earlier in 2017, New York State announced an $8 million investment in OER to reduce the cost of college and university education by developing OER textbooks and related resources. This follows similar investments by other US states and Canadian provinces. For example, The Affordable Learning Georgia program run by Georgia's public university system awarded $2.1 million in "textbook transformation" grants, which by the end of this academic year will save students an estimated $26.4 million in textbook costs -- more than 12 times the amount invested.

Adoption of quality OER resources, such as the OpenStax textbooks, is increasing worldwide. Their books gained a 10% market share in the US alone in the related subjects. Similarly, the proliferation of OER degree programs at 38 community colleges in the US, announced in the summer of 2016, will reduce costs on an even larger scale. But we have only recently begun to scratch the surface of how OER can help improve student outcomes, create opportunities for new pedagogies, and give institutions ownership over their course content while at the same time lowering the costs of higher education.

Canadian provinces are supporting OER development, both in Western Canada through projects supported by British Columbia, Alberta and Saskatchewan and in Ontario through the work of e-CampusOntario. The eCampusOntario Open Textbook initiative supports the development, quality assurance and use of open textbooks for programs across Canada.

The research supporting the adoption of OER is also getting clearer. According to the Hewlett Foundation, which has invested in OER since 2012, sixteen peer-reviewed studies clearly show students perform as well or better when using OER versus traditional textbooks. The studies also show both faculty and students perceive OER to be as good or better quality than traditional methods where the content and structure is determined by the publisher and their authors.

The purpose of the 2007 Cape Town Open Education Declaration was clear – reduce the cost of education and increase the quality of pedagogy by ensuring OER, including open textbooks, are freely available for K-12 and post-secondary courses. The authors of the Declaration also wanted to support the growth of OER-based credential pathways (including the pathway to degrees at both the undergraduate and graduate level) are widely accessible. An implicit aim is to accelerate the adoption of OER in school, college and university systems. A related aim is to increase access to open education – reducing barriers to entry and success for learners. These aims are further reinforced by the 2012 Paris Declaration from UNESCO, which placed emphasis on the development of strategic alliances and capacity building for quality OER development.

Given the overall intentions of the Cape Town Declaration, it is worth noting the development and adoption of MOOCs remains strong. While MOOCs are not OER – they are courses which are open to anyone, but the course content cannot be used and adapted for different purposes (a characteristic of many OERs) – they are a pathway to learning and credentials. In 2016, over 700 universities and colleges offered between them some 6,850 MOOC courses, which were taken by some 58 million students[1]. Further, 250 MOOCs can now be used as part of a formal education program, such as a degree, diploma or certificate. Coursera, which holds the largest market share of MOOC students (23 million), offers 160 specializations, which are a collection of certificated courses linked to a skill-set in high demand.

Some MOOCs are created entirely from OER materials. The Open Education Consortium developed OER-based MOOCs on the edX MOOC platform so the components of these OECx MOOCs can be used and adapted by others. Eliademy also developed OER-based MOOCs.

When we look at the volume of resources available on iTunes University, OERu, Merlot II, the Open University's Open Learn, Wikiversity and many other repositories (see here for a guide to OER resources), there can be no doubt OER resources are abundant and are steadily increasing as is the quality of such resources.

1 Source: https://www.class-central.com/report/mooc-stats-2016/

THE NOT SO GOOD NEWS

Many faculty and instructors have not yet "bought into" the use of OER. They continue to make extensive use of published textbooks and require their students to access proprietary and costly materials. There are four basic reasons for this reluctance:

a) According to a survey by Babson (2014), most faculty and instructors have never heard of OER – it's a "new thing" about which they know very little.

b) When faculty and instructors look at what materials they require their students to use, they look for a track record of proven use and quality – many OER resources, though seen to be of high quality, do not have the track record of use.

c) In general, faculty and instructors do not take into account the cost of textbooks and related materials when making their course content decisions nor do they look at the total cost of study to the student.

d) It takes time and commitment to search for and find appropriate OER.

The related finding of the Babson study is, once educated about OER, faculty and instructors are keen to find and use OER. In other words, OER providers don't have to fight an uphill battle to convince faculty and instructors that open resources can be just as good as the textbooks or related materials; they just have to work to show the alternatives to traditional resources exist.

Several studies (see here for an example) show faculty and instructors are also unaware of the difference between OER and digital resources. OER resources were developed for learning purpose, are adaptable and customizable and are free to use. Many digital resources were developed for other purposes (e.g. TED talks) and are not adaptable. Not all OER resources are necessarily digital – they can be printed or made available in a variety of formats, as can be seen in a collection of OER materials developed for technical and vocational education.

As adaptive learning engines, such as Brightspace by Desire2Learn or its equivalent within Blackboard, permit varied routes for learners to the same learning outcomes, the utilization of OER will increase. As such, systems become more intelligent and in more widespread use, the time taken by faculty and instructors to find and review relevant materials is reduced. As the number of users of such materials increases, the track record of effective use also increases, which aids adoption. Indeed, the adoption of machine intelligent and artificial intelligence systems for finding learning resources and tracking their use is beneficial.

Some faculty and instructors are also concerned about legal issues, especially those engaged in the development of OER resources. The issue is this: trying to package or release content that contains material that can't be released for legal reasons (e.g. geographical restrictions, type of use restrictions, volume use restrictions, etc.), or use of materials not

owned by the faculty member or instructor. Some institutions may have a very 'risk averse' approach and discourage faculty and instructors from developing OER to mitigate these risks. While there are a variety of such issues (see here for a catalogue), there are ways of ensuring OER materials are developed to ensure these concerns are dealt with.

SO, AFTER A DECADE, WHERE ARE WE?

Advocates of OER would like to have made much more progress than can be seen at this time. Nonetheless, substantial progress was achieved and the pace of progress is accelerating. As more flexible routes to certification develop, OER resources continue to grow. Issues of quality, adaptability, access and efficacy are being addressed. More governments and institutions are seeing the value of OER and this is leading to more investment and more opportunities to showcase effective use of OER to improve learning outcomes. The research and evaluation studies remain largely positive. Progress is strong. Those who helped shape this movement and who attended the Cape Town and Paris meetings should be pleased. They also need to continue to advocate for the increased use and adoption of OER. There is a long way to go.