The Origins and Development of Open Educational Resources

by Robert Weisser

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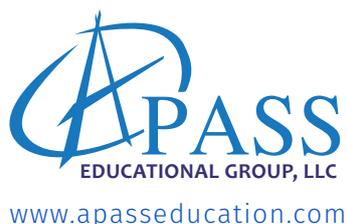
> For this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by external characters which are no part of themselves, will discourage the use of their own memory within them.

—Socratic dialogue (ca. 370 B.C.) about the invention of writing, recounted by Plato in *Phaedrus*

Since time immemorial, there have been people who have rejected changes in learning techniques, branding such developments as anti-intellectual, anti-truth, or anti-human. This occurred not only in Socrates' time, but in Gutenberg's time and in Dewey's time.

And it continues up until the present, as the 21st century is host to widespread ferment in all educational fields. Schools from pre-kindergarten through post-graduate levels are undergoing changes in funding, staffing, training, and technology that will, in the relative near term, render them unrecognizable to people who worked with them at the beginning of the era.

Change Accelerates with Open Educational Resources

One of the important drivers of institutional change in education since 2000 has been the open educational resources (OER) movement. OERs are "high-quality, openly licensed, online educational materials that offer an extraordinary opportunity for people everywhere to share, use, and reuse knowledge …" that "demonstrate great potential as a mechanism for instructional innovation as networks of teachers and learners share best practices" (Hewlett Foundation, 2016).

The MIT OpenCourseWare (OCW) project is generally credited as the genesis of OER. This project was announced in 2001 with the intention of putting the entire course catalog for the Massachusetts Institute of Technology online. The idea for this open, sharing intellectual community had connections to the increased availability of distance learning that became popular in the 1990s, and also the culture of open knowledge, sharing, and peer collaboration that emerged with the maturation of open source software systems in the late-20th century.

After partnering with Utah State University to create a distributed peer support network for the OCW content, MIT had 50 courses online by 2002. That same year, the term "open educational resources" was first adopted at UNESCO's Forum on the Impact of Open Courseware for Higher Education in Developing Countries. By 2003, the number of MIT courses online had passed 500, and four years later, virtually all of MIT's courses (more than 2,000) were online (MIT OpenCourseWare, 2016).

The materials available are not just videos of lectures or classroom notes. They include full

courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques that support access to knowledge. The courses are freely available to anyone who wishes to learn the information or teach it to others. The files can be downloaded and saved for later use, as well as modified or remixed for any non-commercial use (as long as OCW is credited as the source).

Other higher-education institutions climbed aboard the bandwagon. Schools such as the University of Michigan followed MIT's example and made a wide variety of complete courses available. Other schools, such as Johns Hopkins and Yale universities, put online more limited resources with fewer ancillary materials.

One of the more ambitious sites is the Open Education Consortium, which bills itself as "the global network for open education." This worldwide collaborative initiative brings together OCW from universities across six continents. Users can browse courses by language, source, or subject; there's also a course catalog (currently in beta mode) to browse classes by subject. The consortium also has an OCW Toolkit Initiative that helps other institutions set up their own open resource initiatives (Open Education Consortium, 2016).

The Vision of OER Providers

The William and Flora Hewlett Foundation, a private foundation with more than $9 billion in funding power, was one of the early backers of OER. The foundation donated millions of dollars to MIT to help get its OCW off the ground, and continues to provide challenge grants to build out the OER infrastructure.

In its OER philanthropy, the Hewlett Foundation looks to achieve the following goals (Hewlett Foundation, 2013):

- **Radically reduce the costs of education at all levels.** Savings are often realized because of the availability of online textbooks aligned to learning standards that OER makes possible.

- **Deliver greater learning efficiency, in both cost and time to mastery.** Besides gaining access to open textbooks, students can use online tutoring programs that cut learning time dramatically and improve test scores.

- **Promote continuous improvement of instruction and personalized learning.** Teachers can customize coursework based on open textbooks to match state standards and meet the individual needs of students.

- **Encourage translation and localization of content.** Courses and simulations are translated into other languages for adaptation in cultures around the world.

- **Offer equal access to knowledge for all.** Open online courses make it possible for anyone to master material at any time without being enrolled in an educational institution.

Other OER organizations express similar sentiments. For example, Curriki is a curated archive of educational materials directed at the K-12 level with over 10 million global users. In addition to its resources, it provides a platform for educators, students, and parents around the world to collaborate. Its mission is to "eliminate the Education Divide—the gap between those who have access to high-quality education and those who do not—in the U.S. and worldwide. It's online community of educators, learners, and committed education experts works together to build and share quality materials that benefit teachers, parents, and students globally."

Curriki encourages users to share what they learn, share what they know, and share their content. This collaboration encourages development of peer-reviewed, classroom-tested resources that are constantly being updated and improved. Materials suited for the different needs of teachers, students, and parents make searches easier and more productive for all users (Curriki, 2016).

Such collaboration also results in additional and updated resources in the curated sites, because the essence of OER is expanding human knowledge. A perfect example of this is OER Commons, founded in 2007 by the Institute for the Study of Knowledge Management in Education (ISKME). It is a free teaching and learning network that curates more than 50,000 educational resources that are available for anyone to use. The resources can be searched and filtered using an expansive set of descriptive data. They can be downloaded and shared, and sometimes they can be revised

and re-uploaded to the site. And users can give, too, enriching the metadata of the resources by tagging, rating, and reviewing materials and sharing what works for them. The resources available on OER Commons include (OER Commons, 2016):

- Full university courses

- Interactive mini-lessons and simulations

- Adaptations of existing open work

- Open textbooks

- K-12 lesson plans, worksheets, and activities

Conclusion

OER is still in its infancy. Despite excitement over the educational possibilities of open source materials and lessons, only a minority of educational institutions use the resources in their regular learning settings. The low level of interest may partially result from a lack of funding. However, some surveys indicate that a higher barrier is lack of knowledge—not only of what OER is, but how it can be incorporated into classrooms and what effects it might have there (Educause, 2010).

One of the more radical viewpoints of OER is that it will lead to a future in which everything needed for an education will be available online for free, and that learners will construct a course of study for themselves from the wide and increasingly accessible amount of open sources. Others see a less disruptive future, suggesting that the models for the various levels of education will persist in much the

same form as they are today, but enhanced by high-quality open content. Whichever version becomes the standard, OER will expand access to educational resources to more learners, more of the time.

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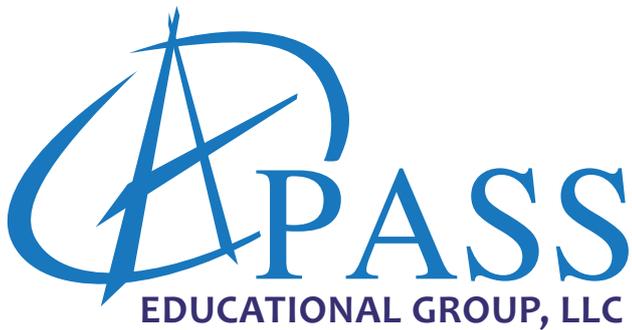
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