OPEN EDUCATIONAL RESOURCES

IS THE FEDERAL GOVERNMENT OVERSTEPPING ITS ROLE?

WHEN LOIS GRIFFIN RUNS for school board in the animated television comedy *Family Guy,* she stumps on a platform of "competent teachers, a better-funded music department, and updated textbooks that don't refer to the Civil Rights Movement as 'trouble ahead.'" Perpetually outdated, inordinately expensive, and a pain to lug around, textbooks have been the bête noire of educators and technologists for years. Replacing them with resources that are less costly and more flexible has been their cri de coeur.

While digital products have made significant inroads into the educational resources market, textbooks and other print materials still command about 60 percent of sales. But whether print or digital, all of these commercial offerings now face threats from a burgeoning effort to promote "open" resources for education—that is, materials that can be used and replicated free of charge because their copyright exists in the public domain.

Proponents of open resources have enlisted the help of the federal government, which has launched a multi-pronged initiative called #GoOpen. Through this project, the feds are promoting open resources both in classroom practice and by awarding grants for research projects focused on the development of open resources. While this effort seems laudable, it exposes many unanswered questions about the long-term viability of the open-resources movement.

What Are Open Educational Resources?

Open educational resources (OER), also known as openly licensed resources, can take numerous forms. At the simplest level, an open resource might be a picture of Abraham Lincoln that a teacher could use in the classroom for free without

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violating the copyright of the creator of that image. It could also be one of the 16,000 lessons that teachers have shared on the platform BetterLesson, licensed under an open copyright that allows for their use, for free, by other teachers. In their most robust form, open resources can comprise entire curricula, like those offered by the State of New York's EngageNY project, which are made "open" for teachers to use and modify at their discretion. To give some sense of scale, EngageNY has been downloaded more than 45 million times.

Just how big is the market that this movement is looking to disrupt? The answer varies, depending on what is included in the definition of "educational resource." The Learning Counsel research institute has analyzed various estimates and concludes that total annual K–12 spending on print resources (textbooks and other materials) in 2014 was $10.4 billion, while digital content and curriculum spending came to $1.8 billion at the district level and $4.8 billion at the school or teacher level. That amounts to a total of $17 billion annual spending on educational materials, or 2.8 percent of the overall public-education expenditures of $617 billion in the nation.

But here's the rub: open resources are offered free to users, but they are not necessarily free to *produce.* Yes, volunteers have created many of the lessons on platforms such as Share My Lesson (which is sponsored by the American Federation of Teachers), but other resources that are free to users have been created by organizations that are paid for their work. The State of New York, for example, paid $36.6 million to a mix of nonprofit and for-profit providers to create the content and coursework for EngageNY.

This is a central tension that plagues the open-resources movement: teachers want free, high-quality resources, but the people who create them want to be paid for doing so. Creating high-quality educational content is not like editing a Wikipedia page. Yes, it requires expertise, but it also requires creativity and pedagogical smarts. Content must be sequenced and aligned with the learning goals articulated in state standards. It must be supported by activities, handouts, quizzes, PowerPoint slides, and so on. As any teacher will tell you, content development takes time. While people are willing to donate their time to a shared project such as Wikipedia, in almost all other domains where people produce intellectual property—from journalism to the music business to architecture to book publishing—they are not. It's tough to envision an open-resources movement with great products that doesn't compensate the content creators for their work.

A second tension besets this movement. Just how "open" can resources be if they operate within the strictures of government-regulated scope and sequences? That is, if the state sets the topics and the order in which they must be covered via prescribed standards and assessments, how much room is there for improvisation? When people hear the term "open resources," they might think of Wikipedia, which is powered by a somewhat amorphous volunteer collective of do-gooders sharing knowledge and correcting inaccuracies. But schools need resources that are more focused and specialized: every year, schools have specific goals to meet, goals that are articulated in state standards and codified in curricula. The more directly and exhaustively those goals are spelled out, the less wiggle room schools have to choose open resources, at least on the level of complete learning units or curricula. OER might have great potential for homeschoolers, private schools, or parents who wish to supplement what their kids learn in school, but public-school educators will be hard-pressed to fit them into curricula that are driven by state standards and assessments.

Given these tensions, it is important to examine what productive role, if any, the federal government can play in the evolution of OER. Even if OER are worth supporting, it may be best for the feds to stay out of the movement. As is often the case, the federal government might play a constructive role as a convener and promoter, but it must guard against being overly prescriptive and putting its thumb too hard on the OER scale before the key questions have been addressed.

Origins of OER

In 2001, Harvard law professor Lawrence Lessig helped found Creative Commons, an organization that devised a form of copyright protection that allows for the sharing

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and free replication of works so long as they are used for noncommercial purposes. In books such as *The Future of Ideas* and *Free Culture,* Lessig argued that the scope and reach of copyright laws stifle innovation and the furtherance of knowledge. Knowledge perpetually builds on itself, and the definition of copyright-protected "derivative" works has grown to include too wide a variety of products, he maintained.

Over the past 15 years, the Creative Commons movement has slowly expanded to education, pushed forward by several forces. First and most visibly, states have made efforts to unify standards through such efforts as the Common Core State Standards Initiative and the Next Generation Science Standards. These projects have enabled teachers from across district and state lines to share materials with one another. As states moved toward more universal standards, many teachers, schools, and districts cried foul at the way established textbook companies responded (or failed to respond) to the changing norms. Teachers charged that the companies were simply slapping "Common Core–Aligned" stickers onto their old products. Many educators decided to strike out on their own to find materials to supplement standard textbooks, with some enterprising teachers even creating lessons, quizzes, and other instructional materials and allowing other teachers to use them for free. At the same time, public education saw a massive influx of new educational technology. More and more schools were beginning to assign a laptop or other device to every student. This new environment created a hefty appetite for new materials.

The evolving approach to finding relevant and useful educational materials on the part of teachers is reflected in a recent survey by the RAND Corporation, which found that 82 percent of elementary-school math teachers and 91 percent of high-school math teachers used materials that they created themselves or found on their own at least once a week. In English language arts, the figures were 89 percent of elementary-school teachers and 85 percent of secondary-school teachers. Self-reported claims about workload might

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be subject to question, but if they are anywhere close to accurate, there is a huge need here. Certainly, the demand is illustrated in the numbers reported by the platforms that share open resources. To date, BetterLesson has attracted more than 350,000 users, Share My Lesson boasts 900,000, and Teachers Pay Teachers (a variation on this model that enables teachers to pay each other for content) has more than 3.8 million users worldwide.

The theory of action for open-resources proponents is quite clear: Teachers know what is best for students. Teachers and other educators want to collaborate with one another. Technology and unified standards have made that collaboration easier than ever. Textbook companies are not meeting teachers' needs, even though their products are incredibly expensive. So, creating platforms to allow teachers to share the resources they have designed should drive up the quality of instructional materials while also driving down their cost.

One player that was certainly persuaded by this logic was the federal government, which for just over a year now has been openly promoting the use of OER.

#GoOpen

In October 2015, the federal government launched the Go Open campaign (stylized as #GoOpen). The project is designed to promote both the creation and the adoption of OER. (Somewhat surprisingly, the Department of Education's press office declined my request to interview anyone connected with #GoOpen for this article.) The initiative is threefold: First, the government is developing the Learning Registry, an online searchable repository of open resources. Second, it is working with a set of districts around the country to encourage them to adopt OER as course materials. Third, it is proposing a new regulation that would require any copyrightable intellectual property created with support of federal competitive grants to have an open license.

On the Learning Registry's web site, one can enter key terms, and the search engine trawls its databases for resources. The web site itself does not house the resources but simply
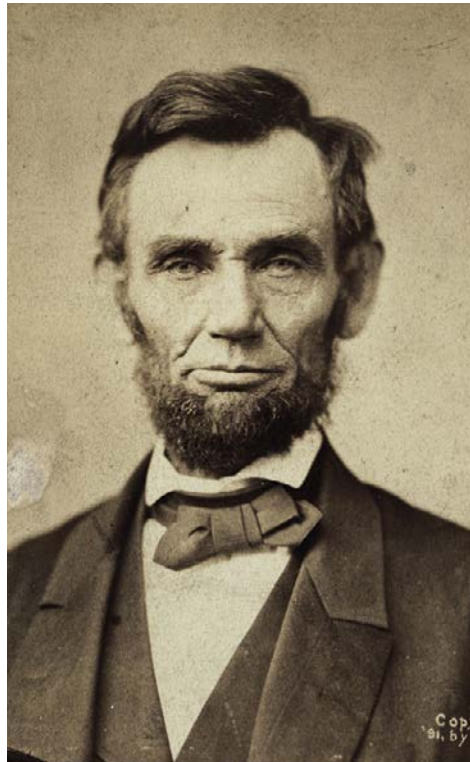
provides summaries plus links to the hosting sites.

As a former 9th-grade English teacher, I decided to search for *Romeo and Juliet.* The search engine churned out 232,949 results. Scrolling through the first 10 or 15 hits, I didn't discern much rhyme or reason to them. The top result was a 1990s-looking webpage on "Shakespeare's lingo," with some links to other sites offering information on Shakespeare. Not particularly helpful. The second link took me to the National Endowment for the Humanities' open-educational-resources page, which offered a two-class-period lesson on *Romeo and Juliet,* complete with worksheets, pictures, and links to an online "sonnet unscrambler" and other activities. The page also had comments from teachers and a crowdsourced rating system showing its perceived alignment to related Common Core English Language Arts Standards.

Although this repository might eventually be useful, it's hard to see how it addresses the issues raised by many skeptics of open resources. If I were a teacher on my planning period (or worse, sitting at home on Sunday night, and trying to figure out what to do on Monday), I wouldn't have the time to wade through the welter of materials, separate the wheat from the chaff, and try to sequence the new resources into my overall teaching plan. Interestingly, the #GoOpen repository is not targeting teachers as its main audience. If you click on the "educators" option, the text says, "The Learning Registry is not intended to be your portal into the world of digital resources but rather a conductor that developers can use to create the user-friendly and tailored tools you need.… The primary audiences for this site are publishers and developers." Most likely, teachers will not be able to use this site to improve their classroom practice, at least not in the near future.

The Learning Registry project raises questions about the role of the federal government in creating such platforms. It is not clear, for example, why it is the government's job to try to set up an end-run around the textbook industry. In fact, it isn't clear that copyright protections are even the main barrier to getting quality resources into the classroom at a good price. The outdated procurement procedures and multi-year adoption cycles of states and districts are frequently named as primary barriers, but sending open resources to fix a procurement problem is not necessarily

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going to work. And if the #GoOpen initiative is successful, it could diminish or destroy textbook companies, which could put schools in a quandary should OER ultimately not pan out.

What's more, states and private organizations are already working to create OER repositories, from EngageNY to Utah's Open Textbook Project to Share My Lesson to BetterLesson and many others. Is the Learning Registry a solution in search of a problem? Does it undermine these other efforts? It would seem that the federal government is better positioned to help convene groups that are already working on OER, to disseminate what they are developing, and to give the federal imprimatur to these efforts so educators will feel more comfortable participating. The Department of Education could be a productive member of the supporting cast, but it shouldn't be the star.

The second tranche of #GoOpen does focus on convening and supporting. Here, the federal government is collaborating with almost 40 school districts to promote the creation and adoption of openly licensed educational resources. Currently, 30 districts interested in starting to use OER are acting as "launch" districts, and 9 that have been working with OER for some time are acting as "ambassador" districts. A launch district must commit to replacing at least one textbook with open resources, and documenting how it did so, in order to enable sharing with others. Ambassador districts are tasked with sharing the materials they have created and giving assistance to launch districts.

Fourteen states have also committed to creating a statewide repository for openly licensed resources and working with districts to share those resources and tools to put them to use. As for the textbook industry, it appears to be watchfully waiting out these developments, not necessarily eager to act too quickly, but also recognizing that the industry might have to rethink its product lines should the preponderance of basic content become available for free.

The third component of #GoOpen is the government's proposed rule. In October 2015, the Department of Education advanced a regulation that would, in its words, "require all copyrightable intellectual property created with Department discretionary competitive grant funds to have an open license."

On one level, this makes perfect sense. If U.S. tax dollars are paying for the work that creates the intellectual property, that product should be made available for the use of U.S. taxpayers. That said, several big-name education researchers have pushed back on the proposed rule. A blistering letter cosigned by 15 researchers and funders (including Ann Arvin, vice provost for research at Stanford; Adam Gamoran, president of the W. T. Grant Foundation; and psychologists Angela Duckworth and Carol Dweck) laid out several problems with the rule.

Much of their complaint hinges on one of the very issues that motivated the initial work of Lessig and Creative Commons, that is, what counts as a "derivative work." The letter cosigners fear that work created to make grant-funded research applicable or useful for schools and classrooms might be seen as "derivations" of the initial grant-funded work and thus might also fall under the rule. Many of the research centers that these cosigners represent rely on revenue generated by their projects and by the educational materials that derive from such activities. The proposed rule would effectively choke off that revenue stream, which is often reinvested in further research and development. At the same time, the letter writers contend, when they sell their products, they currently have some control over how they are used. The researchers worry that their products might be misused if they are simply out in the open, bearing the patina of being "research-" or "evidence-based." If others are free to adapt the materials at will, they may well alter the integrity of any components that were validated by research or testing.

Is the Grass Greener?

The federal government should not throw its weight behind OER unless and until it knows that such resources are truly the wave of the future—and right now that is far from clear. Numerous unresolved issues pose serious concerns about the long-term viability of OER. By encouraging more states and districts to use these resources now, the federal government risks accelerating the demise of OER, not ensuring their survival.

According to some sources, there are more than one billion pieces of educational content available in the open-resources infrastructure. In addition to the 16,000 lessons on BetterLesson, Share My Lesson boasts more than 300,000. The problem is, teachers and district curriculum specialists can become overwhelmed by this torrent of materials. They might find 15 lessons on FDR's first inaugural address. Which ones are the best? Are some more complete than others? Do they require specific technology or other resources that the school may or may not have? Hunting and digging through the options can be time-consuming and frustrating, even with the search tools that the platforms provide.

As noted earlier, even if one finds good materials, sequencing them into a lesson plan can be a challenge. Imagine that you are a teacher and you find a great video on the Lighthouse of Alexandria, or a terrific lesson on the Pythagorean theorem. Now you have to figure out how the material fits in with your overall teaching strategies and lesson content. By relying on open resources, teachers have to become curriculum designers as well, patching together resources, assessments, readings, and outside projects. Part of EngageNY's raison d'être was to solve this very problem. Rather than simply posting isolated lessons, the site sequences them into an open curriculum. This curriculum has been wildly successful and shows the hunger that teachers have for more complete collections of ordered resources.

In addition to demand-side concerns, there are hurdles on the supply side. Creating high-quality educational materials is time-consuming. As more and more schools look for sophisticated digital resources, the technological skill necessary to create interactive or even computer-adaptive resources becomes more and more advanced. Only a tiny fraction of K–12 educators have the skills necessary to create materials in step with current developments in web design, interactivity, animation, and the like. That means that technical experts will probably have to create them, and these professionals will expect to be remunerated for their services.

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For all of the bashing of textbook companies, they do have several distinct advantages in the marketplace. First, they have the technological infrastructure and expertise to create tools and resources that are visually appealing and computer adaptive. Second, they have the personnel and talent pool to research, write, fact check, and edit materials as well as ensure that these resources are aligned to relevant content standards. They also can sequence lessons, create units, produce wraparound professional development tools, and design assessments, presenting all of it in an integrated way that allows one-stop shopping for the customer. Can the OER movement accomplish these things today? Will it be able to in the near or medium-term future? Will individuals without a profit motive be willing to do the not-so-pleasant fact checking, coding, and other "administrivia" of creating integrated lessons, units, courses, and grade sequences? Will content producers be able to adapt their work for English language learners or students with special needs? All of that remains to be seen.

There are also important questions related to the Family Educational Rights and Privacy Act (FERPA) and other student-privacy issues that developers of open resources must wrestle with. For instance, if OER creators are going to collect any kind of student data (as computer-adaptive instructional tools must in order to adjust to how the student is progressing), who owns that data? What safeguards are in place to keep them secure? If there is a data breach, who is responsible?

Perhaps most important, we ask a lot from our teachers. Asking them to compile and use open-source materials to develop their own coherent lessons, units, or courses is requiring them to put in an enormous amount of extra time and energy. Asking them to create content (generally free of charge) that other teachers can use goes even further.

Where Do We Go from Here?

Educational resources have a long history, from Aelius Donatus's fourth-century *Ars grammatica* to the *McGuffey's Readers* to the Khan Academy. If we think about open educational resources as part of that timeline, they are the thinnest sliver at the very end. In the future, the movement will have to wrestle with several issues.

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First, how can OER advocates maintain a steady stream of high-quality and relevant content? If they cannot keep pace with technology or pedagogical practice, they are going to be left behind.

Second, how do we avoid maxing out teachers? Yes, teachers want better content. They would also like to hold on to their nights and weekends. If open educational resources rely on teachers to spend lots of time sifting through materials or creating it themselves, that could send teachers back to textbooks posthaste.

Finally, is there a productive and appropriate role that the federal government can play? The federal government has extraordinary convening power and the infrastructure to collect and disseminate information about how schools and districts are solving problems. It also makes many large grants to education researchers, and requiring all of the products of their works to be openly licensed could spread what they have learned faster and more cheaply.
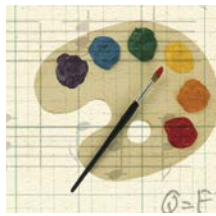
On the other hand, the federal government is putting its thumb on the scale for one particular type of content-creation mechanism, and that could disrupt the marketplace. If textbook companies do go out of business, what will happen 5 or 10 years hence? If open-content producers can't keep up with the coding acumen necessary to make the adaptive technology that the federally funded research prescribes, schools will be in a serious bind. The very organizations that could fill that gap—the textbook companies—will be gone. And this scenario even assumes that the next administration or the next after that will still care about "going open." It's quite possible that they won't. Will the private and nonprofit support be there to keep the movement going? Again, the answers are not clear.

It remains to be seen just how many states, districts, schools, and classrooms are going to #GoOpen. But given the unresolved questions that still surround their effort, open-resource proponents would be wise to heed these words of *McGuffey's Third Eclectic Reader*:

"Shame and repentance are the sure consequences of rashness and want of thought."

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