Pedagogical Weaknesses of Present OER Materials

by Robert Weisser

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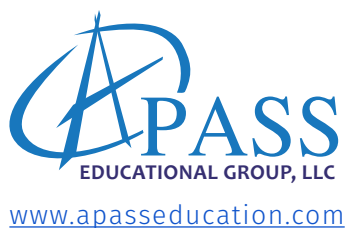
One of the greatest benefits of focusing on OER materials is that it puts creativity and power back in the hands of [the] user. We wanted to provide a resource that, while covering the basic needs of the user, acts as a catalyst for creative thinking and explorations by both students and teachers.

—Scott Lamie, teacher, Bristol Tennessee City Schools OER Implementation Team

In 2012, the website Campustechnology.com interviewed people who were active in OER implementation in higher education to learn what challenges might be blocking greater use of the resources by teachers (McCrea, 2012). The experts agreed that four main issues were slowing OER acceptance:

- Too many resources to choose from

- "The textbook is the course" mindset

- Teachers' limited time to develop course materials

- Teachers' lack of knowledge about OER

Although public and private advocates have continued their efforts to bring OER into the mainstream of education, a survey conducted by the Babson Survey Research Group (BSRG) in 2016 found that not much had changed. BSRG found that only 25 percent of the 3,000 teachers they surveyed were aware of OER, and less than

6 percent of courses taught were using OER (Ravipati, 2016).

These results occurred despite outreach by organizations such as the U.S. Department of Education, which on Oct. 29, 2015, launched the #GoOpen campaign to advocate for and encourage use of OER materials by teachers and educational institutions. Part of the campaign was proposed regulation requiring all copyrightable intellectual property created with Department grant funds to have an open license. As then-Education Secretary Arne Duncan said: "In order to ensure that all students . . . have access to high-quality learning resources, we are encouraging districts and states to move away from traditional textbooks and toward freely accessible, openly-licensed materials" (U.S. Department of Education, 2015).

The #GoOpen campaign was rolled out with ten school districts that committed to replace at least one textbook with openly licensed educational resources within the next year. Another six districts were designated #GoOpen Ambassador Districts because they were already using openly licensed educational materials and agreed to help other districts understand how to effectively discover and curate these resources. In addition, multiple high-profile businesses in the digital world— including Amazon, Edmodo, Microsoft, and Creative Commons—agreed to provide free or reduced-cost technical and advisory services to districts replacing static textbooks with OER materials.

Overcoming Implementation Challenges

Although many advocates are hopeful that the continued drumbeat for OER use in K-12 education will soon make these ideas permeate education systems around the world, the evidence instead points to a slow but steady advance. As repeated surveys have pointed out, there are numerous challenges, both real and perceived, that must be overcome. OpenCurriculum.org, an organization that aggregates and disseminates open source materials as well as full courses, identified five key areas that must be addressed to bring about widespread OER acceptance (Arora, 2015):

- **Interoperability**
  Despite having hundreds of thousands of well-indexed OERs at their digital fingertips, it is still very difficult for teachers to make resources in different formats and from different publishers work together. Educational "remixers" and

curriculum developers have the same trouble combining resources and building consistent, useful experiences for teachers and learners. Although dealing with variable formats is a large problem, the difficulties go far beyond this: The more complex problem is being able to combine disparate resources into one coherent curriculum that any teacher—and particularly novices—can use right out of the box.

- **Context-Based Search and Discovery**
  In response to demands from users, a number of OER repositories have improved their search engines, making it easier and more intuitive to drill down through hundreds of resources to find the ones that best serve a teacher's needs. However, a consistent complaint remains: "I can't find what I am looking for." It remains very difficult for teachers to acquire relevant materials in the context they teach in— the values of the school and classroom environments, the student demographic, the language needs, the teaching sequence, the instructional strategies, and so on. Repositories must shift from producing a listing of loosely related materials based on a shallow algorithm of keywords to content discovery based on a deeper context-based algorithm in order to make teachers' tasks easier.

  A related issue is how users can know whether they have accessed all of the materials that are best for their needs when each OER repository is siloed off from all the others. Are all aspects of the subject covered by the sources in a particular

repository, especially if that is the repository that a district has subscribed to?

- **Quality and Rigor**
  This category applies directly to the OER materials that fill repositories. A large number of them have not been vetted extensively, either for accuracy or for alignment to college- and career-ready educational standards. One reason is that a large percentage of the resources were created before the adoption of current state or national teaching organization standards. The current standards regime requires a fundamental change in thinking about how to develop instructional materials, and it is difficult to modify resources that were created based on past standards.

Thus, many of the "millions" of accessible resources do not have the qualities required by today's classes.

Are all learning objectives covered by the materials? Are upper-level learning skills enhanced? Are there links to other resources based on the differentiated needs of students? Teachers need reliable ratings of the materials, yet not all repositories provide them. In addition, not all repositories make crowd-sourced changes and improvements to resources a feature of their services.

- **Curriculum Planning and Materials Procurement**
  Changing the choice and nature of the resources schools use to educate

their students requires a shift in how they procure and align those materials and how they plan their curricula. Currently, textbook vendors sell coherent bundled programs with well-laid-out unit sequences, supplementary teaching materials with differentiated activities, and multifaceted student workbooks. In the new environment of remixability, early adopters will not have this luxury. Although many would say breaking free from the major textbook companies' products is a good thing, it requires districts to beef up professional development for instructional teams and shift how they plan curriculum; how they map curriculum to content, skills, and assessment; and how they tie everything back to the standards. And they must do this while preserving teacher autonomy and staying focused on student achievement.

Also, unless a repository makes full courses downloadable, teachers are still responsible for creating assessment items for the resources, for differentiating activities for students, for promoting critical-thinking skills, and for keeping students on a disciplined track through the learning materials.

- **Participation**
  Advances in OER availability have so far been driven by foundation- or government-funded programs intended to fill gaps in different subject areas and grade levels. Although great strides have been made, this bootstrapping endeavor is not sustainable. For OER to be truly open and participatory,

large numbers of individual teachers will have to create, collaborate, and distribute materials. Having this sort of collaborative environment would enable teachers to have their needs almost immediately met in real time by fellow teachers. This is happening in some areas, but the challenge remains in amplifying the reach and accessibility of these networks.

In a capitalist system, it is likely that large tech corporations will fill the need with their own products. However, it would be up to an overarching entity (e.g., the federal government) to set standards for cost, accessibility to all teachers and students, and quality of materials. If profit-seeking companies (Amazon, Google, etc.) are driving much of OER development, how will this impact the availability of archives if they gain monopoly power over the archives?

Conclusion

The OER movement is expanding, but acceptance and participation is hobbled by a lack of awareness as well as ongoing infrastructure gaps. The fact that the US government has joined forces with numerous state governments and independent foundations to promote open learning materials seems to indicate that OER will continue to grow in popularity. However, surveys have shown that growth may be maddeningly slow unless resources are put toward supporting teachers and school districts to make the tactical shifts needed to take full advantage of these resources.
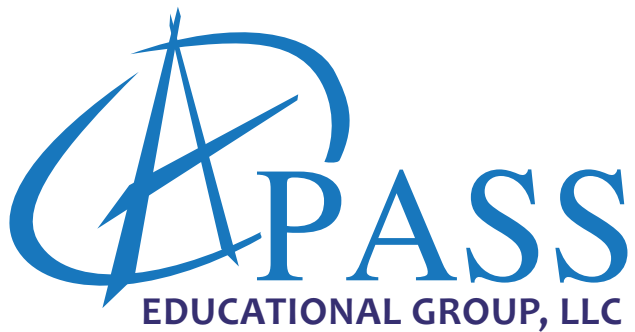
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