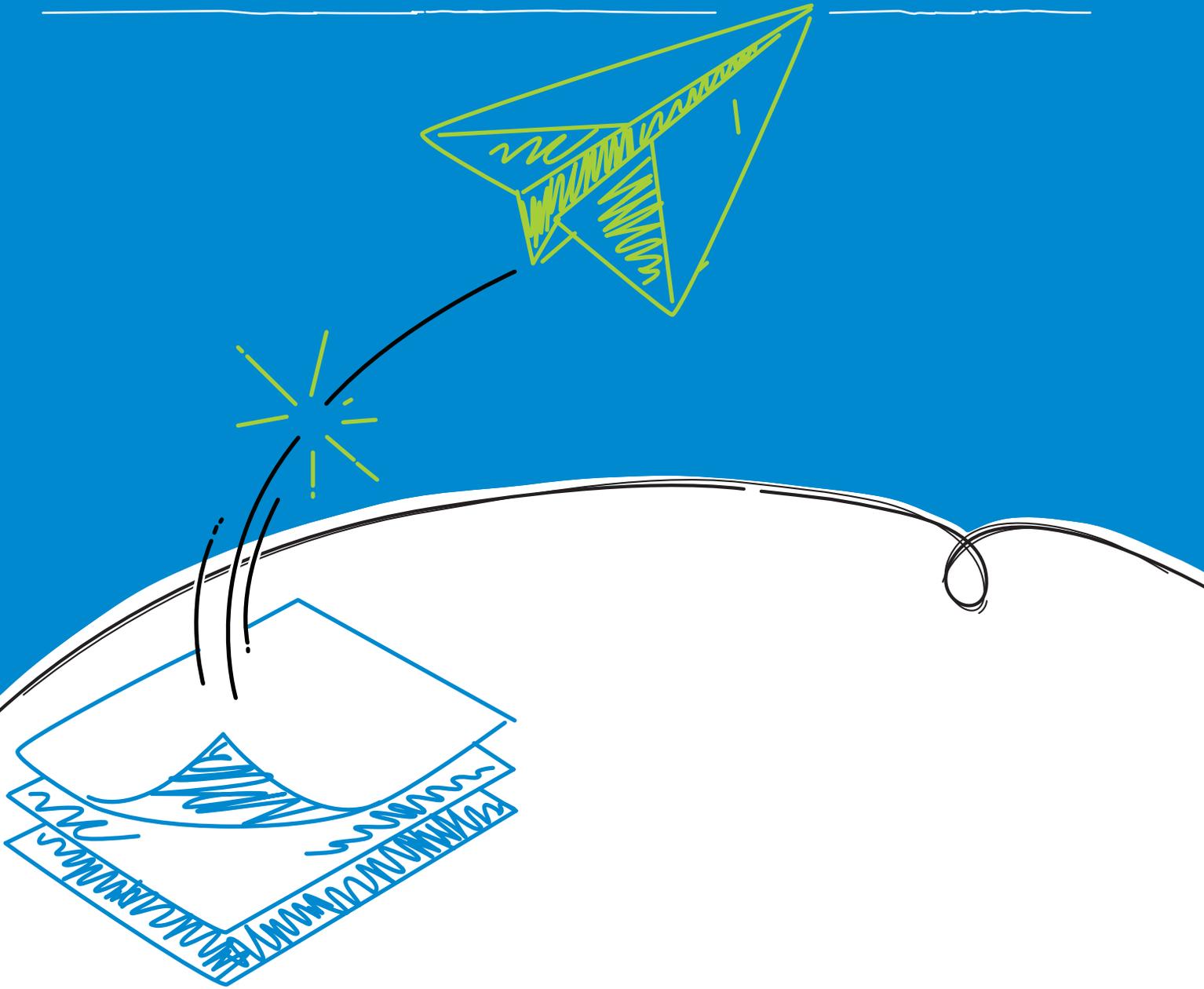
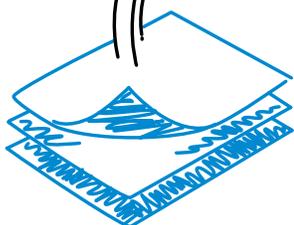

White Paper



Open Educational Resources (OER) and the Evolving Higher Education Landscape



At Cengage Learning, we believe that engagement is the foundation of learning. Engagement is at our core and our focus is on engaging with learners, both in the classroom and beyond, to ensure the most effective product design, learning solutions and personalized services — all to help people learn. We understand that an engaged learner is a successful one and we are leading the transition to digital with a unique faculty AND student perspective to transform learning through engagement. Our name itself reinforces this core commitment — “engage” is at the “center” of all we do.

Lowering costs, improving the quality of course materials, and boosting student engagement and graduation rates are at the top of virtually every higher education institution’s wish list. Cost and quality are the key elements that influence instructors’ decisions about course materials.¹ And one in five college students has skipped or deferred a class due to the price of the required learning resources. Combined with the pervasiveness and power of the Internet, these factors are driving a potentially game-changing trend in higher education: Open Educational Resources (OER) — learning materials that are free for any inquiring mind to use.

The appeal of OER is obvious. What’s not to like about the concept of high-quality online resources for free? Clearly, OER holds promise as a potent arrow in the quiver of institutions seeking to offer some financial relief along with innovative, accessible new tools for teaching and learning.

Who’s using OER, who’s not, and why? Where is OER headed and do educational content providers fit into the picture? Out of primary and secondary research conducted by Cengage Learning in early 2016, a view emerged of the evolving OER landscape. As a former CEO of a non-profit technology company said, “The longer game with OER is really in the adaptive and customization capabilities to spur learning outcomes.” And, as new non-profit and for-profit organizations seek to carve out market niches, education and technology companies — with proven technology platforms suited to OER integration as well as expertise in content curation and quality content development — have an important role to play in adding value to the OER learning experience.

The Origins of OER

The William and Flora Hewlett Foundation defines OER as “teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.”

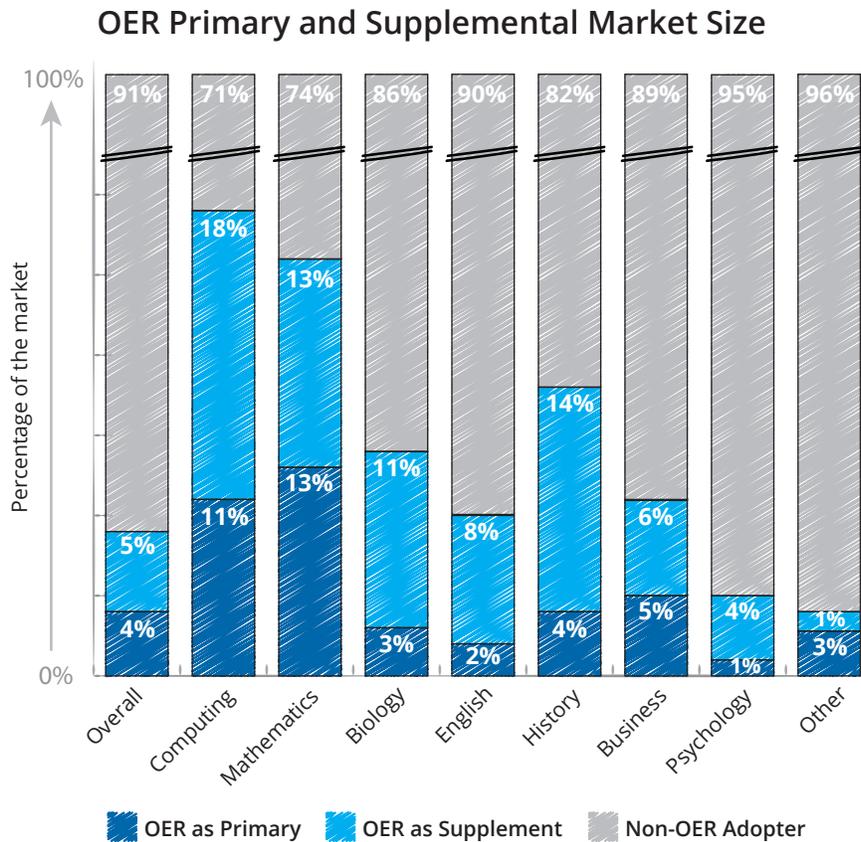
The idea of “open content” goes back to 1998. That’s when David Wiley (currently chief academic officer at Lumen Learning) coined the term with the goal of applying principles of open source and free software to creative works including writing, images, sounds, and videos. At its core, open content describes a copyrightable work that is licensed in a way that provides users with free, perpetual permission to retain, reuse, revise, remix, and redistribute (the 5Rs).² Dr. Wiley was, and is, particularly interested in how open content can reduce the cost and increase the quality of education.

MIT is often credited for launching a global OER movement with the introduction of its OpenCourseWare program in 2002. A few years later, the Khan Academy made K-12 educational materials available for free to any student in the world. A growing stream of initiatives has followed, from YouTubeEDU in 2009, to Stanford University’s free online courses (which drew more than 350,000 enrollments around the world in 2010), to the now widely known TEDTalks introduced in 2012.³

OER Use on the Upswing — Funding Helps Drive Growth

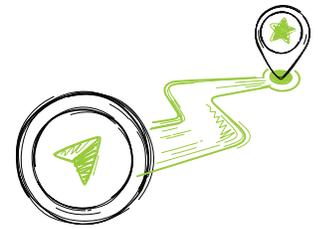
Cengage Learning interviewed industry experts and surveyed more than 500 OER primary adopters, supplemental adopters, and non-adopters. Overall, 4% of the higher education respondents use OER as primary materials. The most widespread use is in mathematics (13%) and computing (11%), and the lowest use in English (2%) and psychology (1%). As supplemental material, OER is used by 5% of the respondents overall, including 18% in computing, 13% in mathematics, 8% in English, and 4% in psychology (Figure 1)

Figure 1. OER Primary and Supplemental Market Size.

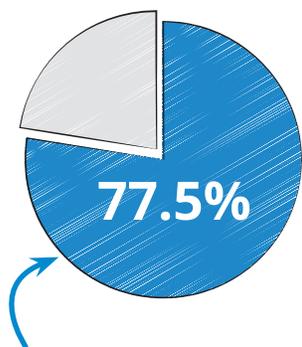


The surveys also indicated that OER use could grow to comprise 12% of the primary courseware market and 19% of the supplemental adoption market within five years. These results align with data from a Babson Survey Research Group study, *Opening the Curriculum: Open Educational Resources in U.S. Higher Education, 2014*. Funded primarily by The William and Flora Hewlett Foundation, the survey examined the attitudes, opinions, and use of OER among teaching faculty. When faculty members that were not current users of OER were asked if they expected to be using OER in the next three years, a majority (77.5%) reported that they either expected to use OER or would consider using OER.

Other drivers play key roles in OER's growth. Some of the interest can be attributed to instructors who are open to diversifying course content and more willing to adopt OER. More compelling is that money from major foundations and other sources is flowing freely in support of OER initiatives. For example, the Hewlett Foundation has funded 177 OER-related projects in K-12 and higher education since 2002. Institutional



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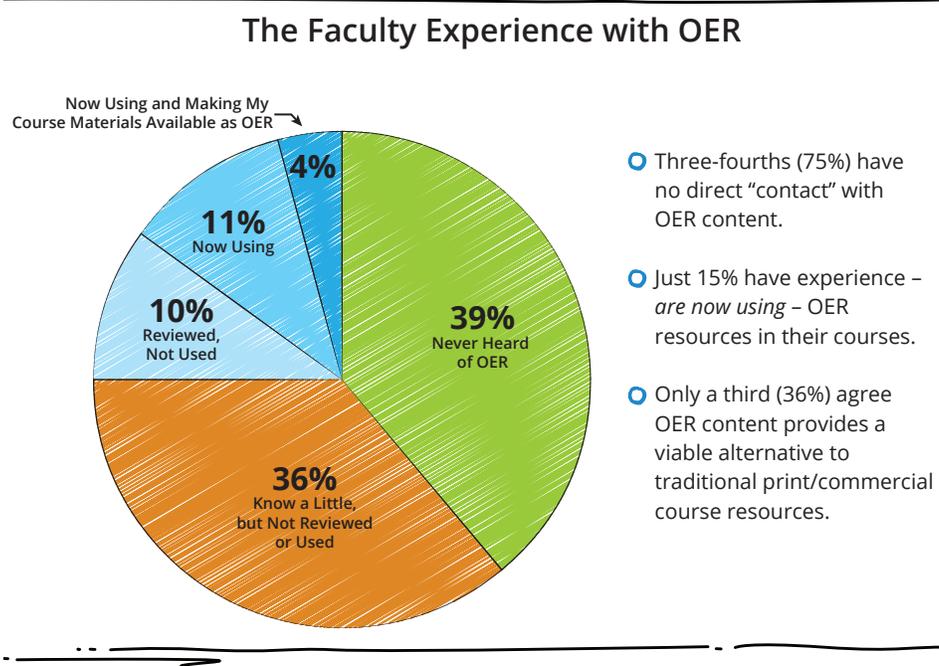
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administrations face pressure to drive down the cost of higher education by adopting OER instead of traditional publisher textbooks. In fact, recent federal and state government grants have included requirements for all material created with grants to be open licensed. And more than 35 states already have grants or policy supporting OER creation and adoption in the higher education space.

OER Still Not a Household Word

Despite these circumstances, OER isn't on the tip of every tongue at college and university campuses — yet (Figure 2). In a survey sponsored by the Independent College Bookstore Association (ICBA), 39% of the participants indicated that they had never heard of OER, while 36% indicated that they knew a little about OER but had not used or reviewed OER materials. Ten percent had reviewed but decided not to use OER materials for their classes, 11% were using OER materials, and 4% were using OER in their classes and also making their own course materials available as OER.⁴

Figure 2. Faculty Experience with OER. Source: <http://www.campuscomputing.net/goingdigital2016>



The 2014 Babson report supports these data, noting that between two-thirds and three-quarters of faculty classified themselves as not very aware of open educational resources. At the same time, most appreciated the concepts of OER and said they'd be willing to give it a try once they heard about it, so momentum will certainly continue to build.

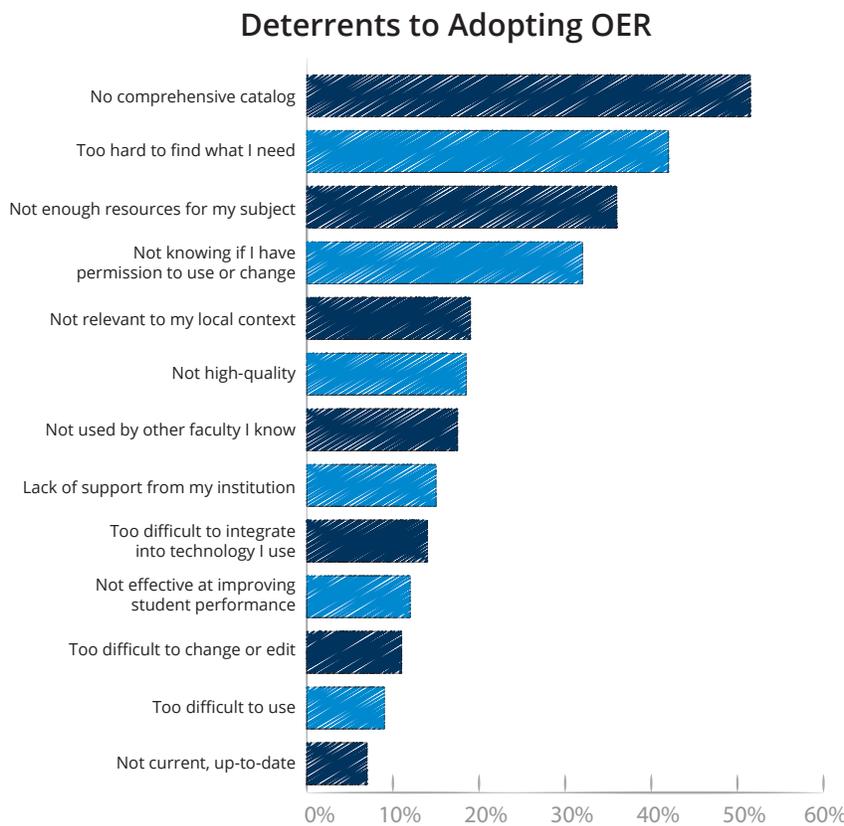
Obstacles to Adoption Exist Despite Satisfaction with OER

Users in the Cengage Learning survey generally expressed satisfaction with the OER materials they were using, with 60% highly satisfied. In the 2014 Babson survey, participants judged the quality of OER to be roughly equivalent to that of traditional educational resources. OERs were deemed to be more current than traditional publishers' resources, while traditional resources were deemed superior in the areas

of range of subjects, range of materials for each subject, resources mapped to learning outcomes, and trusted quality. Overall, 31% of those who had an opinion on OER rated their quality as excellent or good, versus 56% who rated traditional resources as excellent or good.

The Babson research also highlighted some obstacles to widespread use of OER, primarily related to difficulty in finding resources, concerns about unknown permissions and quality, and, to a lesser degree, difficulty in integrating the resources (Figure 3). The most significant barrier to wider adoption of OER was a faculty perception of the time and effort required to find and evaluate it. The lack of a comprehensive catalog (cited by 51.5% of faculty aware of or using OER) and the difficulty of finding what is needed (cited by 42%) were the most often cited barriers. These results mirrored earlier findings among academic leaders.

Figure 3. Deterrents to Adopting OER. *Source: Opening the Curriculum: Open Educational Resources in U.S. Higher Education, 2014*

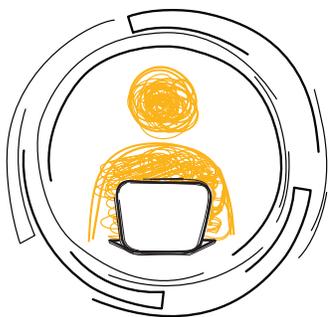


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New Providers Enter the OER Arena

The burden of locating OER resources, assessing their quality, connecting them to related resources, and sharing them with others often falls on individual educators — but probably not for long. Efforts are underway to evaluate, consolidate, organize, and leverage the large collections of learning resources that sit online.

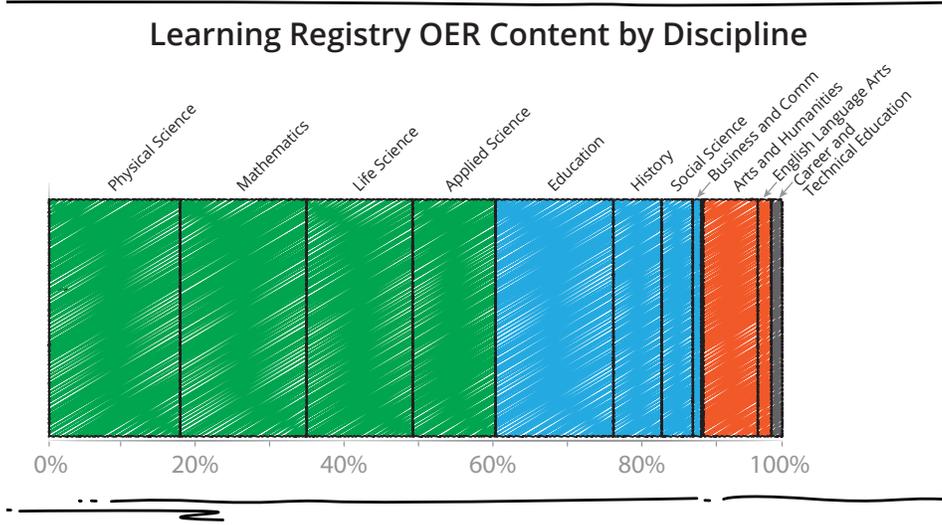
For example, the Learning Registry is a joint effort of the Department of Education and the Department of Defense, with support of the White House and numerous organizations. The registry acts as an aggregator of data about the learning resources



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available online, including the publisher, location, content area, standards alignment, ratings, reviews, and more. It has cataloged nearly 120,000 resources, including 78,000 in the most common subject areas such as science and math (Figure 4). However, this catalog represents the tip of the OER iceberg. For example, RNA translation is a challenging topic in biology; a Google search for “free RNA translation animation” yields more than 250,000 results.

Figure 4. Learning Registry OER Content by Discipline. *Source: Department of Education: Learning Registry*



Not surprisingly, a number of for-profit and non-profit players are developing digital solutions based on OER; for instance, Acrobatiq, Cerego, CogBooks, Creative Commons, Lumen Learning, OpenLearn, OpenStax, and Smart Sparrow. Some are aggregating peer-reviewed content into easily discoverable repositories and easy-to-adopt textbook or course packages — directly addressing users’ difficulty in finding appropriate quality content for specific courses.

Incumbent Providers Leverage Proven Platforms

Established higher education content providers are also entering the ring. At least in the short term, these companies may have an edge in delivering curated OER content due to their subject area expertise and easy-to-use technology platforms. For example, Cengage Learning’s ownership of Gale gives it search, cataloging, and database expertise. Course offerings based on OER could take advantage of content providers’ proven ability to deliver digital courseware with systematic learning tools and pedagogy. Such products also have the potential of being provided at significantly less cost than existing digital solutions based solely on copyrighted content — while providing an integrated platform, curated content, mobile access, and instructor support.

The Days Ahead for OER — Integration with Learning Technology

If OER is to become truly mainstream, it will need to be integrated with personalized and adaptive learning technologies — including assessment and analytics — that help to improve student performance by mapping objectives to outcomes. Quality content can only go so far; it must be ‘wrapped’ in an instructionally designed framework that creates a cohesive and effective learning experience.

In an interview with Cengage Learning, a former CEO of a technology company involved with OER said, “The longer game with OER is really in the adaptive and customization capabilities to spur learning outcomes.... People don’t just want OER content in a pdf, they want a blended experience through technology.” A former officer at a large foundation that supports OER echoed the idea. “The changing tech savviness of students and parents drives the desire for personalized learning and helps make OER appealing.... As OER becomes mainstream, people are pushing for not just content itself — we’re going to see a surge in services and customizations around personalized learning.”

To be sure, for-profit and non-profit organizations (e.g., Cerego, CogBooks) are building proprietary and open-sourced technology platforms with OER content to enhance learning. But in the learning technology arena — which addresses institutions’ and instructors’ demands for pedagogical support and assessment, personalized learning, and course management using OER content — incumbent educational content providers have an edge with adaptive learning platforms that have proven themselves to be effective, and into which OER content can be integrated. As a result, they may be able to accelerate the delivery of custom solutions that integrate OER and add value to institutions’ OER-based learning experiences.

Cengage Initiatives Support OER

Among the incumbents, Cengage Learning offers the MindTap® online learning platform, which has been shown to be effective in improving student engagement and learning outcomes in numerous studies across multiple disciplines. The platform, which will house content for more than 800 courses by the end of 2016, is the most “open” of the learning platforms from education and technology companies: its flexible e-book and learning path format allows users to add any content to the existing content.

Cengage Learning’s 2015 purchase of Learning Objects adds to its portfolio another robust platform — an “operating system for learning” — that can be applied to help institutions design customized learning solutions at the program level, including integrating OER content.

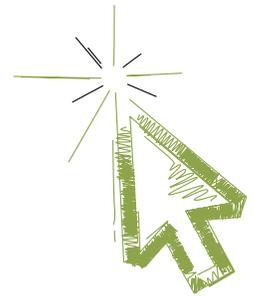
With its vast content and two proven platforms for delivering it, Cengage in 2017 plans to join the ranks of educational and technology companies that are supporting the OER movement. The company’s initiative will meld the best in accessible and affordable teaching and learning offered by OER, with its own content-curation efficiencies and platform efficacy.

Conclusion

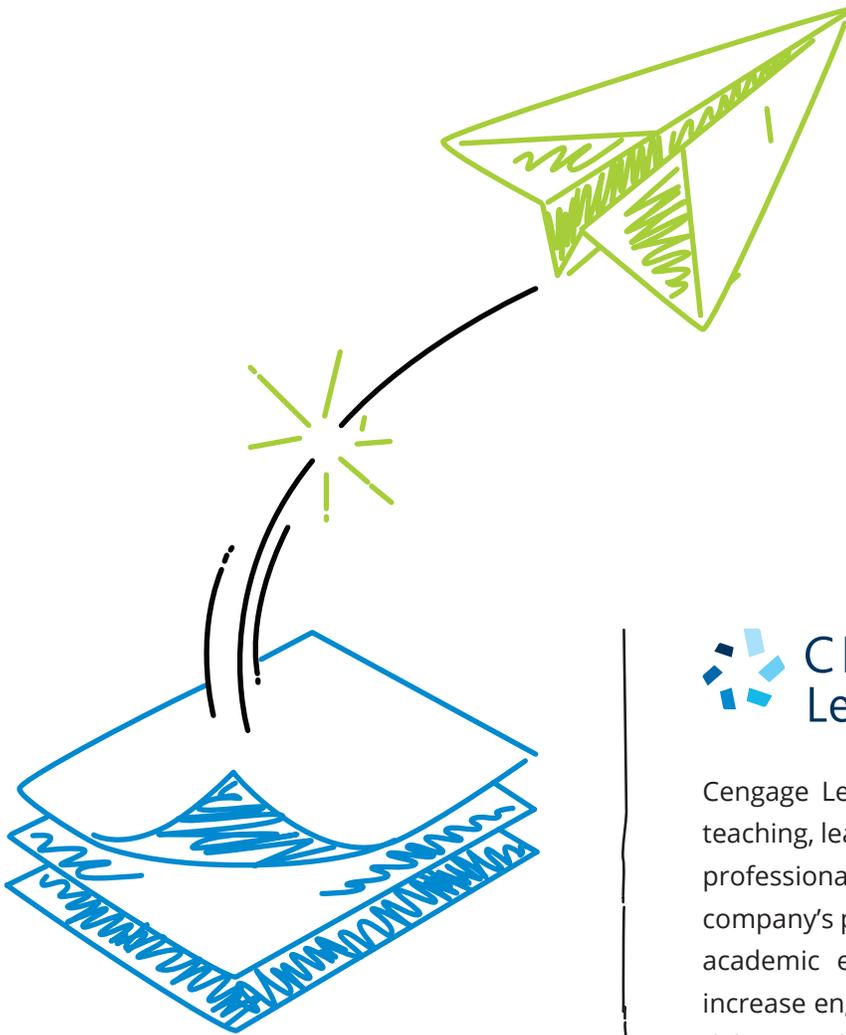
Open Educational Resources are undoubtedly here to stay, and they can add variety, quality, and depth to the educational resources pool — at lower cost. But given the myriad OER options available from equally myriad sources — and the time and energy required to find, organize, and integrate them into higher education courses — “open” doesn’t necessarily mean “free.” Expect incumbent education and technology companies such as Cengage Learning to embrace the movement and apply their content knowledge, cutting-edge learning technology platforms, and services expertise to create value-added digital solutions that help institutions use OER to its best advantage.

NOTES

1. <http://www.campuscomputing.net/goingdigital2016>
2. <http://opencontent.org/definition/>
3. <http://elearninginfographics.com/history-open-educational-resources-infographic/>. December 18, 2014.
4. <http://www.campuscomputing.net/goingdigital2016>



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